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**ENHANCING CREATIVE BEHAVIORAL EXPRESSIONS  
IN SCHOOL SYSTEMS: THE NEED FOR EDUCATIONAL REFORM  
AND A CENTER FOR CREATIVITY**

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**Curriculum and Instruction**

**by**

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## ABSTRACT

This study aims to initiate a movement calling for innovative school reform: “Education for Creativity rather than Education for Achievement”. The main purposes of this study are to explore stake-holders’ perspectives, including experts and teachers, on creativity in young children; explore specifically whether teachers are able to recognize creative behaviors in young children; identify some of teachers’ misconceptions about what constitutes creative behavior; identify descriptor behaviors of creativity that are observable and reflect the creative process rather than the creative product; identify the dynamics of creative expression; and identify the most effective ways to enhance children’s creative expressions in the educational system.

The Creative Behaviors in Young Children Checklist (CBYCC) has been created by the researcher of this study to include 265 items that represent observable behaviors in young children that reflect or may relate directly or indirectly to creativity. A new profile for understanding creativity in children and adults is introduced in this study. In addition, an innovative model for a Center for Creativity is proposed by this researcher.

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# CHAPTER 1

## *INTRODUCTION*

“To be human is to be creative. To be human is to be creative in various ways in a variety of fields. All one has to do in order to see this is to witness our human history. History also illustrates the fact that each of us is creative in unique ways in different historical epochs” (Floistad, 1993, p. 202).

“everybody is creative. Without creativity, we could not adapt to new situations or change the way we view the world. When people identify someone as "creative" then they mean something about the degree of creativity displayed. This degree of creativity depends upon the extent to which the ideas or results of the process are novel, valuable, differ from previous ideas or approaches, can be applied in other situations, and go beyond the commonplace. Such creative behavior is, by definition, unusual and unconventional. It has been said that just as low intelligence is stupidity, so is very low creativity ordinariness.

“Not everyone will be delighted by the way a creative child thinks. No adult would wish for a child to be stupid, but they often pressure children to be ordinary” (Presbury, Benson, Fitch, & Torrance, 1990, Background section, para. 1).

These statements represent important perspectives about creativity that are often overlooked, but they are important to consider in our philosophies of life and education. If we want to work seriously to create a bright future in the world, we need to recognize these insights about the importance of creativity and apply them to our lives and work as educators. Although scholars have made essential claims such as these for more than fifteen years, today creativity is still not completely recognized, nurtured, or appreciated in children or in adults in many social contexts worldwide, including in most educational institutions and workplaces. When examining how societies should deal with children’s creativity or intelligence, Goertzel, Goertzel, Goertzel,

and Hansen, in *Cradles of Eminence: Childhoods of More than 700 Famous Men and Women* (2004), assert that: “the children who are both intelligent and creative remains society’s most valuable resource. When we learn to work with them instead of against them, their talents may reward us in ways beyond our ability to imagine” (p. 304).

Similarly, Friedel (1996) focuses on one of the most momentous crises related to handling children’s creativity and giftedness in our society. Friedel (1996) warns that “We believe there is a crisis in education when gifted and creative children are found in mental institutions or homes for the retarded. We believe there is a crisis in society when gifted children grow up and are later convicted of crimes because, as one eminent psychologist puts it, “the years of frustration, denial and treatment as a “freak” finally takes its toll” (p. 7).

Sternberg (2006) also comments on the costs of our society’s mistaken views about creativity: “our fundamental premise is that creativity is in large part a decision that anyone can make but that few people actually do make because they find the costs to be too high. Society can play a role in the development of creativity by increasing the rewards and decreasing the costs” (p. 97).

Creativity in our lives is a continuum from birth to late adulthood. Focusing most closely on children’s creativity at a very young age and early in the socialization process, Presbury, Benson, Fitch, & Torrance (1990) observe that the “grown up” society is focused on how to mold young children to conform to the rest of society (Development section, para. 1). If adults accept imaginative or dramatic play in the early years of life, they do not accept it in the later years of childhood, and instead they emphasize the realistic use of things and materials. Adults usually believe that they should strongly influence children to use things in the places, at the times, and in the ways they should be used. Adults usually control their children’s play and

endeavor to raise them to be obedient and follow adults' rules and authority without questioning. These researchers give us an example: if a two-year old child imagines that a saucepan can be used as hat, a drum, or in any other unusual way that differs from its intended purpose, adults usually happily accept such behavior at this age. But if the same child or another child does the same thing in later childhood (for example, beginning around age 6 and afterward), adults tend to stop accepting this type of play, and they begin to restrict the use of the saucepan for cooking in the kitchen. This example illustrates why many children face a major drop in their creative expressions around age 9 or 10. This frequent drop in creativity increases the possibility of children turning out to be ordinary adults, which occurs when children fail to insist on their creativity and fail to recuperate after facing such external pressure to suppress their creativity.

As illustrated by such matter-of-fact responses from many parents to children's creative freedom in play, many parents, teachers, and other adults do not recognize the worth of children's free play and how it prominently influences creativity development and expressions in childhood as well as in adulthood. As reported in *Different Minds: Gifted Children with AD/HD, Asperger Syndrome, and Other Learning Deficits*, Lovecky (2004) states the following view:

Creativity for gifted children is play, even when they are engaged in making some type of product. The product endpoint is not so important, though, as is the fun of doing the work. Creative work is only worth doing so long as it has some aspects of fun. When it becomes only hard work or is done to meet another's expectation, then it is no longer creative. Thus, the process is as important as the product. Gifted people who are creative do not stop being creative, even if they achieve little in the way of recognition. It is not the recognition that makes them creative but their own inner connection to their material. The process of becoming one's whole self, of using all of one's potential to benefit oneself and others, should be the goal of gifted people. (p. 246)

Regarding adults' roles in nurturing creativity in children, Md-Yunus (2007) believes that "Adults can encourage creativity by emphasizing the generation and expression of ideas in a

non-evaluative framework and by concentrating on both divergent and convergent thinking. Adults also can try to ensure that children have the opportunity and confidence to take risks, challenge assumptions, and see things in a new way” (p. 237). To emphasize the amazing power of living creatively in early childhood, when each child should enjoy the maximum level of creative expression and the nurturing of their creative potential to support their future adult creativity, Gardner (1993) notes, “As Baudelaire once remarked, genius is the ability to recapture one’s childhood at will” (p. 402).

Gardner (1993) further describes childhood creativity, examining

the relationship between the child and the adult creator. This theme reflects my belief that important dimensions of adult creativity have their roots in the childhood of the creator. In the study of Einstein, this theme provides a way of examining the connection between the kinds of questions a gifted child ponders, and the nature of training and thinking required for the adult practitioner to answer such questions. In the study of Picasso, I turn my attention to the relationship between the productivity associated with youthful prodigiousness, on the one hand, and with mature mastery, on the other. (p. 30)

Along similar lines, Lynch and Harris (2001) advise us to consider the nature of childhood and the nature of creativity itself. These authors believe that “Creativity is change because it reflects originality, and originality, by definition, is always new. Like the children in our charge who grow day by day, reaching for new things, discovering new powers, creativity shifts and changes. A mysterious source present in all human beings, creativity in the growing child attains new depths and reaches greater heights with each nurturing touch” (p. ix).

Further observations can explain the connection between children’s creativity and achievement, and the settings of formal education. Freeman (as cited in Lovecky, 2004) has observed that typically in schools, gifted children identified as the highest achievers were not the most creative students. To reach the highest level of achievement means that gifted children have to choose to suppress their creative potentials. In other words, in order to achieve, there is not

much free time or solitude to create and to pursue a child's own interests. So creating or achieving are two opposing choices that gifted children face. Skromme (1988) also notes that people distinguished with high IQ levels in most cases are not able to produce something creative that has a significant impact, and they are usually characterized with high academic abilities that benefit themselves, rather than benefitting the whole society, as can be the case with creative people.

Even creators themselves have made similar observations during their journeys along the creative process and discovering their own creative selves. For example, Sulloway (1996), in *Born To Rebel: Birth Order, Family Dynamics, and Creative Lives*, reports Charles Darwin's statement: "I have been speculating last night what makes a man a discoverer of undiscovered things; and a most perplexing problem it is. Many men who are very clever—much cleverer than the discoverer—never originate anything" (preface).

In terms of defining creative contributions, Sternberg (2006) declares:

A creative contribution represents an attempt to propel a field from wherever it is to wherever the creator believes the field should go. Thus, creativity is, by its nature, *propulsion*. It moves a field from some point to another. It also always represents a decision to exercise leadership. The creator tries to bring others to a particular point in the multidimensional creative space. The attempt may or may not succeed. There are different kinds of creative leadership that the creator may attempt to exercise, depending on how he or she decides to be creative. (pp. 95-96)

In describing further the creative person, Smith and Carlsson (1990) explain:

The creative person is commonly regarded as being filled with new ideas and projects: he views life from surprising perspectives, formulates problems contrary to what he has been told by parents and teachers, turns traditional and seemingly self-evident conceptions topsy-turvy, and wants to retest the validity of accepted "truths". He may seem stimulating, but also trying and awkward. We usually accept a creative attitude as a constituent part of artistic work, research, and technical construction. But creativity permeates all aspects of human activity, including our everyday business and communication. (p. 1)

In sum, after examining deeply all of these views, a clear conclusion emerges that everyone enjoys creativity as a human characteristic. A high achievement level, however, is not a major predictor for creative productions, and significant questions arise about how adults in society perceive children's creative behaviors and recognize them in connection to their value for the future of the whole world. In addition to questioning how adults consider and appreciate creativity, researchers also question how educational programming recognizes creativity as a significant component, which will be emphasized in this study.

### **The Problem of Creativity in Contemporary Education**

This researcher believes that there is a significant need for education reform that emphasizes a creative educational philosophy and practices rather than achievement. This researcher proposes in this study an innovative model of a Center for Creativity that effectively adopts creativity at all levels, which may significantly enhance creative behavioral expressions in school systems.

Pink (2006), in *A Whole New Mind: Why Right-Brainers Will Rule the Future*, states:

The last few decades have belonged to a certain kind of person with a certain kind of mind--computer programmers who could crank code, lawyers who could craft contracts, MBAs who could crunch numbers. But the keys to the kingdom are changing hands. The future belongs to a very different kind of person with a very different kind of mind--creators and empathizers, pattern recognizers, and meaning makers. These people--artists, inventors, designers, storytellers, caregivers, consolers, big picture thinkers--will now reap society's richest rewards and share its greatest joys. (p. 1)

We enjoy living in this world because we enjoy the benefits of the products that were fashioned by creators across history rather than the products of high achievers. Since a high level of achievement does not always guarantee creative action, education's target should be recognizing

and nurturing the creative behavior and process, beginning with its inception in the early years of life and continuing through late adulthood. From this researcher's point of view, supporting the creative process from early childhood through late in life is the key for a creative future for all children and adults.

Silverman (2004) predicts the growing importance of creativity to our society's future development:

Ironically, more and more image-thinkers are being born throughout the world. In past generations, they were often crippled in our schools and marginalized in society. But this millennium belongs to those who are gifted in imagery. It is their genius that created the technological era, and they are the ones who will thrive in the 21st century workforce. The left-hemispheric curriculum of reading, handwriting, and calculating, which dominated schools for centuries, is obsolete. These skills are not sufficient to gain employment in today's world. Creativity, facility with computers, visualization skills, and the ability to see and solve problems from many different perspectives are becoming more critical. These visual-spatial skills have been peripheral in education. By the middle of the 21st century, I predict that they will be central. The skills we have prized for thousands of years will be relatively useless when every child has a computer. Instead of worshipping the printing press, schools will need to prepare students for the computer-based, creative, visually-oriented careers awaiting them. (p. 4)

Einstein was four years old before he was able to speak and seven before being able to read. Newton did not receive good grades in school. Thomas Edison was perceived by his teachers as an excessively unintelligent learner in gaining knowledge of anything. Winston Churchill was not successful in the sixth grade, and in fact he failed that grade level. Pablo Picasso also failed at school. Furthermore, Walt Disney was fired from his job by a newspaper editor because he was thought to have "no good ideas" (Scanlon, 2007, para. 1). These are just a few examples of the many creators who faced problems in their schooling and/or career experiences. When we become aware of such examples, we recognize that there are many things still missing from the formal educational system as well as from many workplaces. Here the



most critical question arises: Why were most of these creators perceived as developmentally delayed or disabled learners, as underachievers, or even as unqualified for their careers? Because in reality, they did create many products that we still enjoy today. Why do children, youth, and adults who resist and continue to be creative still face the same problems that have been faced by previous creators in history, although educational philosophies, both their application and their quality, have advanced significantly since the early years in the history of education? According to logic, more creative expressions, inventions, and innovative outcomes should have been produced, but the opposite may have happened. Historically, we have enjoyed more creative production in comparison to recent years. There are things which are still not yet addressed or have not been studied thoroughly through the history of education that cause common problems for every child, youth, and adult who chooses and insists to manifest creativity throughout their lives. What about others who have creative potential, as everyone does by nature, but have always failed to express it? The world has lost everlastingly their powerful energies throughout their long educational journeys.

How can education benefit children, youth, and adults, and also benefit from them if they do not produce creative actions or products? We need to ask ourselves why do not all children, if all are creative by nature, turn out to be creative adults? Why do we still encourage high grades in schools as a measure of high achievement rather than supporting the creative process as a path for more breakthroughs? Why do we keep calling for nurturing creativity in schools and other institutions, and yet many parents, teachers, as well as professionals in many fields, still cannot recognize creative behavior expressions or even simple elements of the creative process? Nurturing creativity until the present has largely just meant providing creative materials, with no creative teachers, instruction, curriculum, or even creative assessment. Accordingly, for the most

part there will be no recognition, development, and enhancement of creative behavior, and there will be a big possibility of diminished creative processes and productions since we face serious prospects of sub-standard creative learning and learners.

Butcher and Niec (2005) stress the importance of creativity for our future society's benefit, claiming that "Creativity is an important adaptive resource that leads to artistic and technological advances. The ability to develop multiple solutions to problems is also essential for solving interpersonal difficulties" (p. 191). We are moving toward a new era, and we must be prepared as individuals and also as societies around the world to meet the next century's upcoming challenges. A preparation process for the whole society will occur through accomplishing creativity in our educational institutions and in our philosophies about careers. According to this position, creativity requires quality management in school systems as well as in other educational institutions and workplaces, which as a result will strengthen a creative society, in which all of its members enjoy quality education and in which creative professions can be a true reality.

This researcher believes that creating access to quality education is one of the most significant keys for building a creative world. Creating access to education does not mean simply opening educational opportunities to all children and adults at the level of quantity, but it goes further than that. This researcher believes that creating access to education means originating, facilitating, and nurturing educational opportunities in terms of quantity and quality.

In order to make the maximum quality of education accessible to all individuals, educational institutions in all communities should consider individuality by appreciating each student as an individual with their own special needs. Each person, including children, has their own creative needs and their own receptive or expressive learning styles that provide the best

learning channels and opportunities for them. Ignoring or mistreating these learning styles may lead children, youth, and adults to suppress their creative potentials. If this occurs, children, youth and adults stand the chance of being academically, emotionally, cognitively, physically, or socially at-risk. The same risk is true also for children, youth, and adults who choose to express their creative energy appropriately or inappropriately. Those who choose to continue expressing their creative potential will also be at risk if they do not meet the expectations of their learning and working environments, or if they are discouraged from creative behaviors through negative responses from others.

In the case of creative individuals, these children's, youths', and adults' creative needs may not be met in the classroom, home, workplace, or any community settings. They may choose to continue to express their creativity, and as a result may suffer academic, emotional, cognitive, physical or social problems including conflicts, maladjustment, crimes, and violence.

Other children, youth, and adults may respond by suppressing their creative energy, which may lead them to similar risks for problematic or anti-social behaviors. Their creative energy may destroy them, if there is no chance for it to be expressed. They may suffer from loneliness, learning disabilities, behavior disorders, psychological problems, or even suicide.

In other cases, children, youth, and adults may choose to express their creative energies inappropriately by destroying others instead of destroying their own selves. So they may lie, cheat, steal, bother their peers or colleagues, exhibit aggressive behaviors, or even initiate small crimes which could lead to serious crimes in the future.

In all of these cases, these creative children, youth, and adults are considered vulnerable individuals. Supporting children, youth, and adults who are at-risk and meeting their creative

needs is the most powerful way to create access to quality education and professions for all learners.

For instance, there are a majority of children who are at an everyday risk--those who developed to be right brain learners. Such children are at a very high risk because they are often misunderstood, their abilities are often less valued, and they are often misdiagnosed, although most of the time they are very innovative and ingenious. As a result, they usually suffer from many problems in their schooling experiences. "Children with stronger right hemispheres are often seen as underachievers. When children have weaker left hemispheres, they may be highly creative and talented, but struggle with linear- sequential work. They become disengaged with school and at risk for anti-social endeavors" (Silverman, 2004, p. 2).

From the perspective of valuing equal opportunity and diversity, everyone, from birth to late adulthood, has the right to fully express their creative potential (e.g., Friedel, 1996; Gardner, 1993; Jalongo, 2003), and to enjoy the best quality of educational programming and workplaces that allow them to learn, develop, and to be enhanced creatively. This programming should meet their creative needs and should nurture their creative potentials, to lead to more creative expressions within the school system and to produce more creative, productive adults who will benefit the world in the near future.

A belief in the child's right to creative thought and expression transforms the classroom. In the past, in the present, and in the future, our most enlightened visions of education will be connected by the common thread of imagination, creative thought, and enhanced opportunities for creative expression. As we look ahead, it will no doubt be possible to trace society's greatest innovations and achievements back to an abiding respect for creative thought processes during childhood. For when we value creative thinking and creative expression in society, it becomes part of our social consciousness and social capital. Society then protects its reserves of creativity by fashioning networks of support that are capable of instilling confidence, promoting resilience, and multiplying ways of being intelligent in every person, commencing in childhood and continuing throughout the lifespan. (Jalongo, 2003, p. 226)

Even the children, youth, and adults who have been classified as having special needs or disabilities should be included in light of this equal opportunity framework. This researcher, along with many other authors (e.g., Williams, 1983; Hartmann, 1996; Armstrong, 1997; Davis, 1997; West, 1997; Freed & Parsons, 1998; Palladino, 1999; Sowell, 2001; Golon, 2004; Web, Amend, Webb, Goerrss, Beljan, & Olenchak, 2005), believes strongly that a disability can always be a gift.

For all of the previous reasons, this researcher believes strongly that there is a significant need to initiate, through this current research, a new educational reform that calls for “Education for Creativity rather than Education for Achievement”.

Today in school systems all over the world, the only end goal of the educational process is achievement. There is not much room for nurturing creative potentials and processes. All instruction, curricula, and assessment techniques are focused on achievement. Even teachers, who are critical members of the educational process, are personally and professionally oriented towards high-achieving students rather than highly creative students. This has been demonstrated in many studies. For example, Scott (1999), in her research on “Teachers' Biases Toward Creative Children”, notes the following:

From the results of this study, teachers do appear to hold negative perceptions about creative children being disruptive. These perceptions provide valuable insight into how teachers view creative children and may prove helpful in designing new programs to help teachers foster creativity and manage divergent questions. Such programs should help to encourage greater tolerance for creative behavior in the classroom. (p. 328)

Here arises, from this researcher’s perspective, the significant need for initiating a new educational reform that calls for a creative educational philosophy that is able to more effectively

recognize, enhance, assess, and appreciate creativity in all learners at all levels of education, including young children, and even if learners have special needs.

Since teachers are one of the most influential adults in children's lives, especially in their early years of life, and since the early childhood years are the most critical years that influence our future lives, teachers represent vital building blocks in educational programming. The main focus of this research will be examining teachers' views of creativity in young children and their ability to recognize children's creative behavior

Examining teachers' views, attitudes, and abilities to recognize creativity in children is the most significant key to effectively and fully nurturing children's creative potential and maximizing the appreciation of children's creative processes and expressions. Teachers will not promote creativity in their students if they do not believe that creativity is important for themselves, in the first place, as human beings (Craft, 2002). If they do not value creativity, they will not work to be creative in their teaching, nor foster creativity in their students, nor make their classrooms a creative, nurturing environment. The same results are likely if teachers have misconceptions about creativity, if they are unable to apply creativity in their classrooms, or if they are unable to recognize creativity in themselves or their children (Starko, 2001).

Ugur (2004) asserts that "This claim is very important for the future of human advancement. When teachers do not know what creativity is, how it manifests and how it is important, they may ignore teaching for creativity; thereafter, loss of creative talent is reflected in scientific and artistic advancements in particular, and in human civilization in general" (p. 217).

## **Purpose of the Study**

This study aims to initiate a movement calling for innovative school reform, “Education for Creativity rather than Education for Achievement”. The main purposes of this study are to explore in general stake-holders’ perspectives, including experts and teachers, on creativity in young children; explore specifically whether teachers are able to recognize creative behaviors in young children; identify some of teachers’ misconceptions about what constitutes creative behavior; identify descriptor behaviors of creativity that are observable and reflect the creative process rather than the creative product; identify the dynamics of creative expression; and identify the most effective ways to enhance children’s creative expression in the educational system.

## **Needs for the Study and Educational Significance**

There are a number of needs that emphasize the importance of this study on education and creativity. As follows, there are needs to:

1. Call for new school reform that emphasizes “Education for Creativity” rather than “Education for Achievement”.
2. Understand what constitutes creative behavior in young children.
3. Identify descriptors of creative behavior in young children.
4. Enhance the recognition of creative behaviors and how they are manifested in children.
5. Correct misconceptions about creativity.
6. Meet the creative needs of children and adults in order to produce more creative leaders for the future.
7. Understand factors that influence creative processes and products.
8. Implement creative philosophies and practices of education in our school systems.

9. Create a more relaxing and cultivating school environment so every learner will enjoy the learning process, which will help enhance expressions of creative behavior among children.
10. Revise the role of creativity in relation to disabilities and special needs.
11. Widen perceptions of creativity so it is considered a natural human characteristic and a life style and skill to be included in our daily lives.
12. Value the benefits of creativity in connection to future needs.
13. View creativity as spanning a continuum from birth to late adulthood.
14. Advise a kind of well-rounded view to deeply facilitate the comprehensive understanding of creative children and adults.

This researcher believes that this study will enhance our perspectives on and our recognition of all people's creative needs and manifestations. This will increase the potential for children, youth, and adults to express their own creativity and become more creative and productive leaders, and contribute to building a world able to creatively meet the challenges of the 21<sup>st</sup> century.

This study may provide the following results:

1. Promote teachers' and professionals' recognition of children's creative behaviors. They may acquire meaningful insights to enhance their practices of supporting and nurturing creativity in their students.
2. Teachers and students may be helped to re-discover their creative potentials and needs.
3. Provide a clear and accurate picture of how creativity is manifested in young children.
4. Enhance educational and professional policies, objectives, and planning, including teaching strategies, curriculum, lesson plans, evaluation methods, classroom rules and limitations, learning expectations, and learning beliefs, in order to effectively meet the creative needs of both children and teachers.



5. Pre-service and in-service teacher education programs as well as professional development programs for teachers may be developed to teach about the above issues related to creativity in education.
6. New questions that highlight other areas of creativity research may be identified.
7. Special education programs may be re-designed to use the giftedness of children and adults to enhance and strengthen their needed areas in personal and educational development.
8. New revisions may be adapted in early intervention tools as well as other psychological measurements to consider new criteria for distinguishing creativity and its manifestation from other special needs or manifestations of disabilities, such as learning disabilities, autism, attention deficit disorder, auditory processing problems, dyslexia, etc. New methods to distinguish creativity will tremendously help to reduce or eliminate misdiagnosis, which represents the most serious problem today faced by creative children and youth.
9. New perspectives on labeling and addressing creative children's needs may be adopted.
10. The further creation of new perceptions and practices of creativity in homes, schools, clinics, workplaces, and other community settings in society will be guided, and also broadened to include daily life activities.
11. Positive opportunities to cultivate all children's, youth's, and adults' creativity as a continuum from early childhood education through late adulthood will be increased.
12. A powerful vehicle to carry out diverse educational and professional philosophies and practices to fit all people, including at-risk individuals and those with special needs, at all levels and settings of education and workplaces, will be presented. Consequently, time, efforts, costs, and potential wastes will be reduced.
13. More creative productions, inventions, talent cultivation, radical thinking, rich knowledge processing, and creative and responsible leadership will be enjoyed.
14. An advanced conception of literacy, Creativity Literacy, will be introduced and adapted in educational programs that serve the nation and the world. Creativity is the future for global civilization that creates one progressive shared language of effective communication across all cultures and civilizations and ages. Creativity is the language of mind peace. It is creativity that connects diverse groups across places and histories.

15. Unique networks among social organizations will be established to work toward reaching the maximum level of well being for children, youth, adults, community, society, and the world.
16. Vulnerable children's, youth's, and adult's performance in schools, workplaces society, and world will be enhanced.
17. This work will radically contribute to the workforce preparation process and to business solutions by demonstrating that quality education leads to quality personality development for children, youth, and our society as a whole. As a result, risks, problematic behaviors, crimes, and violence activities will be reduced. This will let all members of the society enjoy a more peaceful society and a higher quality life.

## **Research Questions**

This research study examined the following questions:

1. What are the diverse perceptions of creativity in young children among experts and teachers?
2. What constitutes creative behaviors in young children?
3. Are teachers able to recognize indicator behaviors of creativity in children? And what are the creative behaviors that were recognized the most, least, or not at all among experts and teachers?
4. What are some of the misconceptions that teachers believe regarding how creativity is manifested in young children?
5. What are the factors and conditions that influence children's creativity?
6. What are the relationships between teachers' backgrounds, perceptions, and their level of recognizing creative behaviors in young children?
7. What are the best ways to help children fully express their creative potentials?

## Organization of the Study

This study addresses these questions at several levels. It is organized in three main chapters. Chapter 1 includes the introduction, literature review, and research methodology. Chapter 2 includes the findings, and Chapter 3 includes the summary, conclusions, and recommendations.

The brief overview of the literature, in Chapter 1, is divided into seven main sections:

1. The future need for creativity
2. The need for assessing creativity in young children
3. Common myths about creativity
4. Creativity in young children
5. Teachers' recognition of creative behaviors in young children
6. Best ways to nurture children's creativity
7. Proposed theory of a new framework for understanding and working with creative children and adults in light of this present research.

This researcher organized the overview of the literature beginning with general questions about creativity and the future, and ending with the focus issue concerning teachers' abilities to recognize creative behaviors in young children, in order to build the rationale for this research study. After discussing the general futuristic needs for creativity in the first section, the overview focuses on creativity in education, which is the main institution that helps society meet future needs. In the second section, this researcher focuses on the need for assessing creativity in young children, which is necessary in order to recognize and develop each child's expression of creative behavior, in order to fulfill our society's future needs over the next century. In the third section, this study explains the common myths and misconceptions about creativity that negatively influence educational philosophies, practices, and future planning. The fourth section addresses understanding creativity in children as well as defining creative behaviors in general,

examining creative persons throughout history to learn more about examples of the problems associated with creative behaviors expressions in early childhood years, which can present challenges in the classroom context.

The fifth section examines teachers' perceptions and influences on children's creativity and whether teachers are able to recognize creative behaviors in young children. If teachers are not able to recognize and encourage the development of creative behaviors, their students' creative abilities might be repressed or negatively expressed. This means that the expectation of having creative adults in society may go unfulfilled, and the goal of building an innovative global society might not be reached.

In the sixth section, the best ways to nurture children's creativity are examined. Some teachers, parents, and professionals who value creativity still need guidelines on how to pursue their goals of distinguishing and fostering creativity in their children. Suggestions and recommendations are presented regarding how to practice creativity with children.

And, to conclude, in the seventh section, this researcher proposes a theory resulting from this study's novel and comprehensive framework for understanding and working with creative children and adults as a continuum. This researcher presents a distinctive profile for understanding creativity from birth to adulthood.

The unique profile of creativity introduced in this projected theory will be a powerful vehicle to lead the reform that this researcher is calling for--educating for creativity instead of targeting only achievement as the end-goal of the learning process. Achievement is reached more successfully when it happens through creative processes rather than when it is pursued as an independent and final goal of the learning process, which may stifle creative products.

To provide a finer overview with more details of the subsections under each section, the first section discusses the relevant literature regarding our future needs for creativity. This section is divided into two subsections: education for creativity, and the benefits of creativity. This section reviews the role of education in preparing for the next century by building a resourceful society and implementing creative education. It also discusses the future benefits of creativity for three levels: the globe, the society, and the individual.

The second section discusses the relevant literature on assessing creativity in young children. Two subsections address the following focus areas: the need for assessing creativity in young children, and the benefits of assessing creativity in young children. This researcher believes that recognizing creative behaviors should be a goal of evaluating creativity in young children. This section also discusses the benefits of assessing creativity in young children from the perspective of the future benefits that will lead to an inventive society able to meet head-on the demands of the subsequent century.

Common myths about creativity will be examined in the third section. An awareness of the truth regarding these myths or misconceptions about creativity can lead to more successful nurturing and cultivating of creativity in society in general, and in schools specifically.

The fourth section, on creativity in young children, introduces six critical categories as subsections, each of which contributes uniquely to the rationale for this current study. These subsections address the characteristics of creative children; creative behaviors in young children; well-known creators and their experiences in their early childhood and youth; some of the common problems that most creative children face; differences in learning styles and how the brain works; and creativity in children and the gift of disabilities as simply differences in learning styles. Creativity in young children is discussed in more depth in order to help us

genuinely understand creativity in the early years of life--what creativity means, and how we should recognize, nurture, and appreciate it. The target for this study is to learn more profoundly about creative behaviors in young children as reported directly and indirectly in the relevant literature that has studied characteristics of creative children and manifestations of creativity in young children. Then, a closer look at creativity addresses the creative behaviors that have been manifested by famous creative persons in their early years of childhood. This section is a major source to help accurately identify descriptor behaviors that reflect and indicate creativity, and this section contributes greatly to the following subsection that examines the literature and the reports by creative children, youth, and adults regarding some of the common problems that they typically face when they decide to continue to be creative. Accordingly, this study shifts focus to investigate divergence in learning styles and how the brains of creative children might work differently, since in many cases they learn in different ways than is commonly expected from most children. Schools, even today, are still set up for those who learn in common or expected ways, but not for creative children who learn in dissimilar ways. Schools offer different types of stimulation and different presentations of information in order to meet differences in learning styles, but as evidenced by the literature, they still do not appreciate other unusual learning styles along with their associated character profiles and personality styles, nor do they consider all aspects of development. Additionally, there is major ignorance of the development of giftedness areas in children with special needs and/or with disabilities, especially if they have special needs related to language development, which influences negatively their performance on IQ and other cognitive tests that depend heavily on language use. As a result, these giftedness areas may not be reflected in their test results, and many creative children may fail these tests according to common measurements of achievement, which basically evaluate language. So in most cases,

creative children are not qualified to enjoy gifted education programs. So individual plans to nurture their giftedness are not designed, only plans to help them with their delayed or disability areas. These disabilities in most cases are found to be simply reflections of giftedness or divergence in learning styles, and not disabilities or handicaps. All of these issues will be discussed with more detail in the last subsection of the fourth section that focuses on the gift of disability.

The fifth section discusses teachers and the recognition of creative behaviors in young children. This section examines two critical issues in two subsections: how teachers perceive creativity in young children, as well as how teachers influence children's creativity. This researcher believes that there are two main areas of concern for teachers when it comes to recognizing children's creative abilities. Teachers need to examine their own perceptions and attitudes toward creativity and creative children, and they need to be aware of how greatly they can influence their students' creativity, positively or negatively.

To benefit from all of the presented information in relation to understanding creativity, section six presents suggestions and recommendations to give more practical views of how creativity can productively encouraged in school systems and other educational settings. This section addresses the best ways to nurture creativity in education and helps to simplify creativity implementations naturally in educational contexts. Simple and easy steps can be adopted when socializing or educating young children. This section demonstrates that educating for creativity is not an impossible goal, and that moreover it is the most enjoyable way of learning, living, and functioning as dynamic persons in global civilization.

Finally, the seventh section proposes a theory for a new effective framework for understanding and working with creative children and adults in light of this present research's

evidence. This profile provides a more accurate picture of creative children's and adults' abilities and personality styles, regarding how they think, learn, and perform. This theory is a new model that will greatly influence educational philosophies and practices, and even socializing procedures in homes, schools, and other social organizations including clinics, policy making organizations, outreach programs, career development, choices, and applications, etc. This innovative model will radically enhance educational goals, planning, curriculum design, teacher quality standards, instruction, and even assessment procedures, in addition to revising the role of administration and professional development in the school system. Furthermore, new considerations will be important when designing new remedial programs, therapy types, and child development interventions. This theory will enhance all types of services included in the education and practices of parents, teachers, and administrators, curriculum specialists, psychologists, therapists, evaluators, test designers, career planners, managers, media producers, care providers, or any other persons involved in services for children, youth, and adults including those with special needs and disabilities.

## **Assumptions**

While conducting this study, I am drawing upon certain assumptions about the study of creativity and education that current research demonstrates agreement upon.

1. Creativity is the future (e.g., Ugur, 2004; Pink, 2005).
2. All children are creative by nature (e.g., Torrance, 1962; Millar, 2002; Jalongo, 2003).
3. "Creativity is ageless" (e. g., Gardner, 1993; Millar, 2002).
4. Effective nurturing of children's creativity will encourage each child to express his or her fullest creative potential (e.g., Armstrong, 1998; Cropley, 2001).



5. Teachers are one of the main forces who significantly impact children's creativity (e.g., Torrance, 1962; Khatena, 2000).
6. Teachers' recognition of creative behaviors in young children is the basic step towards nurturing children's creativity for future development (e.g., Ferris, 1957).
7. Understanding some of the misconceptions that teachers believe regarding children's creative behaviors helps them correct their misperceptions or myths, leading to the increased recognition of children's creative behavior (e.g., de Bono, 1992; Starko, 2001).
8. Identifying and fostering creativity from the very early years in life will increase the likelihood of producing creative adults (e.g., Torrance, 1962; Gardner, 1993; Lynch & Harris, 2001; Starko, 2001; Millar, 2002; Goertzel, Goertzel, Goertzel, & Hansen, 2004).
9. Creativity is the hidden side or the other face of disabilities and special needs in most cases, and a disability can always be a gift (e.g., Hartman, 1996; Davis, 1997; Armstrong, 1997; West, 1997; Palladino, 1999; Webb, Amend, Webb, Goerss, Beljan, & Olenchak, 2005).
10. Achievement is not always the best indicator of creativity (Skromme, 1988; Sowell, 2001; Lovecky, 2004).

## **Definitions of Terms**

There are several terms used in this study in particular ways:

1. Creative children are children who may resist in order to continue to be creative.
2. Young children are children from age birth to 8.
3. Creative behaviors can be overt or observed. Creative behaviors can also be indicators, predictors, or precursors of creativity. They are the behaviors that may reflect or relate directly or indirectly to creativity.
4. The recognition of creative behaviors is defined as the ability to recognize certain behaviors as indicator behaviors of creativity or as manifestations of creativity.

## Overview of the Literature

In order to demonstrate the critical worth of creativity, the following section presents a discussion of the relevant literature focusing on the future needs for creativity in general and the needs for creativity in education specifically. First, the role of education is explored in terms of educating for creativity as a future need for our society. Second, the benefits of creativity are examined in terms of the actual and future needs as they might apply to the individual as well as to our global society.

## Futuristic Needs for Creativity

Pink (2005) declares the need for creativity in a new era of society:

We are entering a new age. It is an age animated by a different form of thinking and a new approach to life ----one that prizes aptitudes that I call “high concept” and “high touch.” High concept involves the capacity to detect patterns and opportunities, to create artistic and emotional beauty, to craft a satisfying narrative, and to combine seemingly unrelated ideas into something new. High touch involves the ability to empathize with others, to understand the subtleties of human interaction, to find joy in one’s self and to elicit it in others, and to stretch beyond the quotidian in pursuit of purpose and meaning. (p. 2-3)

In addition, Guilford notes (as cited in Parnes, Noller, & Biondi, 1977) that living in this world means having problems, and in order to solve these problems, an individual needs to be a creative thinker. Lynch and Harris (2001) have similarly observed that “creative thinking is not simply the business of Picassos and Edisons---it is operative in all lives as we adapt, cope, and live proactively in a complex world of challenges, problems, opportunities, and resources” (p. 3).

So the challenges that lie ahead for our society require a radical change in the education and skills needed to meet this distinguished future. As this study has discussed, creativity should be part of the targeted goals in preparing for the future, as well as part of the process. It should be

considered a sought-for humanistic skill. In order to prepare for the next era, Goswami (1999) believes that creativity should be considered an essential factor in the development of the whole society. In the same manner, Jeffrey and Craft (2001) deem that creativity should be valued for progress in several areas of society, including economic, social, and individual development. Especially with the world becoming more of a “global village” (Millar, 2002, p.6), society must adapt more creatively to the technological and social changes that are happening around the world.

Since the focus in the next century will change from material domains to human potentials including creativity, the process of preparing for the next century should start by figuring out how to build a creative society. In order to achieve that, our society must begin to recognize and value creative people much more than we do (Goswami, 1999). Cropley (2001) has made the following observation:

People who produce novelty in settings that are not open for it are likely to suffer various kinds of negative sanctions. The situation of such people is exacerbated because some traits associated with creativity may lead to disorganized even chaotic behaviour or to behaviour that is regarded as antisocial or arrogant (e.g. impulsiveness, lack of concern about social norms, lack of interest in making a good impression, tendency to lose themselves in their work). Cognitive characteristics such as making remote associations that are too remote for most observers worsen the situation. The result may be that the effectiveness of the novelty creative people produce is difficult for others to recognize. (p. 65-66)

According to this view, when we start thinking of constructing an inspired humanity, society should be welcoming and open to creativity in its members by highly recognizing their creative potentials, increasing the opportunities for individuals to fully express their creative potentials, fostering creativity beginning in life’s earliest years, and enhancing the development and expression of creativity through late adulthood. Society should value creativity more highly in all

contexts. In sum, creativity is the future and the future is creativity. How to pursue that? This is the key question that is answered in the following section.

## **Education for Creativity**

In order to meet the challenge in the new century of developing a creative society, children need to acquire creativity as a life skill so they can contribute effectively to the changing world (Craft, 2000). Here, education is key. According to Weiner (2000):

Education” originally meant “to lead or draw out,” and to the extent that our educational institutions do this, they foster curiosity, exploration, openness, and a reaching toward new horizons, all of which seem characteristic of creativity. Still, as we all know, some teachers and some schools lead students step by step toward a pre-established, fixed realm called “knowledge.” In that case, the teacher appears as the professor of the object of knowledge, as the authority who directs the student to a specific end. As a result, genuine exploration and creativity would be minimized. (p.229)

Weiner (2000) presents the conflict between educating for achievement and educating for creativity. And if we educate for both of them, which receives priority? What follows is the significant claim that this researcher stresses. If education continues to work towards the end of knowing, rather than the skill of inventing knowing, this provokes significant concerns.

Achievement skills are included in creativity skills, but by contrast, creativity skills are not necessarily included in achievement skills. Which is the most important to pursue for the future: the accumulation of knowledge (how much knowledge you have?) or skills in processing knowledge (how you will use the information you know to produce something new or to solve a problem to benefit the whole world?). Pink’s (2005) vision presents an answer to this question, explaining that today, the defining skills of the previous era--the “left brain” capabilities that powered the Information Age--are necessary but no longer sufficient. And the capabilities we

once disdained or thought frivolous--the “right brain” qualities of inventiveness, empathy, joyfulness, and meaning--increasingly will determine who flourishes and who flounders. For individuals, families, and organizations, professional success and personal fulfillment now require a whole new mind (Pink, 2005, p. 3). Representing a similar perspective, Cropley’s (2001) viewpoint is that “people need to be able to adjust to change that is both rapid and sweeping, both for their own well-being and for that of the societies in which they live. This means that education will need to foster flexibility, openness, ability to produce novelty, ability to tolerate uncertainty and similar properties—in other words, creativity” (p. 158).

These goals should be our future orientation for education. The most momentous questions now are as follows: Are schools ready yet to teach for creativity? In other words, are schools ready to teach for right brain capabilities as well as left brain capabilities, or is the emphasis still focused on achievement, which is mostly rooted in the left hemisphere of the brain. Is creativity already implemented in the body of education system, and is it included in all aspects of educational practice? Starko (2001) thinks that the learning process should be perceived as corresponding to the creative process. In addition, Jeffrey and Craft (2001) view creativity as coming to the forefront in education. These authors believe that, since the 1990s, studies about creativity have moved to include ordinary individuals within the educational framework.

Many other authors (Williams, 1983; West, 1997; Freed & Parsons, 1998; Palladino, 1999; Weiner, 2000; Golon, 2004; Silverman, 2002 & 2004; Pink, 2005) share similar responses to these previous questions. For example, West (1997) asserts that “we should be more concerned with results than with trying to get everyone to learn things in the same way, especially if we are more interested in creating new knowledge than in merely absorbing and

passing on old knowledge. In some cases, the conventional educational system may eliminate many of those who have the greatest high-level talents, especially when these talents are predominately visual rather than verbal” (p. 11).

In the same fashion, Freed and Parsons (1998) note that schools are still established to prepare left-brain learners, and are not yet equipped for right-brain learners. Emphasizing drills, reiterating information, order, and repetition are the most significant focuses in the educational system, rather than emphasizing critical thinking skills and creative problem solving.

Conforming to authority is another major focus, rather than teaching children to challenge authority. Producing sameness is still a major goal of the educational process. As a result, the outcome is to produce students who are not able to make connections among things or think creatively.

There is another serious problem with the educational system’s current approach: what about children who resist and insist on being creative, who are right-brain learners in most cases, and who may be non-verbal as well? What will these students do in the classroom if the teaching is not meaningful for them and does not meet their needs? What is their present situation? It includes boredom, problematic behaviors in the classroom, underachieving, mislabeling, maladjustment, psychological problems, and others. Then what about their expected future? This may include anti-social behaviors, crimes, violence, failure, and career loss, etc.

Palladino (1999) calls creative children, or according to the definition of this term in this study--children who have already established their creative resistance, as “The Edison-trait child,” and she believes that these children can be a benefit for the future. As she explains, “The Edison-trait child specializes in creating and inventing. It is fundamental to his nature. If these qualities are nurtured and allowed to flourish, when he becomes an adult, he will be a leader in

the emerging markets of the Information Age. He will become an inventor of economic reality” (p. 263).

Palladino (1999) powers her argument by clarifying how these children can be a true benefit for society, claiming that “The Edison-trait child has a gift for metaphoric thought and visual imagery. He sees a world of stories and pictures. The Edisonian who develops his communication skills fully is a persuasive and powerful force in the twenty-first-century workplace” (p. 266).

Furthermore, Palladino (1999) claims that “Edisonians have a powerful gift in their aptitude for visualization. With hard work and follow-through, they can create new realities inside and outside their own brains. They have the ability to see many possible futures, and to adapt themselves to the best ones for them” (p. 267).

So if we would like to create an ideal classroom that meets the creative needs of all children who are right-brained and left-brained learners, what should this classroom look like to meet diverse learning styles and to implement creative education philosophies and practices?

Freed and Parsons (1998) dream of the following setting:

a classroom designed for the gifted in which the teacher was a brilliant, right-brained educator. This is precisely the type of classroom that we need to encourage, in geometric proportions, as we enter the twenty-first century. We must find a vehicle to harness the strengths of these children, instead of labeling them learning disabled and harping on their weaknesses. These are the children who, because of their innovativeness, creativity, and holistic thinking skills, will lead us into the new millennium. (p. 75)

What about children who have disabilities and/or special needs? What can we do for them to benefit from their strengths and meet their needs by enhancing their creative development? Is education able yet to recognize their creativity and take it into consideration when designing their individual plans for special education? Or is the focus of education still

focused on these children's areas of need only, without looking to the role of their giftedness and strengths in enhancing their whole personality functioning in schooling and life?

West (1997) answers these questions by reporting the following:

Our educational system, in focusing on remediation of certain disabilities, may be dealing with only half a condition, and the least interesting half. Somehow, a way needs to be found to deal with a very broad range of skill levels to address both unusual abilities and special difficulties in the same individuals. With far more comprehensive forms of assessment, educational efforts could be focused on developing areas of unusual strength (even in less conventional areas), avoiding the common practices of either streaming students based on an average across a limited set of conventional indicators or placing them in remedial groups based almost exclusively on areas of unusual weakness. If the view set forth here is correct, the main emphasis should be on cultivating these individuals for their varied and unusual gifts and abilities rather than mainly remediating them for their special difficulties. (p. 41)

The history of creative persons offers powerful evidence of how many creators have been perceived in their early schooling experiences to be at the bottom of the class, or have been perceived as underachievers, mentally retarded, or developmentally delayed (e.g., Einstein, Edison, Picasso, Beethoven, Stravinsky, & others). These creative persons have been so viewed as young children because they just wanted to be themselves and not anyone else. Their performance was incredibly different from others' expectations, including parents, teachers, or peers. In many cases, parents or teachers forced them to conform, which made these young creators just resist by expressing their own personalities and creative selves. They were simply different in their thinking, feeling, and skills -- how they viewed themselves and others, or how they explored their environments and dreams. They had different minds, which lead them to learn differently than others. In many cases, their disabilities were expressions of maladjustments and were trials to express their creative behavior and their opposition to being just ordinary individuals, and instead demonstrate their strong will to persist in being creative.

As West (1997) claims,



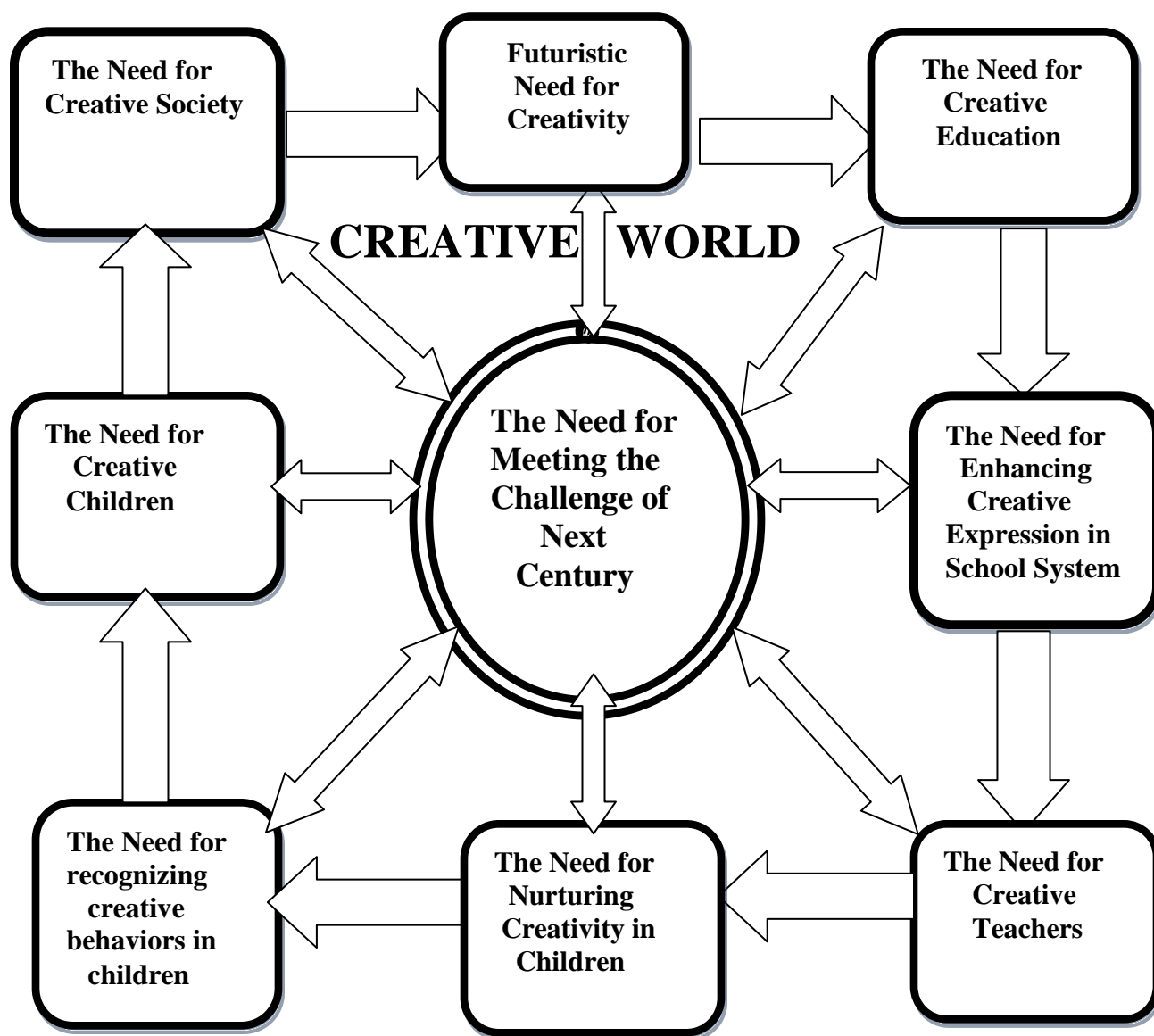
This is one big reason, perhaps, why we do not want everyone to be the same. Diversity can be seen as a deep survival strategy. We do not know when our “best and brightest” (our most certified and homogenized) are going to be very wrong. Sometimes the best and the brightest ----for all their smartness, quickness, vast knowledge, and long history of success----really have no idea of what is going wrong and what to do about it. Thus, we need to keep in mind the possibility that the solution to our problem lies with turning to someone who may be a bit unusual, a bit of an outsider, a bit unpredictable, someone who may not fit the traditional patterns of academic and career success. Sometimes the visual thinkers and “dyslexic visionaries” may see things that others do not see. They may be ready to take actions that others, in their pride and arrogance, are not ready to take. As individuals and as institutions, we need to be open to the idea that sometimes, to find our way in time of crisis, we will have to turn to someone who was at the bottom of the class. (p. 278)

In sum, education for creativity is the key to a creative future and an innovative world.

Education for creativity should target all learners, including the following: those who have disabilities or special needs; all learning styles; both brain sides; all age groups through the later years of life; all life experiences including daily life; all subjects of study; and all community contexts and services. Education for creativity should be inclusive, interdisciplinary, and intergenerational.

This researcher created the following figure (1) to summarize a model of education for creativity in connection to our world’s future needs:

**Figure 1. Model of Education for Creativity**



## **Benefits of Creativity**

Creativity is beneficial in many ways at different levels, including global, societal, and individual levels (e.g., de Bono, 1992; Craft, 2000; Jeffrey & Craft, 2001; Starko, 2001; Florida, 2002; Millar, 2002; Ugur, 2004). For example, at the global level, “creative accomplishments help to build a more interactive world that fortifies human civilization” (Ugur, 2004, p. 216). In addition, creativity has significant potential to reshape the world, for it is the way to progress, innovation, and problem solving (de Bono, 1992; Starko, 2001; Florida, 2002). At the societal level, creativity deepens social development (Craft, 2000). It empowers society to be more effective in dealing with the future through individuals acquiring creative problem-solving skills (de Bono, 1992; Millar, 2002), which results in significant benefits for the whole society (Jeffrey & Craft, 2001). Also, creativity helps society become better adjusted by encouraging its individuals to learn how to accept divergence in others, to understand each other more effectively, to perceive and appreciate others’ differences, and to value their contributions more, all of which benefits individuals as well as humanity through enhanced communication and acceptance (Millar, 2002).

At the individual level, creativity helps individuals reach personal fulfillment and creative expression by giving them personal meaning as well as opportunities to apply creativity to daily living and solving life problems (Shallcross, 1981, 1985; Florida, 2002; Ugur, 2004). Also, creativity can bring joy and happiness to people’s lives (de Bono, 1992; Starko, 2001) and help individuals cope with every day stresses, pressures, and traumas. For example, there are

relationships found between violence, mental breakdowns, tension in schools, and the repression of creativity (Torrance, 1962; Millar, 2002).

In addition, creativity changes individuals' views of life. It helps one perceive oneself in new ways, facilitates achieving one's maximum potential, and frees the expression of imprisoned abilities (Millar, 2000). Creativity has the power to motivate an individual and to give them hope in the disappointing moments of life by helping them to see new values in opportunities and things (de Bono, 1992). A creative approach to life is important to help individuals maintain sources of income and typical living standards, especially in the twenty-first century (Jeffrey & Craft, 2001).

Creativity is also very important even in the ways we collect and process knowledge. As de Bono (1992) explains: "Creativity plays an important role even in the collecting of information. The design of questions in an opinion poll may require creativity. Getting access to certain people or segments of the population may require creativity. When you know the information you want there is a need for creativity in order to see how to get that information and how to get it in the cheapest and most accurate way" (p. 29).

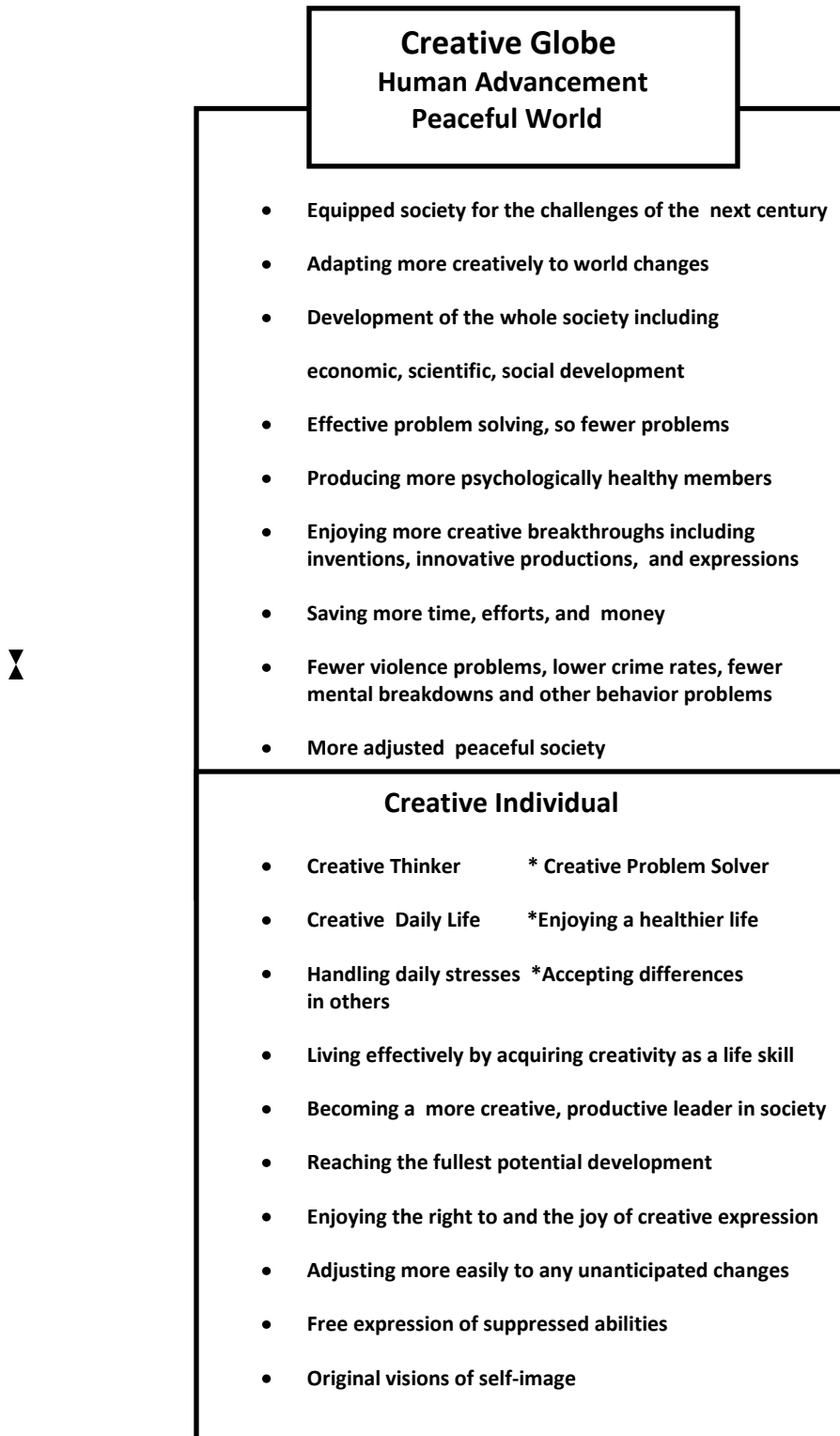
Furthermore, Millar (2002) has emphasized the benefits of creativity as "life long" (p. 6). He explains, "Creativity can contribute to physical well-being as we age". Cohen (2000), as cited in Millar (2002), states that "creative expression fosters positive feelings that prompt a positive outlook and sense of well-being" (p. 6).

As Millar (2002) affirms, "Science has shown that new growth can occur in individual brain cells if the individual is in a stimulating environment. Production of a chemical called acetylcholine occurs in the brain, which helps to improve memory and thinking functions. This brain growth can occur in individuals from their early 50s to late 70s" (p. 6). Millar (2002) gives

examples of famous creative persons in the world who produced their creative breakthroughs after the age of 59, ranging even in their early 90s. Examples include: Pablo Picasso (age 86 and his series of 347 etchings, *Suite 347*); Alfred Hitchcock (age 73 and directing *Frenzy*); Dr. Seuss (age 82 and authoring *You're Only Old Once*); Mahatma Ghandi (age 77 and successfully achieving India's independence agreement); Sigmund Freud (age 67 and publishing *The Ego and Id*); Daniel Defoe (age 59 and authoring *Robinson Crusoe*); and Antonio Stradivari (early 90s and creating two of his most renowned violins) (p. 7). So creativity is a very critical element in our lives, beginning at birth and continuing into late adulthood.

In summary, creativity should be highly valued since it is significantly beneficial for the world, society, and its members throughout their life spans. Creativity can have psychological, social, scientific, and economic benefits for humankind, society, and all individuals. The following figure (2) has been designed by this researcher to summarize these benefits of creativity at the three levels.

**Figure 2. Benefits of Creativity**



The future needs for creativity are important for the following reasons:

1. to live effectively and solve problems by becoming creative thinkers (e.g., Parnes et al., 1977)
2. to prepare for the challenge of the next century by enriching the whole society (e.g., Goswami, 1999)
3. for economic, social, and individual development (e.g., Jeffrey & Craft, 2001)
4. to adapt more creatively as society changes and to accept divergence in others (e.g., Millar, 2002; Pink, 2005)
5. to build an inventive humanity (e.g., Goswami, 1999)
6. to ensure children's involvement in the changing world of the future (e.g., Craft, 2000)
7. to provide powerful education for the future (e.g., Parnes et al., 1977; Goswami, 1999; Craft, 2000; Weiner, 2000; Jeffrey & Craft, 2001; Starko, 2001; Millar, 2002)
8. to enjoy the benefits of creativity (e.g., Torrance, 1962; Palladino, 1999; Silverman, 2004; Pink, 2005).

The discussion in the following paragraphs focuses on creativity within educational contexts and more specifically in the classroom, where there is the need for assessing creativity in young children. From this researcher's point of view, a significant aspect of effectively applying creativity in the classroom is the teacher's ability to recognize creative behaviors in young children. This is one of the most significant goals of assessing creativity as well as one of the most significant future needs for all: the globe, the society, and the individual.

## **The Need for Assessing Creativity in Young Children**

Many individuals feel that they are creative in certain moments of life. Some feel creative while playing music, some feel it while solving a problem, and others feel it while painting or drawing a picture. No matter what the context is for each individual, many people describe experiences of creativity as the most intense moments of living in their lives, even though not all individuals become Mozart, or Einstein, or Piaget (Goswami, 1999). Goswami wonders why many children seem to lose their creativity after early childhood and do not exhibit creative characteristics in adulthood.

As Ivcevic and Mayer (2007) note, a “creative life-style is interpreted to be the most elementary form of creativity; it is a general attribute of everyday behavior style and it does not require specialized training. This everyday behavior style is related to curiosity and exploratory behavior and is likely to develop in children who experience supportive parenting that encourages a sense of psychological freedom and safety ....Those that do not show such early creativity are not likely to develop other creativity” (p. 80).

This researcher strongly agrees with Ivcevic & Mayer (2007) that parents or any initial caregivers are the first and most significant influential adults, before even teachers in most cases, to affect children’s creativity. Home is the first social organization where children are born and receive early environmental stimulation and responses. Parents are the first ones who respond to children’s initial play, and they are the ones who decide the initial rules and/or limitations to this early play. So parents can influence early brain development on both the right and left sides. Which side becomes emphasized more than the other is usually determined by the early socialization practices children receive. If children are born in a home environment that is rich in stimulation and supports their freedom of expression and play, children will likely develop to



enjoy creativity and the taste of free exploration. This is a very strong reason why such children tend to become those who resist and decide to continue to be creative. They tend to be right-brainers, because this side of the brain is already developed more than the left side. In contrast, children may be born in an environment where such stimulation is limited and where creative responses are not welcomed, recognized, appreciated, or may even be suppressed. Such an environment can stifle their potential for creative expressions and force children to follow many rules and restrictions in their free or exploratory play. In these cases, children tend to be receptive to others' rules more than their own rules. The left side of their brains then develops more than the right side. They tend to be left-brainers and respond like a receptive machine to satisfy others' expectations and not their own goals. These different observed situations demonstrate why parents' attitudes, social and cultural expectations, and the tendency to promote or support early adaptive or late adaptive socialization significantly influence perceptions of creativity and societies' attitudes toward creativity.

As supported by research, Schore (2002) explains the process of young infants' and children's brain development:

in an optimal scenario the infant is an active co-participant in a relationship with an emotionally attuned primary caregiver who provides self-maintaining experiences, that is, one who expands opportunities for positive emotion and minimizes states of negative emotion. These experiences occur in affect attunement interactions embedded in infant-mother play interactions, as well as in comforting re-attunement transactions that occur after instances of stressful misattunement. Experiencing the joy of being the gleam in the parent's eye, and of having the secure feeling that one is under the watchful eye of the mother, even when she's not physically present, supports and nurtures the infant's burgeoning positive self esteem.

Over the course of the first year these same attachment experiences directly influence the growth of the infant's brain, especially the higher areas of the right brain that are involved in reading the emotional faces, voices, and gestures of other humans, in appraising bodily responses to such social stimuli, in regulating resultant emotional states, and in coping with internal and external stress. By the end of the second year, the cumulative attachment history with *both*

parents allows for a more complex right brain. This maturational advance now mediates an internal sense of security and resilience that comes from the intuitive knowledge that one can regulate the flows and shifts of one's emotional states either by one's own coping capacities or within a relationship with caring others. The outcome of a secure attachment is thus a reflection of the optimal development of the higher levels of the right brain, the locus of self functions. This developmental advance in right brain complexity is responsible for empathy, and therefore for that which makes an individual most 'human'. (Overview section, para. 4-5)

These study results are radical and should lead us to more highly value and revise our parental attitudes, care-giving, and rearing approaches toward our children. These results support this researcher's claim about how early socialization approaches can significantly influence producing creative children, or in other words children who have dominant right brains that strongly drive them to be creative and that also power them to resist in order to continue being creative. So early social interactions at home, at school, or through other social organizations not only shape not only children's personalities, psychological status, emotional and social relationships, cognitive performance, multiple intelligences, and creative behaviors; but these early social interactions, especially parenting interactions, have great power to physically shape the brain, as evidenced by Schore's (2002) study results.

Schore (2002) also reports that research has shown that the right side of the brain is dominant in infants and for the first three years of life. This side, as Schore explains, is focused on emotions and non-verbal communication.

Similar to Schore's view, Kotulak (1993) states:

Surprisingly, almost anything can cause physical changes in the brain: Sounds, sights, smells, touch--like little carpenters--all can quickly change the architecture of the brain, and sometimes they can turn into vandals. 'The new thing is that the brain is very dynamic,' said Dr. Robert Post, chief of the National Institute of Mental Health's Biological Psychiatry Branch. 'At any point in this process you have all these potentials for either good or bad stimulation to get in there and set the microstructure of the brain.'

Post and his colleagues were startled to find that outside stimulation can permanently alter the function of brain cell genes. Stress and drugs like cocaine, for instance, can produce biochemical changes that directly affect the function of some key brain-cell genes, in effect laying down permanent, maladaptive behavior patterns.

Faced with the new evidence about how the brain develops and functions, many scientists are concluding that society is wasting a tremendous amount of the brain power of its young, and creating a lot of unnecessary problems--including crime, aggression and depression--later on in their lives. (p. 1)

Along similar lines, another study conducted by Garren (1997) examined “The influence of parental attitudes toward childrearing and creativity in relation to children’s creative functioning” (p. 4180). Garren (1997) selected 26 children at the kindergarten level who had been reported by their teachers as creative children, according to creativity manifestations in their behaviors. Garren (1997) then interviewed the parents of these selected children. The findings of this study indicated that the parents of creative children highly valued the following areas: the influences of learning in the early years of life; their responsibilities of parenting, socializing their children, teaching them respect and other moral qualities; children’s rights to freely express themselves even if it leads to expressions of disagreement with them as parents; the significance of children’s free play, pretend play, story-telling, and music in nurturing children’s creativity; facilitating their cognitive, emotional, and social development, for instance by building self confidence, positive self-esteem, imagination and social skills; high levels of tolerance and freedom for children’s ideas and play; and the importance of play and creative activities as the foremost foundations for learning.

Many other researchers (e.g., Gardner, 1993; Sulloway, 1996; Palladino, 1999; Sowell, 2001; Golon, 2004; Davidson, Davidson, & Vanderkam, 2004; Goertzel, Goertzel, Goertzel, & Hansen, 2004; Webb, Amend, Webb, Goerss, Beljan, & Olenchak, 2005) have also emphasized the powerful influence of parents’ beliefs and practices on children’s creativity. Significant

results have been found by Lin (2001) when examining “parenting beliefs regarding young children perceived as having or not having inattention and/ or hyperactivity-impulsivity behaviors” (p. 975). Lin reports:

The study found that while parents/caregivers of young children perceived as not having inattention and/or hyperactivity-impulsivity behaviors were more aware of the importance of children’s early development, parents of young children having inattention and/or hyperactivity-impulsivity behaviors scored more negatively on parenting beliefs in the areas of creativity, frustration, control, play, and teaching/learning. The second result was that when two parent/caregiver families were compared to single parents/caregivers on measures of creativity, the single parents/caregivers encouraged their young children to guess more at answers and solutions to the problems. (p.975)

To summarize, children who experience creativity very early in life, through parents’ or any care provider’s support, tend to develop and grow as creative children. They may, however, suffer later from mislabeling and misdiagnosis, which most frequently happens to children and youth who turn to be different than others’ or society’s expectations or goals. These situations may be similar to the cases of over-diagnosing ADHD in a tremendous number of children in certain societies compared to others, for such children can be considered normal in other contexts and cultures.

As evidenced by Armstrong (1997) in his book, *The Myth of the A. D. D. Child: 50 Ways to Improve Your Child’s Behavior and Attention Span Without Drugs, Labels, or Coercion*, “Other cultures appear to have different expectations toward children’s behavior and attention levels. Children with A. D. D. behaviors in cultures with more relaxed behavioral standards may be considered entirely healthy” (p. 27). Also, Armstrong (1997) notes, “It appears as if the A.D.D. myth tacitly endorses the view that human beings function very much like *machines*. A.D.D., in this perspective, represents something very much like a mechanical breakdown. This

underlying belief shows up most clearly in the kinds of explanations that parents, teachers, and professionals give to children labeled A. D. D. about their problems” (p. 19).

Focusing more closely on classroom contexts and how teachers respond to children’s creative behaviors, Starko (2001) emphasizes that all efforts to nurture or develop creativity will end with failure unless teachers learn how to recognize creativity in their children. Starko (2001) believes that recognizing creativity in young children should be the goal of assessing creativity. This goal cannot be reached unless there is consistent agreement among professionals in the field of education, including teachers, regarding what is creative behavior and when it happens.

From Starko’s (2001) point of view, recognizing creativity in schools does not mean classifying children into “creative” and “non-creative” children (p. 378). Instead, recognizing creativity can guide teachers to create appropriate conditions for nurturing creativity in their classrooms. For example, recognizing creative behavior in children can help teachers provide a physical, mental, and emotional climate that enables students to be creative in the classroom. Also, it can guide teachers to become role models for creative behavior within a supportive climate, in order to stimulate creative behavior in children (Shallcross, 1981, 1985).

In addition, teachers need to recognize creative behaviors when children are young in order to reward these creative behaviors earlier, rather than waiting for creative products later. Rewarding creative behavior throughout the developmental learning process can lead to more positive results than simply rewarding creative products alone (de Bono, 1992).

Millar (2002) asserts that the early identification of creative abilities in young children is effective in helping them become creative adults in later life. Millar believes that the responsibilities for identifying creative behavior should not be limited to teachers, but should also include administrators, parents, and other professionals, in order to form a strong basis for

shaping creativity from early childhood through adulthood. According to Ivcevic and Mayer (2007), Cohen “defined creativity on a continuum of seven levels, from universal creativity characteristic of childhood to creativity that brings about revolutions in one or more domains of work. The developmental path from childhood creativity to mature forms of creative production is dependent on one’s social and educational experiences” (p. 82).

Accordingly, the power of early schooling experiences, as influenced by teachers, demonstrates how important is the need to assess children’s creativity, but how should this be approached?

West (1997) believes that “Perhaps we should be assessing children (and adults) not for ten or twelve skills in order to try to measure intelligence and ability, but rather for scores or hundreds of skills. Each skill might be considered separately, with the understanding that low ability in some areas might be an indicator of extraordinarily high abilities in other areas, perhaps not yet discovered because they are rarely measured” (p. 41). In such cases, assessing creativity in children and youth, as this researcher strongly supports, can protect them from being at risk of misdiagnosis, which adds to the need for assessing creativity early on. Taking a similar position, Webb, Amend, Webb, Goerss, Beljan, and Olenchak (2005), in their book: *Misdiagnosis and Dual Diagnoses of Gifted Children and Adults: ADHD, Bipolar, OCD, Asperger’s, Depression, and Other Disorders*, observe that many gifted children receive numerous diagnoses which in most cases does not apply to them, but are inaccurate and surely misleading. These authors explain this over-use of inaccurate labels for creative conditions: “the lack of knowledge among professionals results in common characteristics of giftedness being mistaken for one or more disorders. School counselors, teachers, and other professionals such as psychiatrists, psychologists, and pediatricians receive little training that allows them to distinguish between

behaviors that derive from giftedness as compared to behaviors that arise from diagnosable behavior disorders” (p. xxxiii).

In summary, the need for assessing creativity in young children is extremely important for many reasons. Some of these grounds include: inspiring creative children to become creative adults (e.g., Kotulak, 1993; Goswami, 1999; Schore, 2001; Millar, 2002; Ivcevic & Mayer, 2007); valuing efforts to enhance creativity in children (e.g., Garren, 1997; Lin, 2001; Starko, 2001); helping teachers to recognize children’s creative behaviors (e.g., Shallcross, 1981, 1985; Isaksen, Murdock, Firestien, & Treffinger, 1993; Starko, 2001); providing a basis for consistent judgment among professionals to define creative behavior (e.g., Starko, 2001); guiding teachers to set the appropriate conditions for nurturing creativity (e.g., Torrance, 1964; Shallcross, 1981, 1985; Sefton-Green & Sinker, 2000; Starko, 2001); giving teachers a valuable opportunity to know when creative behavior occurs so that they can reward it (e.g., Shallcross, 1981, 1985; de Bono, 1992); obtaining an accurate picture of children’s abilities, including their extra-ordinary ones which might be associated with a disability or special need (e.g., Armstrong, 1997; West, 1997; Lin, 2001); and protecting children from the risk of misdiagnosis, which represents one of the most serious problems that creative children face (e.g., Armstrong, 1997; West, 1997; Lin, 2001; Webb, Amend, Webb, Goerss, Beljan, & Olenchak, 2005).

In the next section, the benefits of assessing creativity in young children are discussed as having both direct and indirect benefits for children, both of which are critical to the discussion of creativity.

## **Benefits of Assessing Creativity in Young Children**

This researcher believes that assessing creativity can be beneficial not just for children, but also for teachers, parents, and other professionals. As a result, young children will enjoy the direct and indirect benefits as the outcome when teachers, parents, or others in the field of education develop enhanced creativity knowledge and practices.

Starting with the direct benefits for children, recognizing creativity will help children to understand themselves better. Children will be able to recognize their own strengths and judge correctly their unique behaviors as being creative and not problematic. This recognition will lead to positive results for children, such as being more motivated and better adjusted (Starko, 2001).

Concerning the indirect benefits for children, identifying creative behaviors represents the best way for professionals, including teachers, to choose specific programs that will best meet their special needs to guide young children. Also, measurements of creativity, including measurements that predict creative behaviors, will provide us with basic data that can be employed to reach the most accurate diagnoses of children's creative needs (West, 1997; Starko, 2001; Webb, Amend, Webb, Goerss, Beljan, and Olenchak, 2005; Eide & Eide, 2006). This process will help provide effective planning and evaluation for educational programs through pre- and post-program evaluation of children's creative potentials and expressions (Starko, 2001; Lovecky, 2004).

If teachers were to assess creativity, that in and of itself could provide a strong force towards changing attitudes toward creativity and creative individuals. Incorporating creativity into the teaching-learning process may influence teachers to change their attitudes in order to consider and value creative behavior. However, teachers who simply introduce creative activities



to their children, but are not themselves creative and do not understand creativity, may not get the expected positive results from their students (Millar, 2002).

In addition, this researcher believes that assessing creativity in young children could help to eliminate some of the stereotypical gendered perceptions that teachers and parents might have about children. For example, parents or teachers might perceive certain creative behaviors as only being associated with boys, while other behaviors might only be associated with girls. Consider the findings of Johnson and Lewman (as cited in Sankar-Deleeuw, 2002), who observed:

Gender stereotypic patterns of parents' perceptions of their children's (3 and 4-year-olds) abilities. Leisure activities were more frequently dance and fine art / motor skills for girls and convergent games and building for boys. Vocabulary was noted as outstanding for girls, while the boys' noted outstanding abilities were in abstraction, curiosity, and problem solving. (p. 174)

Stronger efforts to identify creativity can achieve the positive results of increasing the visibility of creativity and changing certain people's misperceptions of creativity as a mystery beyond our knowledge and understanding (Starko, 2001). The results of identifying creativity will lead to shared thinking and a common language about creativity among professionals, since there are currently many conflicts in the literature. For example, there are differences in terminology in the research, including varying definitions and types of creativity, such as artistic creativity and scientific creativity (Starko, 2001).

The recognition of creative behavior has significant value for helping students, parents, teachers, and other professionals distinguish between the myths and facts about creativity (Millar, 2002). Belief in these myths can interfere with efforts to promote creativity (de Bono, 1992).

In summary, assessing creativity has many direct and indirect benefits for young children. These benefits include: helping children to understand themselves better; guiding young children to specific programs that meet their special needs; effective planning and evaluation for educational programs (e.g., Torrance, 1984, 2000; West, 1997; Lovecky, 2004); reaching shared thinking and a common language about creativity among professionals (e.g., Starko, 2001); changing attitudes toward creativity and creative individuals, (e.g., de Bono, 1992; Millar, 2002); visualizing clearly the concept of creativity (e.g., Starko, 2001); helping to eliminate stereotypical perceptions, such as those related to gender (e.g., Sankar-Deleeuw, 2002); and distinguishing between the myths and facts about creativity (e.g., de Bono, 1992; Millar, 2002).

In the next section, common myths and misconceptions about creativity as well as truths and facts from such myths are examined.

### **Common Myths about Creativity**

Before proceeding with this discussion, it will be useful to identify and dispel some of the common myths regarding creativity. One common myth that many individuals still believe today is that creativity is a special gift enjoyed only by certain persons. The fact is that creativity is a part of every individual's uniqueness (Millar, 2002).

Millar (2002) notes that “‘Creativity! Me creative? No way!’ is a common response from many people. ‘I’ve not produced a great piece of art, composed music or writing, or fashioned a violin of the quality of Antonio Stradivari.’ That creativity is only for the gifted few is a myth that needs to be dispelled. The truth is that creativity is not just for geniuses. Creativity is for each of us individually” (p. 3).

Another myth is the belief that creativity cannot be taught. Those who believe in this myth think that creativity is a natural talent, and consequently believe that creativity is not teachable. However, the fact is that creativity can be taught as well as any other subject or content area such as mathematics, history, sports, music, etc. (Torrance & Torrance, 1973; Shallcross, 1981, 1985; de Bono, 1992).

Another common misconception is that creativity is messy. Many people still believe today that creativity is just confusion or disorganization which leads to no values or benefits. de Bono (1992) responds to this misconception by stating this fact: “At the simplest level “creative” means bringing into being something that was not there before. In a sense, “creating a mess” is an example of creativity. The mess was not here before and has been brought into being. Then we ascribe some value to the result, so the “new” thing must have a value” (p. 3).

Perceiving rebellious behavior to be the result of creative thinking can lead to the mistaken belief that creative thinking is always against something. This belief might lead teachers to teach only critical thinking skills and not teach creative processes (de Bono, 1992).

The tendency to not educate for creativity can also result if teachers believe the myth that creativity is related only to one side of the brain, such as the right brain and not the left brain. If teachers hold this perception, there can be consequences such as choosing right-brained-dominant students as appropriate for some duties and not for others (de Bono, 1992). This is one of the most crucial common misconceptions that negatively influence teachers’ and other professionals’ perceptions of children’s and youth’s abilities in relation to their school performance. Pink (2005) clarifies this myth by reporting the following:

As McManus puts it: However tempting it is to talk of right and left hemispheres in isolation, they are actually two half-brains, designed to work together as a smooth, single, integrated whole in one entire, complete brain. The left hemisphere knows how to handle logic and the right hemisphere knows about the

world. Put the two together and one gets a powerful thinking machine. Use either on its own and the result can be bizarre or absurd. (p. 25-26)

Pink (2005) also further emphasizes that “The two hemispheres of our brains do not operate as on-off switches---one powering down as soon as the other starts lighting up. Both halves play a role in nearly everything we do. ‘We can say that certain regions of the brain are more active than others when it comes to certain functions,’ explains one medical primer, ‘but we can not say those functions are confined to particular areas’” (p. 17).

The relationship between intelligence and creativity is another area of misperception about creativity. For example, according to this myth, teachers believe that you need to be a remarkably intelligent student in order to be creative (de Bono, 1992). In fact, however, some authors have found that above a certain level, intelligence can no longer be considered an indicator for creativity (de Bono, 1992; Craft, 2000; Naglieri & Kaufman, 2001; Starko, 2001). This level can be defined as a high IQ, such as above 120, when the relationship between intelligence and creativity is not strong any more (Naglieri & Kaufman, 2001). Others have found that creativity is independent of intelligence and should not be considered as a synonym for intelligence (Michalko, 2001; Runco, 2001; Ted & Carlene, 2005). Morgan (1990), through his study of 154 children at ages 3, 4, and 5 that examined the influence of intelligence as well as creativity on their performance on balance scale problems, found that there is a strong correlation between creativity and problem-solving cleverness, and that creativity was a stronger predictor than intelligence for problem-solving proficiency. Similar results have been reached by Levine (1983) when examining the relationship between creativity and intelligence in relation to problem-solving abilities in three-year old children; Levine’s study results also showed that there is no significant relationship between intelligence and problem solving.

Millar (2002) also shares these views, as the following explains:

Creativity is relatively independent of the concept of intelligence. Intelligence deals with a constellation of specific abilities; for example, arithmetic, vocabulary, block design, and picture arrangement in verbal and performance areas. All these component abilities deal with convergent thinking and do predict success, especially in a school environment. Creativity, however, is the production of something new or unusual via the process of sensing gaps, forming ideas or hypotheses, testing the hypotheses, and communicating the results. These abilities deal with divergent thinking and relate to success in careers and life. (p. 4)

Along similar lines, Eide & Eide (2006) report that “through the years, IQ tests have frequently been criticized for being better at identifying children who are likely to do well in school than at identifying those with outstanding creative potential. Even with regard to their ability to predict academic success, IQ tests are less than perfect. In fact, current intelligence tests can predict just 40 to 50 percent of a child’s school achievement” (p. 433).

Schulman (1991) supports this view with some historical examples:

a number of studies show that the most creative people are not necessarily the highest scorers on standard tests of intelligence--although they do generally score well above average. Moreover, some of the great achievers---Einstein, Van Gogh, Darwin, the physicist Erwin Schrodinger, among many others--were not recognized as exceptionally brilliant by their teachers, fellow students, or colleagues before their major achievements were established (regrettably, van Gogh’s genius was not recognized until after his death). If their contemporaries had taken a vote on who among them was most likely to make the major breakthroughs, none of these would have been chosen. (p. 286)

Other myths or misperceptions about creativity include the belief that all creative individuals are the best teachers of creativity, and that creativity is one of the following: just “releasing” or “freeing up” students (de Bono, 1992, pp. 35-36); restricted or limited to intuition; based on craziness; just “scatter-gun success” or comes through chance (de Bono, 1992, p. 37-39); group-oriented only, not an individual process; synonymous with art (de Bono, 1992); only a “big jump” process that produces a radical change or a new concept (de Bono, 1992, p. 40); or

only part of a few facets of life such as work that involve art, research, or technology (Smith & Carlsson, 1990). In fact, creativity extends beyond all of these beliefs. For example, it is more than feeling unrestrained or creating by chance or having a talent in art. Creativity is related to a process involving changing perceptions (de Bono, 1992, pp. 30-42). It includes all aspects of human activity and all life styles, including daily life (Smith & Carlsson, 1990), and it extends across all domains (Kaufman & Baer, 2005).

In summary, common myths about creativity include perceiving creativity as follows:

1. a special gift of certain individuals (Millar, 2002)
2. that it is messy (de Bono, 1992)
3. characteristic of rebellion (de Bono, 1992)
4. not teachable (e.g., Torrance & Torrance, 1973; Shallcross, 1981, 1985; de Bono, 1992)
5. related to only one side or hemisphere of the brain (e.g., de Bono, 1992; Pink, 2005)
6. just relaxing students (de Bono, 1992)
7. just an opportunity hunt (de Bono, 1992)
8. derived from madness (de Bono, 1992)
9. restricted to insight (de Bono, 1992)
10. only a group process (de Bono, 1992)
11. being synonymous with art (de Bono, 1992)
12. limited to a radical change (de Bono, 1992)
13. the belief that all creative individuals are the best teachers of creativity (de Bono, 1992)

14. part of only a few certain fields or domains in life (e.g., Smith & Carlsson, 1990; Kaufman & Baer, 2005)
15. that one needs to be exceptionally intelligent in order to be creative (e.g., de Bono, 1992; Craft, 2000; Michalko, 2001; Naglieri & Kaufman, 2001; Starko, 2001)

All of these myths about creativity are misleading for individuals in general, including parents and other members of society. These myths are also misleading specifically for professionals in the field of education, including teachers. Teachers' beliefs and perceptions about creativity and creative behaviors comprise a hidden force that influences how they teach in their classrooms and how they treat the creative behavior of young children when it is manifested.

In the following section, this researcher discusses some of the relevant literature that examines creativity in individuals generally, and in young children specifically.

## **Creativity in Young Children**

“What is creativity? I like to think of creativity as a form of energy seeking to express itself in all people. Others have called it an innate capacity for growth and empowerment. It is the energy that allows us to think a different thought and to express ourselves in a novel way” (Millar, 2002, p. 1). This section addresses some of the relevant literature on creativity in general, and specifically in young children.

What are the personality characteristics that are linked to the creativity of ingenious persons in general? Shallcross (1981) provides the following characteristics as commonly associated with creativity: “openness to experience; independence; self-confidence; willingness

to take risks; sense of humor or playfulness; enjoyment of experimentation; sensitivity; lack of feeling of being threatened; personal courage; unconventionality; flexibility; preference for complexity; goal orientation; internal control; originality; self-reliance; persistence; curiosity; vision; self-assertiveness; acceptance of disorder; motivation; and inclination to the off-beat” (pp.10-11).

In addition, Joubert (2001) reports that pursuing a purpose or being goal-directed is another manifestation of creative activity. Joubert classifies originality (one of the common manifestations of creativity) into three different types: historic originality (being distinctive in comparison to others in a particular area of interest or field throughout history), relative originality (being distinctive in comparison to the age group or peers), and individual originality (being distinctive in comparison to the individual’s past or previous work).

What about creativity and its manifestations in adults also relates to young children’s creativity? Is creativity reflected and expressed in the same ways in children as in adults? Do we have enough knowledge and effective practices yet to excellently and entirely develop children’s creativity?

Feldhusen, in Lynch and Harris (2001), claims that “Developing children’s creative abilities and motivations is a complex task that is still poorly understood and guided mostly by guesses and assumptions” (p. 3). As a result, knowledge about how creativity is manifested in young children is still limited (Starko, 2001). For example, Sankar-Deleeuw (2002), Lovecky (2004), and Webb, Amend, Webb, Goerss, Beljan, & Olenchak (2005) suggest that non-intellectual characteristics have not been paid the same attention in the literature as has been devoted to academic and intellectual characteristics.



This researcher believes that this lack of attention to the non-intellectual characteristics of creativity is one of the most momentous and widespread problems that negatively influences teachers', parents', and other adults' abilities to recognize creativity in young children and meet their creative needs, especially for those needs that fall under emotional and social needs. Most of the focus in creativity research and its applications in education or other contexts has been on the intellectual characteristics connected to creativity, such as imagination, diverse thinking, logical thinking, problem solving, and other cognitive skills. But by contrast, other non-intellectual characteristics related to creativity such as social, emotional, psychomotor, or physical factors, etc., have not received sufficient research and elaboration. This lack of attention absolutely influences the perceptions and practices of creativity. However, research has shown that these non-intellectual characteristics have the power to influence children's or adults' creativity as much as or perhaps more than intellectual traits. Such non-intellectual traits can distinguish inventive persons from others who may have a high IQ, but have not created anything or produced a breakthrough.

Piirto (2000) describes some examples of these non-intellectual characteristics: androgyny; imagination; insight; intuition; openness, or a sense of naiveté; over-excitability, also called OES; passion for work in a domain; perceptiveness; perfectionism; persistence; resilience; risk-taking; self-discipline; self-efficacy; tolerance for ambiguity; and volition, or will (p. 23). Moreover, Piirto (2000) asserts that "This list is by no means discrete or complete, but indicates that this work has converged to show that effective adults may have achieved effectiveness by force of personality or that talented adults who achieve success possess many of these attributes. These form the foundation. Parts of these attributes may be innate, but other parts can also be developed" (p. 23).

On the subject of the relationship between creativity in adults and in children, Keegan (1996) asserts the following: “Creativity from childhood to adulthood: A difference of degree and not of kind” (p. 57). Keegan (1996) believes that “organization of knowledge”, “having purposes” and motivation to reach goals, and having “enterprises”, “passion”, and “perseverance” are characteristics that we often see in children and in creative adults. Keegan (1996) also adds that the major difference between the creative child and the creative adult is the “expert knowledge” (p. 63). And this difference is just in the level of knowledge and not the type.

On the other hand, Starko (2001) believes that identifying manifestations of creativity in adults does not mean for certain that the same manifestations will be present in young children. Starko states that “Although none of these studies assures that characteristics of creative children and creative adults are the same or that creative adults necessarily had the same traits when they were children; the patterns are consistent enough to suggest that the characteristics discussed may well emerge in childhood” (p. 113).

Lynch and Harris (2001) have noted that some characteristics of creativity observed in adults are in fact applicable or present in children. Examples of these characteristics are high levels of anxiety, positive self-esteem, freedom of choice, social acceptance, rebelliousness, a tolerance for ambiguity, a preference for challenge, intrinsic motivation, and risk-taking behaviors, since these are important factors for creative expression (pp. xxiv-xxvi). Furthermore, Goswami (1999) notes Freud’s belief that there is a relationship between children’s imagination and adult creativity. This relationship is represented by the presence of continued childhood play and daydreaming in adulthood.

Fantasy play as a manifestation of children's creativity provides children with the opportunity to control situations that they cannot control in reality (Olszewski-Kubilius, 2000). Jeffrey and Craft (2001) remark that play is an important early childhood activity that contributes significantly to the development of creative adults. These authors view play as not just physical activity, but also mental play, such as playing with information or ideas. More evidence about the connection between children's imaginative play and its influence on adult's creative expressions can be found in Rollema's (1987) study of imaginary play companions and their influences on the following development in young adults. Most of the young adults, studied as college students, who had imaginary childhood companions perceived that influence as helping them later with their creativity, self-expression, and social skills such as the capacity for creating close relationships with others.

Additionally, research results by Daniels (1995), from a study of mental images in relation to art and science in high school students with exceptional abilities, also demonstrate the connection between creativity in children and adults. This study found that students with higher levels of creativity differed from others with lower levels of creativity when describing images in their journals in terms of a higher number of images, increased length, a greater level of details, and more colors. In addition, sound, pain, touch, problem-solving purposes and associations, interactions, and the inclusion or presentation of objects and people were present in their journals at a higher degree than in those of students with low levels of creativity. The overall imagery of high-level creative students was distinguished as very vivid and full of life metaphors.

Related research has been done by Daugherty (1991), who concluded that solving speech and coping/reinforcing speech as aspects of private speech in young children were significantly associated with high levels of creativity, especially coping and reinforcing speech, which was

found to be consistently related to higher creativity. These findings add more significance to the affective aspects of development and how they vitally influence levels of creativity and their important function in creative thinking.

Curiosity is another creativity characteristic that spans a continuum from the young child to the adult, as Ivcevic and Mayer (2007) explain in the following example:

a child who is curious and playful might become interested in understanding the natural world. The child can learn that science is able to answer many questions about nature. In high school or college, he or she can learn that by becoming a scientist one can continue asking questions and find new ways to answer them. In this way, childhood curiosity and playfulness can develop into a specific creative expression, in this case expressed in scholarly activity. Indeed, childhood imaginative activities similar to creative life-style (e.g., writing poems and reading) are antecedents of adult occupational creativity. (p. 80-82)

Furthermore, Sternberg (2000) views the ability to make creative decisions as a manifestation of creativity in children as well as in adults. Parnes (1967) also reports that fluency, flexibility, originality, elaboration, sensitivity, evaluative ability, a sense of humor, and playfulness are some of the significant traits of creative children. Parnes (1967) presents the following example:

We have all observed youngsters whose originality is boundless as well as, at times, reckless and dangerous. On the other hand we all know adults whose originality has been reduced to sterility. Somewhere between these two extremes is the truly creative person. Deferred judgment frees the adult from anxieties about his ideas, and thereby results in greater release of creative potential. In the relatively uninhibited child, this release is evidently more natural. The internal governor has not yet been fully established. (p. 61)

Starko (2001) also describes the shared characteristics of creative adults and children. Starko (2001) classifies these characteristics into two main categories: cognitive characteristics and personality characteristics. For cognitive characteristics, Starko (2001) reports: metaphorical thinking (finding new connections among unlike ideas); flexibility and skill in decision making;

independence in judgment; coping well with novelty; logical thinking skills; visualization; and finding order in chaos . For personality characteristics, Starko (2001) includes: willingness to take risks; persistence, drive, and commitment to task; curiosity; openness to experience; tolerance for ambiguity; broad interests; valuing originality; intuition and deep emotions; and being internally occupied or withdrawn (pp. 83-106).

Gardner (1993), in his famous study of the seven creators, Freud, Einstein, Picasso, Stravinsky, Eliot, Graham, and Ghandi, has observed that there is a strong link between the childlike mind and the advanced and mature mind in all the creators he examined, which was demonstrated in the creators' domain of creativity or breakthrough. Creators were amazed by early childhood in themselves and other children. They were also concerned about the child mind in relation to their domain. For example, Freud examined dreams and relationships in young children, and believed the basic, mature personality of adults to be rooted in the early years of life and experiences. Also, Einstein connected his strong curiosity in science to events in his early childhood. Even when looking at famous creative artists, we can see how they continued to study the products of young children, and their own creative productions as adults can be very similar to the productions of young children, as in the following examples: Picasso and his childlike scribbles and collages which were similar to those of a toddler, and Stravinsky and the childlike rhythms and repetitive tone clusters of singing which were similar to singing in nursery school. Eliot's work shows a very strong memory of images from the early years of life. Graham's creative work in movement is similar to physical experiences in early childhood. Even in the political domain, one can consider Gandhi's childlike appearance, personality traits, and values such as being honest, straightforward and meet head-on issues directly. Additionally, other personality characteristics or behaviors such as dreaming and telling jokes, as in the case of

Freud and dreaming, and in the case of Einstein and clowning, were similar to the characteristics of young children.

Gardner (1993) also powerfully claims that we should not only look to a creative childhood as a significant influence upon creative adulthood, but we should also consider the similarities between creative adults' and children's minds. Many creative adults were occupied with this type of thinking, as in the following examples. Charles-Pierre Baudelaire examined the relationship between children's drawings and adult artists' drawings, which he found clearly connected. Also, Einstein was very curious to understand children's minds. He is the one who advised Piaget to examine how children perceived speed and time. He was convinced that we know everything about physics that we need to, for life long, by age three. Einstein always believed as an adult that his thinking patterns were similar to those of children in terms of viewing things differently, questioning facts, and thinking about problems. Einstein always questioned things related to existence, such as "When did the universe begin? What is the smallest unit out of which everything is made? How do we determine time? Can we transcend space?" (p. 89).

Gardner (1993) made other significant observations from examining seven creators from early childhood to late adulthood, which this researcher also believes can have radical influences on our educational philosophies and practices, including early career development planning. Gardner (1993) monitored the characteristic of "rebellion against control" (p. 368) among the seven creators. Gardner (1993) also observed the "ten-rule pattern" (p. 396) when he examined the seven creators' breakthroughs in connection to their "shape of production". Gardner (1993) states that "As has already been well documented in studies of cognitive psychology, it takes about ten years for an individual to gain initial mastery of a domain. Should one begin at age

four, like Picasso, one can be a master by the teenage years; composers like Stravinsky and dancers like Graham, who did not begin their creative endeavors until later adolescence, did not hit their stride until their late twenties” (p. 370).

Gardner (1993) further explains that many creators enjoy a characteristic of “Mental Puzzlements, called Gedanken or ‘thought experiments’” (p. 104) which can be exemplified by Einstein for this case in point. This characteristic indicates the ability to visualize problems, experiment with them mentally, and retain these mental experiments in mind for a long time, even for several years. “Einstein was able to probe these examples much further and to think readily and *generatively* of numerous variations of his imagined spaceship or train or free-falling box. The ability to keep these invented spatial configurations in mind and to operate on them in diversely instructive ways played an indispensable role in Einstein’s original scientific thinking” (p. 104).

In a brief statement relating creativity in children to that in adults, Cropley (2001) notes that “Adult’s creativity combines subjectivity and objective elements and is thus enriched by their greater maturity and experience. This can be summarized by saying that children create for themselves, whereas adults create both for themselves and for the external world” (p. 91).

To sum up, in-depth examinations of creativity’s manifestations in young children and its connections to later adulthood are still limited in the literature, and this lack of knowledge negatively influences our abilities to fully nurture children’s creative potentials and effectively support their creative expressions (e.g., Feldhusen in Lynch & Harris, 2001; Starko, 2001). In general, the intellectual characteristics of creativity have been studied more intensely than the non-intellectual characteristics, as observed in creativity research (e.g., Sankar-Deleeuw; 2002). Many researchers (e.g., Parnes, 1967; Rollema, 1987; Daugherty, 1991; Gardner, 1993; Daniels,

1995; Goswami, 1999; Sternberg, 2000; Bloom & Gullotta, 2001; Cropley, 2001; Jeffrey & Craft, 2001; Lynch & Harris, 2001; Starko, 2001; Ivcevic & Mayer, 2007) have studied characteristics of creative adults in connection to creativity in early childhood. Research findings support the notion that there are many shared creative behavior manifestations between the creative child and the creative adult.

In the following section, the characteristics of creative children are discussed in more depth to enhance our understanding of the creative child's personality dynamics and how they influence their creative behavior, performance, learning outcomes, and perceptions by others.

### **Characteristics of Creative Children**

Creative children have many personality traits that distinguish them from others. For example, Lovecky (2004, p. 35) explains the characteristics of creative children that differentiate them from their age groups: they are non-conformists; they do things in their own way and on their own schedule; they are less involved with peers; and they may be accepted by their peers, or they may experience loneliness. They may be absorbed in their imagination; they may have unique learning styles; their engagement in school activities is based on whether they are relevant to their interests. They are the ones experimenting with the "what if...", and finding the answer to their own questions is their main concern; when they reach the answers, they sometimes find little interest in sharing with others. They may skip from one idea or activity to another. Novelty is the key for their interest and excitement, discovery is the key to their engagement, and their passion is key to pursuing their interests. They enjoy divergent thinking, and they have the ability to structure the big picture of ideas. They have distinguished problem-finding and -solving abilities. They are tolerant of ambiguity, they have very strong motivation,



and they are persistent in their areas of interest.

Presbury, Benson, Fitch, & Torrance (1990) have explained how some of these traits manifested in young children are misperceived by others in many cases. These authors state that “Personality traits which some creative children develop are often viewed by others as strange or unproductive” (Development section, para. 3). These authors discuss the following examples of common misunderstood characteristics, such as “free thinking”, which may be misperceived by others as unmanageable and disobedient behavior that is out of control. Others may not see the value of this type of mental play since from their points of view, the mental processes are not directed to any valuable goal. “Gullibility” is another misunderstood characteristic, for when children highly enjoy “half-baked”(Development section, para. 3.) ideas and manifest impulsivity, this may lead them to not recognizing the problems, disadvantages, or errors of their ideas as easily as adults can because of their maturity. “Humor” is yet another area for misunderstanding; most creative children enjoy finding the humorous aspects of any idea. While adults may look seriously to ideas, children look for humor, which may lead adults to view children’s ways of looking at things as disrespectful and unacceptable. “Daydreaming” is another area of concern, for most creative children daydream, and they are fond of it because they can mentally experiment with things, including impossible things. Also, through fantasy, children are able to create new connections among things unconnected in reality, which represents an effective way of solving problems. But at the same time, while children are daydreaming, they may be perceived as not paying attention, distracted, or mindless. “Aloneness” is another important trait that can be misunderstood. To produce creative thoughts derived from unshaped and formless ideas, children need to stay or play alone for a while, which is not encouraged by a society that puts pressure on children for togetherness. This pressure to be

consistently in others' company exposes children to difficulty in getting their unique ideas processed and come into view. "Doing nothing" and then "Activity" in a lot of cases can lead to creating something. Children may act slow or lazy while doing this "nothing thing," and then their brains discover a creative idea, and the child becomes more actively immersed in play or an activity. This instability and changeability from acting lazily and then being overactive and dedicated can be dissatisfying, puzzling and annoying to others (Presbury, Benson, Fitch, & Torrance, 1990, Development section, para. 3).

Also discussing misunderstandings of creative behavior, Starko (2001) and Csikszentmihalyi (1996) define ten characteristics that creative children manifest that can cause conflicts, uncertainty, and misunderstanding in others. These complex characteristics are as follows: manifesting a high level of energy and then being quiet and at rest frequently (children work with immense concentration and power for very long periods of time, and then need other times to relax, reproduce, and reflect); being smart at certain times and manifesting immaturity and inexperience at other times; being playful yet disciplined; being imaginative with nonetheless an entrenched good judgment of reality (equilibrium between the original and fantasy and the proper and suitable); being introverted at times and extroverted at others according to situations and contexts; being modest, yet on the other hand arrogant of their accomplishments and creative actions; manifesting both gender types and aspects of their personality (they demonstrate the least expression of gender stereotypes); expressing rebellion and being extremely independent even while being traditional; being fanatical and dedicated yet conversely expressing impartiality and fairness in their judgments and decisions; undergoing opposition yet getting pleasure from their innovative actions (p. 106-107). To describe further how creative children can embody conflicts or both extremes of some behaviors, Starko (2001) adds being "flexible yet

logical, risk taking yet committed to task, escaping entrenchment yet finding order in chaos” (p. 106).

To help better understand the instability and unpredictability of creative children’s personality dynamics, Elam (as cited Friedel, 1996) explains with further details the journey of the creative process in gifted children, in connection to the unpredictability and changeability in their emotions and behaviors:

In reality, gifted children are on their own individual time/energy cycles. They run full speed ahead then shift suddenly to full stop. There is little, if anything, between. When they are in full speed ahead there is NO stopping them. These kids can go for long bouts without food or sleep or life necessities. They thrive for months on their passion. They have tunnel vision. They seem possessed. They do not tolerate interference. Nothing else matters but the current project. Nothing. They are driven. Self-driven. And woe to anyone or anything that stands in their way. Then, without warning, they stop. Dead stop. Halt. They cannot be moved. Period. Just as suddenly, the child is running down a new road of wonder and discovery. There is no way to predict how long the new passion will last or where it will lead or what will be pushed aside in order to fulfill this new quest. (p. 249)

The value and power of passion and self-drive, as described by Elam, is a significant issue to be considered when looking at the creative child’s behavior. Such drive can explain the creative breakthroughs of many persons who were perceived as underachievers or as disabled. Goertzel, Goertzel, Goertzel, and Hansen (2004) strongly coincide with Elam’s views, and they note that “Special skills in oratory, a dogged persistence, a high tolerance for frustration, and social adaptation are the most frequently observed characteristics of the slow and average students who succeed in making themselves well known. A drive for power and attention can sometimes substitute for ability” (p. 256).

To explore further what goes on with creative children and why the ways they act or respond to things and situations so many times surprises us, Palladino (1999) notes, “These

children are intensely *divergent thinkers*. Their minds create sparks that ignite wildfires of thought. One single thought lights up many more. This causes them to be creative, innovative, and stimulating. At the same time, it makes it harder for them to think convergently. *Convergent thinking* is focus on a single flame, concentration on a solitary thought. It means resisting the impulse to burn or flare with irrelevant ideas and perceptions” (p. xi).

Palladino (1999) continues to discuss more specifically the difficulties that adults, including parents and teachers, face in socializing and raising creative children with such personality traits and behavior manifestations. Palladino (1999) explores this phenomenon in a “growing number of children today. They are conundrums, children with a profile that is both intriguing and maddening. These children are appealing, daring, and entertaining. Yet they are frustrating, demanding, and difficult to raise. Typically, they are strongly opinioned, so it’s hard to break through to them in ordinary ways. Their temperament and intellectual style may challenge even the most devoted parent’s patience, resolution, and stamina” (p. xi).

Palladino (1999) has dubbed these creative children as having the “Edison trait” (xi). She defines it as “an innate style of boundless, individualistic, divergent thinking”. Considering such children in the classroom context, Palladino (1999) believes that these creative children manifest the same personality profile as did Edison. They, like Edison, love adventures and they are unconventional and ingenious. They suffer from frustration and tenderness in their school experiences in many cases. They learn by doing and not by listening. They may know more about the equipment than the staff, such as about computers. They always ask questions, and they can create a story for every incident. They cause stress and pressure for others in many situations, particularly in the classroom and especially for their teachers. Some creative children are isolated in the classroom, while others require a lot of attention from their teachers. They are

always a source of surprise, astonishment, and stimulation to others. They are full of life, very alive, and distinguished with their high spirits and passion to do what they want to do. They are very strong-minded and determined children. In many cases, they are very creative in causing disturbances, which frustrates others a lot. They have an extraordinarily high level of energy. They are daydreamers, imaginative, artful, unique in thought, funny, and they have their own personal world where they create novelty all the time. They distract easily when they have assignments to perform, but they work intensively for a long time on their own interests.

Palladino (1999) has grouped creative children into three categories: “dreamers”, “discoverers, and “dynamos” (p. xiii). Dreamers often daydream as if “they live in the sky with their heads in the clouds” (p. xiii). Discoverers are the children who love to experiment first. Doing is an initial step before asking questions. They test the limits in rules, in the physical environment, and with others to see how far they can reach. In addition, they always do things in their own ways.

Dynamos are the ones with unexpectedly high energy levels. They are always on the move, and may be aggressive according to situations and contexts. They are very impulsive, and that is why they are often in trouble; they are fearless. “They like power and speed and a personal challenge” (p. xiii). In many cases, they ignore significant details; they are disorganized, not obedient, and do not care to follow directions in order to complete tasks. They have a global perception. They are risk takers, and they love exploration and change-seeking. They do not accept failures, they have wide interests, and they can handle many things at the same time.

Another important aspect of creativity to be considered when examining the characteristics of creative children is that creativity manifests in different degrees, even in young children. Torrance (1962) reports that highly creative children were found to exhibit the following traits as described by their teachers and peers: acceptance of themselves with a strong

self image, easy recall of early experiences, a high level of self-awareness, humor, active fantasy, unconventional responses, imaginative treatment, internal locus of evaluation, more independence, more emotionality and sensitivity, a high level of producing ideas, ideas that do not comply with standardized test protocols, playfulness, lack of rigidity, and wild or silly ideas (pp. 76-81).

In the literature on creativity, some researchers report the following to be characteristics of creative children: freedom of choice or greater openness to experience; superior communication skills; rebelliousness, manifested by questioning authority (e.g., Lynch & Harris, 2001; Starko, 2001; Webb, Amend, Webb, Goerss, Beljan, & Olenchak 2005); a preference for complexity and challenge; intrinsic motivation, as indicated by self-motivation and self-reward (e.g., Craft, 2000; Lynch & Harris, 2001; Starko, 2001); and tolerance for ambiguity, incompleteness, or disorder (e.g., Craft, 2000; Lynch & Harris, 2001; Starko, 2001).

Other researchers refer to social acceptance, represented by a strong aspiration for and enthusiasm to work for acknowledgment, as being a strong motivator for creative children (e.g., Lynch & Harris, 2001). In addition, creativity can result in risk-taking behaviors (in areas that are off-limits), and risks here are not limited to just physical risks but also include intellectual risks (e.g., Olszewski-Kubilius, 2000; Lynch & Harris, 2001; Starko, 2001).

Divergent thinking, the ability to think about a problem or issue in many different ways, is another characteristic of creativity in children reported by many researchers as well (e.g., Torrance, 1975; Goswami, 1999; Palladino, 1999; Craft, 2000). Runco (2001), however, makes the point that just as creativity is not synonymous with intelligence, neither is divergent thinking synonymous with creative thinking. Creative thinking may or may not involve divergent

thinking. Therefore, the best way to perceive divergent thinking is as a contributor to creative thinking and not as synonymous.

Curiosity, including making observations, asking questions, etc., is another manifestation of creativity in children, as reported in the literature (e.g., Parnes, 1967; Goswami, 1999; Starko, 2001; Craft, 2000; Brockman, 2004; Webb, Amend, Webb, Goerss, Beljan, & Olenchak, 2005). “Why” questions, specifically, are found to be a strong indicator for creativity in both children and in adults, best exemplified by the persistence of childlike questions (Starko, 2001).

Sensitivity, which the authors define to mean both viewing new meaning in things, along with problem-solving ability, is another characteristic of creativity that has commonly been reported, according to Parnes (1967), Shallcross (1981), Goswami (1999), and Webb, Amend, Webb, Goerss, Beljan, & Olenchak (2005). Unique interests, which Starko (2001) defines as having a variety of interests as well as focused interests, is another characteristic of creativity in young children.

Creativity can be noticed in a precise area in young children in their early years, as Starko (2001) reports. For example, Johnson and Hatch (as cited in Starko, 2001) studied creative behavior in four young children who exhibited high levels of originality. The authors concluded that these young children were all creative, although each child expressed his creative ability differently in a specific area that reflected his creativity focus.

Webb, Amend, Webb, Goerss, Beljan, & Olenchak (2005) emphasize the issue of gender characteristics in connection to unusual interests in creative children. These authors report that “gifted girls and gifted boys are, in general, more androgynous than the general population...The interests of gifted girls are typically much broader than typical girl, and the same can be said of gifted boys” (p. 188).

Along with the unique or non-traditional interests of creative children sometimes come problems, however. Sankar-Deleeuw (2002) notes that teachers who had young children with untraditional interests reported difficulty in successfully stimulating these children. This failure seemed to be related to the teachers' use of repetitive and unchallenging tasks.

Creative children also frequently exhibit a preference for solitude (e.g., Olszewski-Kublius, 2000; Starko, 2001) and enjoy being alone to practice their own favorite interests. This preference seems to be related to creative children feeling frustrated and bored when in the company of their peers (Sankar-Deleeuw, 2002). The authors believe that by being alone, these children might be more comfortable and enjoy their time more.

Researchers such as Belatedly, Dansky and Silverman, and also Leibermann (as cited in Starko, 2001) report that playfulness and make-believe activities were observed in pre-school children who were characterized as having higher levels of divergent thinking. In addition, Piirto (as cited in Starko, 2001, p. 112) states that playfulness is also represented in children's creative writing as playfulness with words. The use of visual imagery, figurative speech, and a sense of humor were found to be characteristic of young children's creative writing as well.

Andrews (as cited in Torrance, 1962) studied the creative activity of children aged two to six years old by observing their imaginative play. His observations described the following: "imitation, experimentation, transformation of objects, transformation of animals, acts of sympathy, dramatizations, imaginary play mates, fanciful explanations, fantastic stories, new uses of stories, construction, new games, extensions of language, appropriate quotations, leadership with a plan, and aesthetic appreciation" (p. 25).

Self-discipline is another characteristic of creative children that Shallcross (1981) notes, explaining that individuals who show a high level of creativity are also self-disciplined, using



themselves as a resource in much the same way they use information from outside resources, and while solving problems, they move back and forth from inside themselves to outside.

In sum, Torrance (1975) summarizes the characteristics of the creative child in his Ideal Pupil Checklist. Some of these characteristics include the following: being adventurous, being curious, having a questioning attitude, being sensitive, expressing their emotions strongly, having a guessing attitude, being independent, being insightful, being playful and childlike, having a good memory, being confident, being energetic, having a sense of humor and beauty, being idealistic, being risk takers, being thorough, not accepting things as they are, finding fault, and being preoccupied with difficult tasks (pp. 138-139).

Children enjoy many personality characteristics that reflect and manifest creativity. Considering and analyzing these creativity traits, especially in young children, will markedly improve the outcomes of the learning and socialization processes, which will help to meet the future needs of humanity. Such outcomes include: educational, social, scientific, psychological, economic, humanistic, and creative accomplishments.

Most creativity research has emphasized characteristics in children without a great deal of attention to detailed descriptions of these behaviors and how we can identify them in educational and social contexts, including homes, schools, clinics, and other settings. From the very scant literature on creativity in young children in comparison to adults, much research has often used the language of creative behaviors as synonymous with creativity characteristics. Some literature has examined historical cases of creative persons across the world, including stories about their early childhoods which can indicate directly or indirectly some of the behaviors that they may have adapted; but the remaining research studies on creativity in young children describe very few numbers of observable behaviors under these broader characteristics. This

current lack in the literature on creative behaviors in children makes it difficult for adults to understand the connection between creativity characteristics and creative behaviors. There are no realistic guides to help educators and parents recognize creativity in children from birth to the later years in life through authentic observation in the classroom and other settings instead of depending heavily on standardized creativity tests, which have many limitations. Standardized tests are not workable for children who refuse to cooperate and show their full abilities during testing time, or for children who have disabilities or special needs that prevent them from performing successfully. We all still need something very concrete to help identify creative processes and expressions rather than depending on very abstract conceptions of creativity.

All of these reasons support the significant need for this present research, which focuses on analyzing creativity characteristics to create a list of many items that represent observable behaviors in young children. In the next section, creative behaviors as descriptors and observable actions of children's creativity characteristics will be identified and analyzed in depth so teachers, parents, psychologists, therapists, and other professional can more easily recognize creative behaviors. If they can recognize creative behaviors, they can appreciate them, reward them, and support children's creative development through adulthood.

### **Creative behaviors in young children**

To draw our attention to the impact of recognizing creative behaviors in young children, Ferris (1957) asserts that "not only should we be able to pick out children who are the most creative now, but we should also be able to encourage the kinds of behaviors which go to make up creativity. In short, we should be able to encourage creative behavior in all children" (p. 93).

In agreement with Ferris (1957) that we need to recognize a broad range of creative behaviors in every child, Torrance (1965) notes that:

Of the many manifestations of creative thinking among children during the elementary school period, greatest attention has been given to creative writing and art. Thus investigators of creative behavior during the elementary years, like those who have investigated it in the earlier childhood years, have seriously limited the scope of their observations of the manifestations of creative thinking, thereby limiting the accumulation of knowledge about creative thinking in this period. Also, failure to accept certain types of socially undesirable behavior as indicative of creative potential has eliminated consideration of large areas of childhood behavior. (p. 29)

Yeany (2000) also explains the benefits of increased understanding: “The more we understand creative behaviors, the more able we are to apply them toward a better understanding of the same” (p. viii). Ferris (1957) stresses that behaviors which reflect creativity in children need to be described in a way that is observable and obvious. Ferris emphasizes that this range of creative behaviors should be considered as indicators, behavioral correlates, or behavioral aspects of children’s creativity.

Parnes (1967) defines creative behavior as “that which demonstrates both uniqueness and value in its product. (The product may be unique and valuable to a group or organization, to society as a whole, or merely to the individual himself)” (p. 6).

Some creativity research studies have examined descriptions of creativity in children and have highlighted some behaviors that indicate and manifest creativity. For example, Lovecky (2004) reports that creative children have imaginary playmates, create scenarios with their toys, play with ideas, and enjoy the creative process rather than product -- especially young children, who create because they love to create, not for expected social rewards. They take risks to experiment with their ideas and find out if they will work out, even if adults do not think they will. They have uncommon ideas which do not echo the status quo. They do not usually do what

others are doing because they do not see the value of following others simply to conform or obey. They follow their own interests, not others' interests; they value "marching to their own drummers" (p. 217). They shape novel wholes and new combinations among things or find new applications for traditional ideas, and they develop unique insights and conceptualizations of problems.

Silverman (2002) also reports that creative children are found to be the most disruptive children in the class; their teachers always complain that they are off-task, daydream, or act out. These children often complain about pain or being sick, such as having headaches or stomachaches, and they use their creative abilities for many tricks to avoid doing things, attending lessons, or finishing assigned tasks. They also become frustrated and upset very easily. Hilliard (1992) reports additional results in her study "Who's in School? Case Studies of highly creative adolescents", which chose five highly creative adolescents distinguished by their creative performance or products. Hilliard reports the following:

Six major findings were discovered. These students had rich imaginary inner mindscapes which they used to escape from an uncomfortable school environment and to create ideas. They needed more flexibility in the structure of their learning environment. They were not easy to identify because of a lack of awareness about their characteristics which often matched those of highly creative adults. They experienced a strong sense of isolation which was painful to them, yet the intensity of passion for their interest area was stronger. Often their creative spirits survived because of cocurricular activities or opportunities outside school. They all loved music. (p. 2110)

In sum, this researcher plans to identify descriptors of creative behavior in the present research study in order to examine creativity processes rather than products. Although Ferris made this statement in 1957, no study has been done (within the limitation of this researcher's knowledge) to examine teachers' recognition of creative behaviors in young children using this

descriptive behavioral concept of creativity, in connection to its significant value and serious contribution to future accomplishment. Therefore, this present research is an immediate response to a momentous need for developing descriptor behaviors to help teachers recognize children's creativity in their classrooms. Also, this researcher asserts that encouraging creative behaviors in children cannot be achieved unless teachers are first able to recognize creative behaviors in children as a targeted goal for our human advancement.

Current research studies on creative behavior manifestations are limited, especially in the study of creative behaviors in the early years of life. This researcher believes that deeply examining and analyzing the early childhoods of famous creative people, across history and the world, can provide us with unlimited resources for identifying creativity manifestations from birth to later in childhood, as is described in the following section.

### **Well known creators and their early childhood and youth**

In the following paragraphs, let's explore an overview of the childhoods and youths of some famous creators in order to examine more closely aspects of their early years in life. How did they play and what did they play with? What were their self images and perceptions of their own creativity? What were their dreams as children? And what were some of their school experiences, their strengths and disabilities, and their special needs? What are some of the common problems they faced as youngsters? What were some of their creative behaviors, how were they manifested, and how did others, especially teachers, perceive them?

It is still a common response when asking people what they think about Einstein, Edison, Leonardo, Picasso, or any other famous creative person's early childhood, to receive this initial viewpoint: Sure, they were the best students in their class; of course they were the ones who

always got the highest grades; they had been recognized very early in as gifted or creative children by their teachers and parents; they were the ones who listened very well to their parents' and teachers' directions and rules; they were the ones who enjoyed the most and learned effectively from their formal schooling experiences, etc. These are common answers, but let's discover to what extent these perceptions and responses are true in connection to the actual early childhoods of some creators who have been closely studied.

One of the most renowned inventors in history is Albert Einstein. Gardner (1993), in his book, *Creating Minds: An Anatomy of Creativity Seen Through the Lives of Freud, Einstein, Picasso, Stravinsky, Eliot, Graham, and Gandhi*, states that "Many legends have arisen about the childhood of the man who became emblematic of brilliance in this century. Einstein is variously described as a late speaker, a dyslexic, a loner, a prodigy, a poor student, and a diamond in the rough" (p. 90).

Einstein was observed to be a not very verbally expressive child; he showed high interest instead in the world of objects, was fascinated by collecting electrical equipment, and loved construction activities and play. He was able to build a giant, high house up to fourteen stories tall out of cards, and he loved puzzle activities and all moving objects with wheels. From his early years, as described by Gardner (1993), Einstein "marched to his own drummer" (p. 90), he always preferred to play alone, and he showed signs of great tantrums, such as throwing a chair at his tutor. His achievement level was low at school. He was very assertive in the areas or subjects where he was bright, and he showed a very strong arguing ability when it came to the subjects he strongly loved. But at the same time he was generally quiet and thoughtful. He was always busy with scientific and religious questions, and he had a burning interest to find answers to his questions. He showed a dislike for formal schooling, especially for any subject

area that necessitated rote learning. He was defiant and behaved badly, as reported by his teachers. He was a passionate learner only in some subjects that interested him and which he was able to pursue and devour on his own. He especially loved geometry, reasoning and physics. He was very playful and was also a daydreamer. In addition, there are some pictures of Einstein manifesting clowning behavior (Gardner, 1993).

Similarly, Goertzel, Goertzel, Goertzel, and Hansen (2004) note that Einstein had been thought to be dull and mentally slow by his teachers and parents. He had been perceived as shy, lonesome, introverted, unfriendly, and full of thoughtless dreams. Goertzel, Goertzel, Goertzel , and Hansen (2004) also report the Einstein played violin for hours, and that he was reading famous philosophers by age eleven or twelve. His speech was constantly hesitant, and he found difficulty in learning languages. These authors state that “Einstein disliked any artificial show of knowledge or learning of facts that cluttered the mind” (p. 262).

Additional facts about Einstein’s childhood further reveal his uniqueness and challenges:

Albert Einstein did not speak until the age of three. Even as an adult Einstein found that searching for words was laborious. He found school work, especially math, difficult and was unable to express himself in written language. He was thought to be simple minded (retarded), until it was realized that he was able to achieve by visualizing rather than by the use of language. His work on relativity, which revolutionized modern physics, was created in his spare time (Yellowstar.com, 2006, Proof positive that people can overcome their inabilities section, para. 4).

Furthermore, “Albert Einstein was a very late talker. At the dinner table one evening, he finally broke his long silence: ‘The soup is too hot,’ he complained. His parents, greatly relieved, asked him why he had never spoken before. ‘Because,’ he replied, ‘up to now everything has been in order.’” (David, n.d., Young Einstein section, para. 1). Einstein’s unique and challenging childhood has even become legendary to the point of exaggeration: “Though Einstein (whose teacher described him as a slow thinker and an antisocial daydreamer) was four years old before

he could speak and seven before he could read, according to the mathematical historian Otto Neugebauer, this story is apocryphal” (David, n.d., Young Einstein section, para. 2).

Einstein’s difficult childhood clearly worried his family. As West (1997) explains, “From Winteler-Einstein’s account, there is little doubt that a concern with Albert’s rate of development was a cause for real concern in the Einstein family. ‘Normal childhood development proceeded slowly, and he had such difficulty with language that those around him feared that he would never learn to speak....Every sentence he uttered, no matter how routine, he repeated to himself softly, moving his lips. This habit persisted until his seventh year’” (p. 119).

West (1997) also comments on the contradictory relationship between this unpredictable and unusual childhood profile of Einstein and his creative breakthrough later in life:

Einstein used the most sophisticated mathematics to develop his theories, but often his sums would not come out right. He was a daydreamer who played fancifully with images in his minds, but in the process he created an objective image of the universe that transformed forever our view of physical reality. Einstein had trouble learning and remembering facts, words, and texts, but he was teacher to the world. He was slow to speak, but in time, the world listened. (p. 129)

Other creative figures such as Sigmund Freud present quite a contrast. According to Gardner (1993), Freud was observed to be highly interested in the world of human beings. He enjoyed his schooling. He was a well-rounded child. He was distinguished by his great academic skills and high achievement level, and he was perceived as a talented child. He was at the top of his class. He enjoyed outside play and sports, such as walking, swimming, and skating. He was very social and engaged with many friends. Freud declared that his curiosity towards human anxieties and fears, rather than towards natural objects, was the powerful motivator that moved him. He was always a very ambitious child who set goals for himself. He always believed as a child and youth that he was a unique person who would accomplish revolutionary breakthroughs



through his life on earth. He was very self confident that he would create something, but his own concern was regarding what that would be, and in which domain? But at the same time, Freud did not do well in mathematics or physical sciences, and was not highly sensitive to music. He also thought sometimes or complained that he could have a better brain and a stronger memory. He expressed feeling lonely and not accepted. On some occasions, he felt that he spoke an uncommunicative language with others, and he stated: “I have resigned myself to living like someone who speaks a foreign language or like Humboldt’s parrot” (p. 63). However, Freud always loved telling jokes.

Other famous creators notably experienced struggles throughout their childhoods. Lyon (as cited in Friedel, 1996, p. 27) reports that Thomas Edison had been pulled out from school by his mother only three months after joining first grade because his teachers complained that he was not able to achieve. George Mendel failed an exam four times in a row and was not able to try again. Netwon was perceived as an unsuccessful student who had many weaknesses, especially in grammar--which was the same area of study that bored Einstein. Newton left the school at age fourteen and returned back when he was nineteen. At that time, he had become a very knowledgeable student who had read a lot. He was able to graduate from Cambridge. Winston Churchill was considered to be behind everyone else in his class in terms of school achievement. Charles Darwin failed and left medical school. Pierce Bryce Shelley was excluded from Oxford. James Whistler and Edgar Allen Poe were excluded from West Point. Gibbon did not enjoy his education and thought that he was wasting his time through formal schooling.

To return to Thomas Edison, in remembering his school experience, according to Goertzel, Goertzel, Goertzel, and Hansen (2004), Edison once stated: “I remember that I was

never able to get along at school. I was always at the foot of the class. I used to feel that the teachers did not sympathize with me and that my father thought I was stupid” (p. 257).

Even his early childhood displayed his different and creative tendencies, however. “Right from the start, Al, as young Edison was known, did things on impulse, out of the blue. As a toddler he turned up missing one day. He was found that night in a neighbor’s barn, asleep on a nest of eggs. Someone had told him that geese squat on eggs to make them hatch, and Al had to see this for himself” (Palladino, 1999, p. 193). Additionally, “As a child, Thomas Edison was a misfit in the classroom. His mind was constantly wandering and he couldn’t sit still in his seat. He required personalized instruction. He needed to learn in his own style and at his own pace. Only then could he get himself on track, and turn his wild ideas and mischief into brilliance and scientific discovery” (Palladino, 1999, xii).

Palladino (1999) also describes how his creativity interfered with his formal schooling: “His restless and fidgety seven-year-old mind often wandered. He could not sit still in his seat, even when the reverend struck him with a cane to get him to pay attention. Consequently, Al was at the bottom of his class. He hated school and lasted only until the first frost. He could not conform to his teachers’ expectations, a disability that today sounds a lot like ADD” (p. 193-194).

Palladino (1999) relays additional stories of his creativity:

at age ten, he tried an experiment that was not in Parker’s book. He wanted to see if a boy could rise in the air, the way a lighter-than-air balloon did. To test his theory he gave his friend Michael Oates huge doses of Seidlitz powders that, when mixed with water, bubbled up and gave off carbon dioxide. Of course Michael did not float like a balloon. He fell like a rock and suffered unbearable stomach pain. On another occasion, Al tried to generate static electricity by attaching wires to the tails of two cats and vigorously stroking their fur. What he generated instead were two maniacal cats. (p. 194)

West (1997) adds to these accounts: “Some sources indicate that in school he had trouble with rote learning, spelling, grammar, syntax, arithmetic, and overall classroom performance (‘always at the foot of the class’)” (p. 138).

Examples of other famous creative people show similar early problems with traditional schooling and expectations. Nikola Tesla had been noted (as Edison had been noted as well) as having great difficulty in drawing in his early years of life, and he was also accident-prone (West, 1997). But today, “he is regarded as the man who almost single-handedly developed the concept behind the electric power systems used throughout the world today. These include alternating current, great hydroelectric generators, simple and efficient motors, high-voltage transformers, and long-distance transmission lines” (West, 1997, p. 141).

George S. Patton, one of the most famous military leaders, was perceived as dyslexic and having attention deficit disorder. He was very impulsive, moody, and accident prone. He was slow in development, a late bloomer, and faced a lot of difficulties in school (West, 1997). Stravinsky always performed in school lower than average for his grade level. He disliked formal schooling and chose self-directed learning instead across his life. (Gardner, 1993). Pianist Sergei Rachmaninoff received low grades at the Conservatory at St. Petersburg, and his teacher communicated to his mother that her son was not performing well in school, so she dropped him from school (Goertzel, Goertzel, Goertzel, & Hansen, 2004). Picasso disliked school, he did not like to attend, and he did not perform well as a student, according to others’ perceptions. He had difficulty in reading, writing, learning numbers, and abstract thinking. He always perceived numbers as “visual patterns rather than symbols for quantities” (Gardner, 1993, p. 141). He was distracted by his own extraordinary perceptual abilities. He was recalled as having learning problems.

Goertzel, Goertzel, Goertzel, and Hansen (2004) believe that Picasso's failure in school refers to his resistance and insistence on doing just painting and nothing else. He was not able to learn to read or write. He always came to school late carrying his paint brush as a part of his body. He was not able to pay attention to his teacher, and he could not comprehend anything. He had been dropped from school when he was ten, and had been taught by a hired tutor who could not teach him and gave up trying. Even after his father sent him to Madrid, Pablo failed to study because he found the teachers had nothing to teach him.

Walt Disney is an additional exemplar of how an early burning interest in art was always a priority in childhood years instead of formal school work:

Walt lived out most of his childhood here. Walt had a very early interest in drawing, and art. When he was seven years old, he sold small sketches, and drawings to nearby neighbors. Instead of doing his school work Walt doodled pictures of animals, and nature. His knack for creating enduring art forms took shape when he talked his sister, Ruth, into helping him paint the side of the family's house with tar.

Close to the Disney family farm, there were Santa Fe Railroad tracks that crossed the countryside. Often Walt would put his ear against the tracks, to listen for approaching trains. Walt's uncle, Mike Martin, was a train engineer who worked the route between Fort Madison, Iowa, and Marceline. Walt later worked a summer job with the railroad, selling newspapers, popcorn, and sodas to travelers.

During his life Walt would often try to recapture the freedom he felt when aboard those trains, by building his own miniature train set. Then building a 1/8-scale backyard railroad, the *Carolwood Pacific* or Lilly Bell. (JustDisney.com, 2002, Walt Disney Biography section, para.6-8)

William Butler Yeats is another example of a famous creative who struggled with traditional learning. He was slow in learning to read, and he was considered to be dyslexic. He could not learn the alphabet when he was seven years old. He was perceived as being mentally deficient. He did not do well on examinations of achievement. He was always at the bottom of his class. He was disruptive in class, and he was very self-assertive. His worst performance was

in literature, and he hated history and how it was taught. Despite all of these early experiences and perceptions, he turned out to be one of the most famous and important poets of the Irish Literary Renaissance (West, 1997).

Stravinsky also exemplifies a troubled relation to formal schooling in his early childhood. He always performed lower than average for his grade level in school. He disliked formal schooling and chooses self directed learning instead across his life. (Gardner, 1993)

Another similar example is Leonardo da Vinci, who had been observed to be a non-verbal child who suffered from verbal difficulties. He learned better through observation and direct experiences rather than through traditional methods such as listening to lectures or books. According to West (1997), “In any case, Leonardo was clearly aware of his own language problems, declaring in one instance, ‘They will say that, being without letters, I cannot say properly what I want to treat of.’ In another case he made an effort to justify his mixed talents to others. ‘You should prefer a good scientist without literary abilities than a literate without scientific skills’” (p. 147).

Hein (2004), in investigating such struggles in Beethoven’s life, notes that he was very determined, stubborn, self-contained, and independent. He resisted learning information when subjects he refused to accept were presented. His internal energy drove and directed him. He did not pay attention to his teachers. He was weird and unusual from the viewpoint of others. He was grumpy, bad-tempered, and refused to conform.

Along similar lines, as reported by West (1997), Churchill was perceived as having difficulty in almost all subjects of study, and was always noted to be at the bottom of the class as well. He had difficulty in learning languages throughout his life. But at the same time, he was famous for his extraordinary memory. He was a late bloomer, and was considered to be a

dyslexic child, but when his language development was complete in later years, he excelled--his language skills, including fluency, were beyond expectations and common abilities. He always caused problems in school and was distinguished by his rebellious behaviors that reflected his frustration, anger, and hatred of school. He did not do well at school, and the worst cases were in exams, for he was disorganized and careless. He always loved to build models, however. He also had been observed to have changing moods and emotions, to be easily distracted, and to have difficulty in keeping time. He was not a good listener to others throughout his life, and at times, he was not an active speaker--he withdrew to himself in silent moments, enjoying listening to his inner monologue. He described himself as having giftedness and learning disabilities at the same time, as "at once backward and precocious" (West, 1997, p. 156). As West reports further, Churchill described himself as being stubborn and not able to learn if his imagination or interest were not occupied in the learning process. He had been observed to manifest childlike behaviors throughout his life. West (1997) affirms:

In Churchill, the survival of the childlike imagination and playfulness could come out at the most unexpected times. His 'fascination with martial manoeuvres was life long. At the height of the Battle of Britain, in September 1940, Churchill spent an afternoon crawling around the library floor at Blenheim Palace re-enacting Marlborough's victory with tin soldiers, imitating the bangs of the cannons and providing the smoke with puffs from his cigar.' The love of model building among many of those we have been considering took on an imperious cast in Churchill. (p. 158)

Additionally, Churchill always arranged his speeches beforehand and performed them before saying them in public. He always kept notes in the preparation process in case he forgot something in the moments of the actual speech. But as West (1997) comments, "The boy who spoke poorly, in time, came to deliver some of the most forceful and memorable speeches of his time. The boy who was disorganized, in time, became the man who was one of the foremost planners and leaders of an era. And the boy who was slow to develop in time advanced well

beyond all his peers, by pressing energetically forward long after most others would have passed the baton” (p. 165-166).

Other cases include Eliot: “From all reports, young Tom Eliot was an extremely sensitive child. According to his sister, Eliot, when he was still learning to talk, used to produce the rhythm of sentences without shaping words. He was entranced by sensory impressions--smells, noises, sights--and drawn to effigies, candles, and incense” (Gardner, 1993, p. 229). Eliot had difficulty with physics, was interested in science, but loved the humanities. He had a distinguished linguistic memory, and he loved jokes.

Woody Allen is also another illustration of creativity in connection to experiencing difficulties in school. He enjoyed writing funny stories about his teachers. He received a “D” grade in a class that taught film production. He used to leave school to go watch movies.

Ray Kroc disliked high school. He did not like algebra, he left school to be a sales man, and then he was able to create the McDonald’s franchise for which he is famous around the world (Goertzel, Goertzel, Goertzel & Hansen, 2004).

Another example of disliking school is Gandhi, who was not interested in schooling. He perceived himself as having fewer abilities than average and not being intelligent enough. From early childhood, however, he loved playing games, always took the role of peacemaker, and was always concerned about the right and the wrong. He always loved to be in charge of moral authority (Gardner, 1993).

Other patterns of creativity include Graham, who tended to lie a lot in her early childhood, which caused her many troubles. Her father taught her that he could know whether she lied from her body movement and positions, because “movement does not lie” (Gardner, 1993, p. 269). Her fathers’ point of view influenced Graham’s future creative expression in

dance. Her mother supported her interest in pretend play by creating a small theater for her at home while she was a young child.

In a general analysis of the most famous creators' early life experiences, Goertzel, Goertzel, Goertzel, and Hansen (2004) observe that many famous creative persons suffered speech problems in their early childhood. For example, "Emile Zola, Winston Churchill, Marcel Proust, and Robert Peary lisped. Somerset Maugham, Arnold Bennett, Aneurin Bevan, Thomas Wolfe, and Marc Chagall were stammerers" (p. 231).

Goertzel, Goertzel, Goertzel, and Hansen (2004) also report that many creators experienced academic failure in school, such as American writers Stephen Crane, Eugene O'Neill, William Faulkner, and F. Scott Fitzgerald. All of these authors failed because they did not like the content of the courses they were studying. The Beaux Arts refused to accept the French painter Cézanne when he tried to join it. Novelist Marcel Proust's work had been thought by his teachers to be disordered and not organized. Concerning novelist Hugh Walpole, no one was interested in reading his long novels when he was in school (p. 255-262). Moreover, "French novelist Emile Zola got a "0" in literature at the Lycee St. Louis in France" (p. 256). In addition, other creators were known to be stubborn and failed as well. These creators failed because "they will not scatter their energies seem especially important because it is often they who make the giant steps forward which change life significantly for the total population. These include Edison, the Wright Brothers, Henry Ford, and Einstein" (p. 256-257).

Additionally, Goertzel, Goertzel, Goertzel, and Hansen (2004) emphasize the importance of the free time or "Time-out" (p. 263) periods that creators enjoyed to pursue their own interests with no restrictions and far from formal schooling. They found that ten percent of the four hundred creative persons whose lives they examined reported time-out periods to have



significantly influence their creativity, including Winston Churchill, H. G. Wells, Matisse, Einstein, Havelock Ellis, Charles Evans Hughes, William Randolph Hearst, John La Farge, Richard Byrd, Norman Angell, Louis Brandies, and Poet Edna St. Vincent Millay.

Goertzel, Goertzel, Goertzel, and Hansen (2004) describe the most common aspect of traditional schooling that many creators disliked was the “examination” (p. 262-263). Many creators failed some exams, such as Einstein, Gertrude Stein, French writer and Nobel prize-winner Anatole France, great operatic composer Puccini, and bacteriologist Paul Ehrlich. When Einstein reflected on his feeling toward exams and how they stifled his creative thinking, he stated: “the constraint was so terrifying that after I passed the final examination I found myself unable to think of a scientific problem for almost a year” (p. 263). According to these authors, Einstein believed that examination was simply a “painful dulling of the memory” (p. 262). He believed that the traditional schooling years were years wasted from students’ lives to hammer information into their brains, even though such facts would be forgotten after only some months. So he advocated the exclusion of examinations from the school system.

Goertzel, Goertzel, Goertzel, and Hansen (2004) explain other ways that creative persons responded in their early years to their frustrations in schooling experiences. For instance, Edward Grieg used to play tricks so the teacher would send him home, such as standing on purpose under the rain spout so he would get sent home because he was wet. He used to work on his German melody for the piano in class so the teacher became upset and screamed at him. When the teacher discovered that his tricks were also in order to go home, Grieg resisted and continued to make up other tricks. Henry T. Fink reports that Edward Grieg reflected upon his disappointment with school and unpleasing experiences thus: “the only excuse I will make for myself is that school was in the last degree unsympathetic to me; its materialism, its coarseness, its coldness were so

abhorrent to my nature that I thought of the most incredible ways of escaping from it, if only for a short time....I have not the least doubt that school developed in me nothing but what was evil and left the good untouched” (Goertzel, Goertzel, Goertzel, and Hansen, 2004, p. 251).

Similarly, William Saroyan says: “I must remember also the peculiar smell of the school, and of every classroom; warm oil on the wood floor, chalk dust, desks, old books, paper, pencils, pencil shavings, ink, the teacher herself. The wretched smell of school. Every school has it. Emerson school had it bad....I resented school, but I never resented learning” (Goertzel, Goertzel, Goertzel, and Hansen, 2004, p. 251).

Some creators were perceived as having learning disabilities and special needs. As West (1997) explains:

Although neither Maxwell nor Faraday appeared to have had significant reading or writing difficulties, both exhibited traits that do fit within the broader definition of learning difficulties. Maxwell was known for an unusually lucid writing style. However, he was often surprisingly obscure when he had to speak suddenly, a particular pattern that is often observed in certain groups of children with learning disabilities. Maxwell also had difficulty with stuttering throughout his life. Faraday seems to have had some lesser difficulties with speech, but appears to have had major problems with mathematics and a poor memory. It is often assumed that his difficulties with mathematics were entirely due to his lack of appropriate education. However, there is evidence that his difficulties might have resulted from special problems with certain kinds of symbol systems. These difficulties, together with the positive traits associated with their usually vivid and creative visual imaginations, suggest a special role for Maxwell and Faraday among those we are considering. (p. 32)

West (1997) further notes about another famous creator that “Henri Poincare is acknowledged as one of the most extraordinary mathematical thinkers of the late nineteenth and early twentieth centuries” (p. 133). He manifested a mix of characteristics which was considered by many to be a mix of strengths and weaknesses at the same time. West (1997) states, “He was a logician who became famous for his fantasies. He was a photographer who could not remember

faces. He was a mathematician who had great difficulty remembering numbers” (p. 133). Henri Poincare was observed to have speech problems in his early years, representing the divergence between the speed of his thinking process and thought production, and the expression of these thoughts in speech. Also, his drawing and handwriting were not considered good in his early years, but only in his later years of life. He had a marked tendency to draw, especially, in boring moments like during oral exams. As West (1997) reports, “Poincare may have had great difficulty managing his body in space or portraying visual space with his pen, but he had no difficulty using his powerful visual-spatial imagination to conceive the most original mathematical relationships and the most subtle mathematical patterns” (p. 137).

Other creators showed unusual abilities early in their lives. As Goertzel, Goertzel, Goertzel, and Hansen (2004) illustrate, Prokofiev composed a galloping horse song at age five, and created “the giant” opera at age seven (p. 252-253). Yehudi Menuhin at age three and half start learning the violin, and when he became seven attended the Vienna conservatory. When Paderewski was at the age of three, he used one finger to pick out melodies, and he used all of his fingers when he became four. Sousa, at age eleven, created his first band. At age nine, Schweitzer played the organ. At age fifteen, Norman Angell became the editor of a newspaper. At age five, Steinmetz was able to do multiplication and division with fractions. At age fourteen, Marconi initiated his idea for a radio. At age fourteen, Reginald Fessenden was prepared to attend college. The founder of cybernetics, Norbert Wiener, received his doctorate at age eighteen. Sigmund Freud was at the top of his class for six years. While in elementary school, Enrico Fermi created a functioning electric motor. Marie Curie was advanced two years beyond her peers in all subjects of study, and she spoke three languages with equal ability as a child. J. Robert Oppenheimer, the developer of atom bomb, gave a scientific lecture at age eleven.

George Gissing, the novelist, at age ten started reading Shakespeare and Dickens. While in elementary school, Vera Brittain wrote novels. Arthur Koestler, the journalist and the author, at age ten, had a passion for physics and mathematics, and also had the ability to create mechanical toys and learn languages. Isadora Duncan at age seven initiated teaching others her innovative form of modern dance.

Dislike of routinized learning; opportunities for self-directed learning; sometimes home schooled or tutored; laboratory and computer facilities; and extra-curricular activities and clubs are significant keys that strongly influenced creative expression in most creators across history. These five factors have been found to be shared in the majority exemplars of creativity. (Goertzel, 2007, p. 29)

History has numerous accounts of how many well known inventors had invented or thought about their invention in their very early years of their lives. For example, Bellis (2007) narrates the following about Thomas Edison:

If I were to tell you that Thomas Alva Edison had shown signs of inventive genius at an early age, you probably would not be surprised. Mr. Edison achieved enormous fame with his lifelong contributions of volumes of inventive technology. He received the first of his 1,093 U.S. patents by age 22. In the book, *Fire of Genius*, Ernest Heyn reported on a remarkable resourceful young Edison, though some of his earliest tinkering clearly lacked merit. (Young inventors section, para. 1)

Bellis (2007) describes further details about Edison's development:

By the age of six, Thomas Edison's experiments with fire were said to have cost his father a barn. Soon after that, it is reported that young Edison tried to launch the first human balloon... Of course, the experiments brought quite unexpected results! Chemistry and electricity held great fascination for this child, Thomas Edison. By his early teens, he had designed and perfected his first real invention, an electrical cockroach control system. He glued parallel strips of tinfoil to a wall and wired the strips to the poles of a powerful battery, a deadly shock for the unsuspecting insect. As a dynamo of creativity, Mr. Edison stood as decidedly unique; but as a child with a curious, problem-solving nature, he was not alone. (Age six section, para. 1-4)

Bellis (2007) notes other inventors and the early ages of their inventions: “At age 14, one schoolboy invented a rotary brush device to remove husks from wheat in the flour mill run by his friend's father. The young inventor's name? Alexander Graham Bell (Age 14 section, para. 1). In an additional example, “at 16, another of our junior achievers saved pennies to buy materials for his chemistry experiments. While still a teenager, he set his mind on developing a commercially viable aluminum refining process. By age 25, Charles Hall received a patent on his revolutionary electrolytic process (Age 16 section, para. 1).

Further examples about of young inventors are as follows:

while only 19 years old, another imaginative young person designed and built his first helicopter. In the summer of 1909, it very nearly flew. Years later, Igor Sikorsky perfected his design and saw his early dreams change aviation history. Silorsky was inducted into the National Inventors Hall of Fame in 1987. There are more childhood problem-solvers that we can mention. Perhaps you’ve heard about: Samuel Colt's childhood experience with underwater explosives; Fourteen-year-old Robert Fulton's manually operated paddlewheel; and Guglielmo Marconi's early mechanical/electrical tinkering. Even television tinker, Philo T. Farnsworth, conceived his optical scanning idea at the tender age of 14. (Bellis, 2007, Age 19 section, para. 1-3)

The following list, from *The Great Idea Finder* web site, summarizes some very famous inventors and their inventions produced in their early childhood or youth:

### **A Class Act - Young Inventors**

- 1642      The mechanical adding machine was invented by a nineteen-year-old French boy named Blaise Pascal way back in the year 1642.
- 1648      Anton van Leeuwenhoek is best known for his work on the improvements of the microscope, in 1648 at the age of 16. He also contributed towards the establishment of microbiology in 1673.

- 1721 In 1721, Benjamin Franklin at the age of 15, was busily occupied in delivering newspapers by day and in composing articles for it at night. These articles, published anonymously, won wide notice and acclaim for their pithy observations on the current scene.
- 1824 When Louis Braille was 15 years old, he developed an ingenious system of reading and writing by means of raised dots. Today, in virtually every language throughout the world, Braille is the standard form of writing and reading used by blind people.
- At the age of 15, Cyrus Hall McCormick invented a lightweight cradle for carting harvested grain. Seven years later, in 1831 he invented the reaper, a horse drawn farm implement to cut small grain crops.
- 1830 Henry Bessemer produced his first invention at the age of seventeen--embossed stamps for use on title deeds. At that time, the British government was losing thousands of pounds in revenue each year through the illegal reuse of title stamps. Bessemer's invention made the crime impossible and earned him his first job.
- 1862 When he was 15 years old Thomas Alva Edison published a weekly newspaper, printing it in a freight car that also served as his laboratory. While working as a telegraph operator, he made his first important invention, a telegraphic repeating instrument.
- 1865 Since the age of 18, Alexander Graham Bell had been working on the idea of transmitting speech. While working on a multiple telegraph, he developed the basic ideas for the telephone.
- George Westinghouse, at age 19, obtained his first patent, for a rotary steam engine.
- 1873 At age 17, Chester Greenwood applied for a patent. For the next 60 years, Greenwood's factory made earmuffs. Greenwood went on to create more than 100 other inventions.
- 1921 Philo Farnsworth a 14-year-old had an idea while working on his father's Idaho farm. Philo realized an electron beam could scan a picture in horizontal lines, reproducing the image almost instantaneously. It would prove to be a critical breakthrough, towards electronic television.
- 1930 At 16 yrs. old, George Nissen finished high school and set out to develop a bouncing apparatus (trampoline). Working in his parents' garage using steel materials he found at a junkyard, he built a rectangular frame with a piece of canvas stretched across it. It was an instant hit Nissen was sure he could commercialize it.
- 1958 As a 17-year-old high school junior, Robert Heft found himself in need of a class project. His proposed 50 star American Flag idea was initially

turned down by the teacher. He went ahead and finished his project, receiving a B minus for his efforts. Heft's teacher compromised and promised to deliver a better classroom grade if he could get the U.S. Congress to accept his flag. The rest is history.

- 1972 Rebecca Schroeder from Toledo, Ohio, USA was ten when she became an inventor. Becky got a patent for her invention in 1974; she was on television and won awards for it. She improved upon the idea over the next few years eventually calling it the Glo-Sheet. The Glo-Sheet has been used in many places. Doctors use them so they can check patient's notes in the dark without waking them up and the US Navy and NASA have used them.
- 1993 One Saturday morning in 1993, when she was eight years old, Abigail M. Fleck and her father, Jonathan, were cooking bacon in their St. Paul, Minnesota home. Inspired by an offhand comment from her father,. Abbey Fleck invented a new, quicker and healthier way to cook bacon, then founded a company to sell her product, The Makin' Bacon®.
- 2000 "I called it a Batball because I can store my baseballs inside the bat and I like it. It's really cool." says Jacob Dunnack, age 8.
- 2005 Taylor Hernandez, age 10, invented "Magic Sponge Blocks," large building blocks made from sponge that can safely stack high without worry that they could fall and hurt a child.

(Vaunt Design Group, 2004, *The Great Idea Finder*, A Class Act – Young Inventors section).

By reviewing this summary, one can clearly observe the variety of ages when these creators processed and produced their inventions. This broad age range begins in the very early years of life. Most of these inventions would have been envisioned during play, or spare time, or during informal daily life activities.

In sum, many famous creative persons disliked formal schooling and were frustrated with their schooling experiences for many different reasons, including the following: unchallenging settings and feeling bored; pressure from teachers; assignments and rules; dissatisfaction with the contents of presented subjects; achievement standards; examinations; and grades. The majority of them created their breakthrough in their spare time when they were able to pursue their own

interests. Although most of them manifested areas of disabilities and special needs, they manifested at the same time extraordinary abilities and giftedness in other areas of development at a very early age. The recognition of these early creative expressions was supported by at least one parent, relative, or teacher. Those who had fewer negative schooling experiences are the ones who were verbally advantaged in their early years, so they may have suffered less in terms of meeting academic achievements and meeting others' expectations. Most of them, however, had also been misunderstood or misdiagnosed. Their giftedness was hidden behind disabilities in many situations. All of them manifested common creative behaviors, including positive and negative behaviors according to adults' judgments, but all these behaviors, both positive and negative, are related to and indicative of creativity. Negative behavior expressions were often manifested by most of these creators under pressure, as a response from maladjustment within the environment, and also as a way of expressing frustrations due to negative responses from others toward them, including peers, parents, teachers, and others. Negative responses were also expressed when the environment, either home, school, or any other context, failed to meet their creative needs, satisfy their expectations or benefit from their strengths and creative abilities. They also received negative responses when their disabilities were perceived as weaknesses and hindered the recognition of their giftedness. The accumulation of knowledge was not the key predictor for these inventors' extraordinary discoveries; rather, it was rather the motivation, curiosity, the burning interest, persistence, hard work, and other creativity skills. Many of these inventors had conceived their inventions as early as age six. Early recognition of their creative behaviors was the most significant influence that led their inspired inventions and breakthroughs. Certainly, analyzing the history of creators' childhoods and youths teaches us a great deal about creative behavior recognition, development, and expression.



The following section examines some of the obstacles that have been universally encountered during childhood by many creative persons throughout history, as well as by creative children today.

### **Some common problems most creative children face**

Famous creative persons, as well as creative children today, frequently suffer from many barriers during their creativity development processes, beginning at birth. In many cases these barriers create frustrating experiences that form long-lasting, painful memories. These difficulties, faced very early in life, can make creative children lose the enjoyment of a happy childhood and put them at high risk until late adulthood. In addition, these problems may lead to stifling their creative potentials and negatively influencing their creative expressions. These problems are the major reasons why not all children turn out to be creative adults, and even why they may turn out to be anti-social or psychologically ill adults with miserable lives.

### **Misdiagnosis and mislabeling creative children**

This researcher believes that mislabeling is one of the most significant and serious problems that creative children face. This problem can arise when children try to express their natural creativity, or when they choose to suppress it when their only choice is stifling their creativity upon finding no supporting environment for creative development. Creative children are always at risk of receiving many labels from psychologists, specialists, or professionals for conditions such as attention deficient disorder, auditory processing problems, dyslexia, autism spectrum disorders, or others. However, these labels most often are not truly applicable. Children

receive these labels because the behaviors they manifest in the classroom or other contexts are perceived by teachers or other adults as unusual or unexpected, or simply because these behaviors are similar to abnormal behaviors that belong to actual disorders. In fact, such behaviors in numerous cases are just the origins or expressions of creative potentials.

Expressions of creative abilities can be positive or negative, according to the level of the support in the environment and how adults react to these behavior expressions. If adults, including parents and teachers, are able to effectively recognize these behaviors as reflections of creativity, children will feel supported and their gifted areas will be reinforced, leading to more positive expressions of creativity. Examples of such behaviors include: asking many or unusual questions about certain topics; spending a long time working on projects on areas of interest; persisting in trial-and-error practice; difficulties in following rules and directions, etc. In contrast, if teachers and others are not able to recognize these creative behaviors when they are manifested, children tend to adopt behaviors that are negative expressions of creativity because they cannot find positive outlets to express their creative potentials. These negative behaviors include lying, cheating, aggressive behaviors, and other forms of problematic behaviors (see the Creative Behaviors in Young Children Checklist in last section of Chapter 1). Unfortunately, many teachers and psychologists usually regard many of these behaviors, even if they have their roots in creativity, as negative behaviors that need to be eliminated in the classroom or other social contexts. Teachers and others reach this judgment without examining deeply the roots of these behaviors in relation to creativity and without determining why these behaviors happen in certain contexts or under specific conditions. The lack of knowledge and experience regarding identifying creative behaviors is the one of leading factors influencing such inaccurate decisions about children's behavior in homes and schools.

As evidenced in their research, Webb, Amend, Webb, Goerss, Beljan, & Olenchak (2005) call our attention to this serious issue of mislabeling and its tremendous negative results, which these authors call “a modern tragedy.” As they explain:

Many of our brightest, most creative, most independent thinking children and adults are being incorrectly diagnosed as having behavioral, emotional, or mental disorders. They are then given medication and/ or counseling to change their way of being so that they will be more acceptable within the school, the family, or the neighborhood, or so that they will be more content with themselves and their situation. The tragedy for these mistakenly diagnosed children and adults is that they receive needless stigmatizing labels to harm their sense of self and result in treatment that is both unnecessary and even harmful to them, their families, and society. (p. xix)

For instance, one of the common labels creative children usually receive is AD/HD. According to Lovecky (2004), “Cramond (1994) noted that many of the characteristics associated with AD/HD are also associated with creativity, and wondered if creatively gifted children were being misdiagnosed with AD/HD” (p. 220).

This researcher believes that this example can also be extended to many other labels that creative children might receive, such as learning disabilities, dyslexia, developmental delays, auditory processing problems, autism spectrum disorders, and many others.

Along the same line, Sowell (2001) comments, “Before such terms as ‘hyperactive,’ ‘attention deficit disorder,’ or ‘autism’ were coined, such children were often considered to be simply mentally retarded. These include physicists Edward Teller and Albert Einstein, as well as famed nineteenth-century pianist Clara Schumann, all of whom were thought to be mentally subnormal when they were small children “(p. 16).

Eide and Eide (2006) explain this phenomenon of mislabeling further:

Labels matter because they don’t just express our thoughts, they can shape them as well, often without our realizing it. Labels can point us in the right direction or lead us astray. They can draw our eyes to truths we might otherwise have missed

or hide important facts we might otherwise have seen. Labels can affect how closely we look at a child and what we see when we do. Labels can even mislead us into viewing the label as the reality and the child as the abstraction, rather than the other way around. This is a tragedy. We must never mistake the label for the child. Even accurate labels tell only part of the story. That's why a label should never be used as a shorthand for a child's whole existence. Statements like "He's ADHD" or "She's Asperger's" leave far too much unsaid to convey a complete or accurate picture of a child. (p. 5-6)

Furthermore, Eide and Eide (2006) believe that even among children who receive the same label, there are remarkable divergences as a result of their diversity in strengths, weaknesses, personality styles, and life experiences. These great differences should be considered when considering the learning challenges and problems that these children face, and also when analyzing these children's behaviors and deciding the appropriate educational services and programming that meet their needs.

Webb, Amend, Webb, Goerss, Beljan, & Olenchak (2005) ask us to challenge our ideas that normal is always desirable: "We want our children and adults to be creative and to be good problem solvers. What we often forget, particularly with children, is that creativity involves being non-traditional and challenging the status quo" (p. 30). As these authors explain further:

When people are non-traditional, they must often pay a price because their creative behaviors make other people uncomfortable. Children who are non-traditional run the risk of being labeled as weird, troublemakers, noncompliant, and the like. They may fail to follow directions because they "know" that their way is better; they may take the proverbial road less traveled. Gifted children are often creative problem solvers who take great pride in doing things their own way.(p. 30)

Describing in depth how some children's behaviors, diagnoses, or classifications are strongly connected to creativity, Friedel (1996) stresses the following point:

Attitudes growing out of frustration have caused gifted children to be classified as delinquents and social maladjusted cases. There is need for careful systematic identification in all schools. Daydreaming on the part of a child, although

considered a symptom of maladjustment, is really a tension reducing mechanism. Likewise, aggressiveness, lying, and stealing are attempts to reduce tension. Furthermore, in so far as a study of children will help, it is far wiser to prevent problems from becoming acute than to introduce clinical aid and other external correctives into the educational program after the problem child has become a truant or delinquent. (p. 23)

Misdiagnosis should not be the only problem that we caution against, but the most important thing, as Lovecky (2004) recommends, is to find out in more depth what the signs are, how they influence the child and others, and what the best remediation programs are to meet the developmental and creative needs for a child to reach their maximum level of development and to fully express his or her creative potentials. The keys to accomplishing this goal are both considering the skills needed to be productive in society, as well as considering how to foster creativity. If either has been ignored, children will be at a very high risk. Children with special needs face a combination of the need to learn certain skills and the need to express, develop, or enhance their creativity. Ignoring creativity in remediation programs means for children “losing interest and motivation in learning” (p. 221).

Along similar lines, Palladino (1999) strongly asserts that mislabeling is very harmful to the child’s future and to the child’s family as well. Diagnosis should be used only with “significant impairment” as a legal requirement (p. xv). If no major or severe impairment or disability exists, diagnosis and labels should not be used. Palladino (1999) reports that among 20 % of children with the “Edison Trait” who receive the ADD label nowadays, only approximately 3-5% meet the criteria for ADD. She emphasizes that receiving the label of ADD has recently increased significantly.

To illustrate classroom situations in relation to the issue of mislabeling children’s behaviors, Golon (2004) describes the following scenario:

If either of my children was forced to show his work on every math problem, to follow it to completion according to someone else's rules and steps, he couldn't do it. He would soon give up in frustration, walk away from the assignment and convince himself he wasn't able to do math at all. Not only that, he would be labeled as inattentive or unable to complete the work. His frustration might earn him various diagnoses that were inaccurate and potentially harmful. (p. 10)

West (1997) summarizes these issues involving creative children's abilities:

In summary, while combinations of these traits vary widely from person to person, particular individuals may exhibit one or several of the following: difficulty with handwriting, a general lack of organization (although compensation may eventually result in extreme orderliness), indifference to schedules (a poorly developed sense of time), excessive daydreaming, difficulties with arithmetic (but sometimes not geometry, statistics, or higher mathematics), difficulty with speech (delayed speech development, hesitation, or, occasionally, stuttering), ineptness or lack of tact in social situations (but in some cases showing exceptional powers of social perceptiveness), poor coordination and lack of athletic ability (but in some cases having superior athletic abilities), special difficulty in memorizing assigned information by rote (but often having surprising powers of memory for selected types of information), difficulty with retaining certain kinds of data (such as the multiplication tables), difficulty with learning foreign languages, especially in classroom settings (but sometimes developing unusual facility with one's native language), being overactive, easily distracted, inattentive, and "in their own world"---in short, a whole complex of problems that can be paradoxical and apparently unrelated and usually seem inconsistent with the apparent high abilities and intelligence of the particular child or adult. (p. 17)

## **Feeling Neglected, Disliked, or Unrecognized**

Perceiving themselves to be neglected, disliked, or unrecognized is another common problem among creative children. Many researchers such as Friedel (1996) are highly concerned that creative children are still ignored or unrecognized in school systems. They often receive punishment for their abilities rather than rewards for their creativity. Creative children are usually disliked by their teachers for many reasons, the most common one being refusing to

attend class lessons. However, some of the most creative children or famous creative persons in the world left formal schooling, yet they were and are still able to be creative.

Torrance (1962) observes that “one of the most tragic plights I have witnessed among highly creative individuals stems from the failure of their parents to understand them. Frequently destructive or incapacitating hostility is the result of this failure” (p. 12). Furthermore, Torrance (1962) comments that “Parents may not appreciate the child’s passion for first hand observation. Persistent questioning can be very annoying. A mother of a three-year old complained, ‘He wears me out just asking questions. He won’t give up either, until he gets an answer; it’s just awful when he gets started on something!’” (p. 14).

Similarly, Webb, Amend, Webb, Goerss, Beljan, & Olenchak (2005), report the following situations:

One mother remarked, ‘Having a gifted child has not changed our family’s lifestyle; it has simply destroyed it!’ Another parent complained that she was tired of living with continual questioning and verbal challenges that made her feel like her child was a courtroom attorney, skilled at noting every loophole and every exception. With their intensity, keen powers of observation, and strong personalities, these children do have an incredible impact on the family, as well as on the classroom. (p. 175)

## **Asynchrony**

Lovecky (2004) reports that creative children experience “asynchrony” (p. 216) when they find difficulties in expressing their creative ideas. It happens that their creative ability to create new or original ideas can be more advanced than their ability to capture the ideas in their mind to put into action. This usually happens because they may not have the necessary skills to reflect upon or to apply what they know, such as critical thinking, reaching conclusions when you have contradictory or inconsistent information, or scientific skills to transform their

emotions and daydreams into a real model. Asynchrony may also occur if they do not have enough rich knowledge or information about how to put their creative ideas into application. All of these reasons lead creative children to experience frustration because of the difficulty of transforming their mental images into the material or the domain, because they still need the expertise to translate it.

Lovecky (2004) has explained that as wide as the gap between the ability to create a mental image and the ability to produce it as much as the original of the idea and the highest creativity level as it is most likely observed in children. In the early years of childhood, one can observe the most original ideas and creative thinkers, but the fewest products formed from these ideas. One comes to know about creative people and their creative productions in their adulthood, in most cases, because this is when they become able to produce what they have previously envisioned. Eide and Eide (2006) explain further the development of other aspects of personality such as the emotional and social ones in connection to experiencing asynchrony in children and problems in different ages:

Many gifted children experience social and emotional problems because their minds, emotions, and bodies are all maturing at widely different rates. This pattern of growth is sometimes called *developmental asynchrony*. For example, a six-year-old child may do math like a ten-year-old, read like a twelve-year-old, and know dinosaurs like a college paleontology major but still respond to his brother's "borrowing" his plastic brachiosaurus like a typical six-year-old. Other gifted children will have critical and analytical skills that exceed their judgment and restraint. Younger gifted children may have difficulty containing their outrage when their sense of fairness is violated. Older gifted children (and adults) may have difficulty controlling verbal retorts. The quick and cutting remark is a special skill (of dubious value) that often accompanies verbal giftedness and, if not controlled, may imperil relationships with peers and adults. (p. 447)

Torrance (1962) has similarly observed that "The highly creative child is likely to have lagged in some phase of his development. Many investigators in a variety of fields have been



disappointed in finding that outstanding individuals in the field under study are not well-rounded” (p. 109).

In sum, Webb, Amend, Webb, Goerss, Beljan, & Olenchak (2005) explain that “in concrete terms, asynchronous development means that gifted children---particularly those who are more highly gifted---will have substantial variations of abilities within themselves” (p. 25).

## **Refusal to learn or withdrawal**

According to Friedel’s (1996) report about Torrance’s views on problems faced by creative children,

When teachers or parents fail to understand highly creative individuals, refusal to learn or withdrawal may be a consequence. The highly creative person has an unusually strong urge to explore and to create. When he or she thinks up ideas, or tests them and modifies them, he or she has an unusually strong desire to communicate these ideas and to tell others what they have discovered. Yet both peers and teachers named some of the most creative students in our studies as ones who do not speak out their ideas; there is little wonder they are reluctant to communicate their ideas. Frequently, their ideas are so far ahead of those of their classmates and even their teachers that they have given up hopes for communicating. (p.22)

Also, Goertzel, Goertzel, Goertzel, and Hansen (2004) note that many creators were not happy with their schooling experiences or dropped their formal schooling early in life because they not satisfied with the curriculum, teachers, peers, or their own school performance. Many had accepted tutors more than classroom teachers. This may indicate the personal nature of relationships between a tutor and student and how they adjust their teaching strategies according to the level of the student.

## **Boredom**

Boredom is one the most common problems that creative children face in the school system or in any traditional or structured learning environment, as evidenced by research (Friedel, 1996; Gardner, 1993; Lovecky, 2004; Goertzel, Goertzel, Goertzel, & Hansen, 2004; Eide & Eide, 2006). For example, Friedel (1996) views boredom as the most significant and influential challenge for school authority and management. Children show and suffer from boredom when they are not interested in a subject or when a teacher presents the subject with an uninteresting teaching strategy. But Friedel (1996) believes that we need to pay attention to an important reality, which is that boredom in many cases happens when certain classroom practices are focused on other areas of interests, not on children's basic needs. By considering this point, we can see accurately how seriously boredom can contribute to discipline problems; boredom has been proven by research to be strongly connected to frustration. Too much frustration can lead to irritability and withdrawal, in addition to rebelliousness and aggressive denial of the entire situation.

## **Discipline Problems**

Lyon (in Friedel, 1996) states:

Just as a child of less-than-average mental ability frequently has trouble keeping up with his classmates, so a child of above-average ability has trouble staying behind with them. Prevented from moving ahead by the rigidity of normal school procedures, assigned to a class with others of the same age, expected to devote the same attention to the same textbooks, required to be present for the same number of hours in the same seat, the gifted youngster typically takes one of three tacks: (1) he conceals his ability, anxious not to embarrass others or draw their ridicule by superior performance; (2) he drifts into a state of lethargy and complete apathy; or (3) not understanding his frustration, he becomes a discipline problem. (p. 27)

Palladino (1999) demonstrates some examples of challenging behaviors that inspired children may manifest. For example, lying. Palladino (1999) believes that this is one of the most common problematic behaviors among creative children. Studies have found that creative children had to lie, from their point of view, in order to protect themselves from punishment or to avoid critique from others (p. xvii).

Palladino (1999) further portrays more challenging behaviors of creative children:

If your child is a Dynamo, you may feel drained and bedraggled. It's hard to keep up with a child who seldom pauses. You feel trapped, because you must watch him closely every minute. You don't want to take him shopping or even to visit friends: He touches everything he sees, and is especially drawn to breakables. You feel frazzled, nervous, and on the threshold of your tolerance. He does not sit still. He does not listen. He gravitates toward danger. You're giving 100 percent to try to discipline your child, yet you suspect other parents think you let him go wild. Stressed and overwhelmed, you long for quiet and solitude. You spend a lot of time wishing you were somewhere else. (p. xviii)

So according to these researchers, problematic behaviors are just reflections of suppressed creative energies or they are diverse expressions and representations of creative behaviors. From the children's viewpoint, these behaviors are just expressions of their creative nature, but from adults' viewpoint, these types of behaviors are problematic behaviors that need to be disciplined.

### **Short sleep or long sleep**

Parents usually expect that their children should go to sleep early and wake up early, as is the case with many children. However, sleeping patterns in creative children may differ from other children in many cases. Silverman (2002) states that "Visual-spatial children, however, often have a very different timetable. They may be wide awake at night and difficult to get up in the morning. They may go days on end with very little sleep--especially when they're excited or

in the middle of a creative project--and then crash for half a day” (p. 243). Silverman also reports that being “over or under-stimulated” (p. 243) is a reason why creative children cannot sleep as expected in a regular timetable.

This researcher believes this is a good explanation for what teachers might observe in the classroom: children who may fall asleep during activities, or even children who look to be tired or over-stimulated can be considered problems in school.

Silverman (2002) elaborates further on an issue related to creative children and sleep: “creative inspiration often strikes at night. It’s quieter then—internally as well as externally. The day belongs to the left hemisphere, and the night to the right. The right hemisphere is easier to access in the dark, when the left hemisphere stops working so hard” (p. 244). According to Silverman, regular sleeping timetables and habits are not always expected in the case of creative children.

## **Resiliency**

Being a resilient child is one of the most common characteristics among many creative persons, although this characteristic can be perceived as a problematic behavior or an unvalued aspect of personality. This un-recognition or undervaluing of resiliency as a critical personality characteristic will create a source of problems for creative children who try their best to overcome the difficulties they meet to reach their own goals, to continue their creative development, and to be protected from being at risk.

Many teachers and parents do not know the value of fostering resiliency in young children. According to Benard (2004):

We are all born with innate resiliency, with the capacity to develop the traits commonly found in resilient survivors: social competence (responsiveness, cultural flexibility, empathy, caring, communication skills, and a sense of humor); problem-solving (planning, help-seeking, critical and creative thinking); autonomy (sense of identity, self-efficacy, self-awareness, task-mastery, and adaptive distancing from negative messages and conditions); and a sense of purpose and belief in a bright future (goal direction, educational aspirations, optimism, faith, and spiritual connectedness). (para. 3)

Benard (2004) also asserts that:

Ultimately, resiliency research provides a mandate for social change -- it is a clarion call for creating these relationships and opportunities in all human systems throughout the lifespan. Changing the status quo in our society means changing paradigms, both personally and professionally, from risk to resilience, from control to participation, from problem-solving to positive development, from Eurocentrism to multi-culturalism, from seeing youth as problems to seeing them as resources, from institution-building to community-building, and so on. Personally, fostering resilience is an inside-out, deep structure process of changing our own belief systems to see resources and not problems in youth, their families, and their cultures. However, fostering resilience also requires working on the policy level for educational, social, and economic justice. (para. 9)

We hear interesting stories every day, across all times and places, about creative persons and how their powerful resiliency transformed a tragic life into a fortunate, happier life by means of a creative breakthrough. Two examples of these stories are presented by Bissonette (N. D.):

Patricia Billings, a professional artist, struggled with her plaster creations falling and crumbling, costing tremendous time and money. Instead of floundering in the face of the problem, she created an additive for the plaster that not only solved her problem but that of construction crews around the world. She created what became Geobon, an amazingly fire resistant, indestructible plaster that has become the ideal replacement for asbestos. Again, misfortune into fortune \$\$\$.

(para. 9)

Marion Brem's husband of 14 years left her and two young boys heavy in debt. Having worked only as a homemaker and a part-time receptionist at an automobile dealership, she knew nothing other than car dealers. She decided to sell cars, but as a divorced, Hispanic, mother of two, 16 dealerships slammed the

door in her face. She persisted, and the 17th dealership gave her the chance. She rose to 'Salesman of the Year.' But you haven't heard the best of it. Her husband ran out on her when she was fighting breast cancer. She had lost all her hair, was emaciated, and had huge debts, yet she bought a wig and knocked on doors of dealerships. Such power. Such resiliency. She now owns two successful dealerships, an ad agency, and considerable real estate holding with annual revenues of over \$48 million. Misfortune into real fortune. (para. 6-7)

## High Sensitivity

One of the most commonly observed behaviors in creative children is high sensitivity to their environment. Aron (2007) observes the strong connection between creativity and being highly sensitive. Also, she believes that this type of behavior is usually misperceived by parents and teachers as a problematic behavior or even mislabeled as ADD, without appreciating its value. Aron strongly believes that by providing appropriate recognition, support, and rewards, and by applying appropriate socialization approaches and behavior management, many creative children and youth can turn out to be very extraordinary, productive, attuned, and creative adults.

Regarding such high sensitivity, Aron (2007) explains the following points:

First, appreciate that this is a wonderful trait. It is no illness or syndrome. Nor is it something new I made up or "just discovered." It is an inborn temperament or style that is found in about twenty percent of children and of nearly all animals. Anything so persistent is not abnormal. It represents a strategy of taking everything into account before acting (the other, more common innate strategy is to act quickly and be first, then think later). The trait serves an important purpose for the individual sensitive person and for the larger society--for example, sensitive persons sense danger and see the consequences of an action before others do. Unfortunately, the trait has been somewhat misunderstood in our culture, so that most psychologists and parents tend to see only one aspect of some sensitive children and call this trait shyness, inhibitedness, fearfulness, fussiness, or "hyper" sensitivity. If one could see inside the mind of a sensitive child, however, one would learn the whole story of what is going on--creativity, intuition, surprising wisdom, empathy for others...

But, for all of that to blossom, they absolutely must be raised with

understanding. Otherwise, as adults they are prone to depression, anxiety, and shyness. (para. 1-3)

### **Difficulty with peer relationships and making or keeping friends**

Torrance (1962) observes that “Many highly creative children find quite early that the use of their creative talents alienates them from their friends” (p. 108). In strong agreement with Torrance, researchers Webb, Amend, Webb, Goerss, Beljan, & Olenchak (2005) report that “for gifted children, finding peers can be difficult. As preschoolers, gifted children quickly pass through the stage of parallel play into interactive play, and very often, they try to organize the other children into complex games that they have created. These new games have many rules and expectations to the rules, and the other children have great difficulty understanding them. Frustration for all usually follows, often with tears and hurt feelings” (p. 23).

These authors also observe that it can be a very maddening situation when gifted or creative children greatly surpass their peers in certain abilities. For example, a gifted child may be able to read large parts of books, while at the same time his/her peers have just started to learn how to figure out words. Or a gifted child may learn to skillfully play a game like chess, for example, yet at the same time, he or she finds that his or her peers do not yet know the basics such as the names or functions of each game piece. The results of such situations are that creative children may not find their peers sharing the same interests with them. The problem here becomes worse as a high level of giftedness or creativity in the child can put him or her further away from their peers groups.

So that is why Torrance makes the following observation, as noted by Webb, Amend, Webb, Goerss, Beljan, & Olenchak (2005): “Gifted children also try to find peers by seeking out

older playmates, or even adults; at least here the child can enjoy conversation and camaraderie. Adults usually discourage this, however, preferring that the child remain with age peers rather than “interest” peers. In the name of “peer friendships,” a bright child can be put in an untenable and very lonely position” (p. 23). Or, according to these authors, the consequences in such situations may be that creative children absorb themselves in books as a kind of search for joy or characters who share their interests.

### **Low Level of Achievement and Failure**

Academic failure and underachievement has happened to many creators, even though they had high intellectual abilities. Goertzel, Goertzel, Goertzel, and Hansen (2004) believe that there are reasons for failure beyond a person’s intellectual abilities. For example, creative people may choose certain areas of interest to focus on and may ignore other subject areas outside their interest area. Also, they may feel embarrassed due to others’ negative responses toward them or their work, including teachers or peers laughing at their unusual ideas or not recognizing their creative challenges. Also, their inventive thinking may upset their teachers. As a result, these creators may prefer not to participate or join others as a way to feel safer. In addition, creators may fail because they are not precise or careful, or not on time. Furthermore, they may be not interesting to others if they focus in their conversations only on the things that interest themselves, so others may view them as boring peers. Also, if they have an extraordinary look, others may view them as unintelligent. Some creators have also been characterized with other qualities such as hyperactivity, unfriendliness, introverted behaviors, or developmental delays such as speech delays. All of these reasons may lead others to perceive creators as dull and failing students in their school years.



Silverman (2002) agrees about the reasons that cause some children to underachieve. For example, if a child excels in science, this might not be extended to other academic areas because of how unique the subject is. Similarly, if a child becomes an expert in any subject area before age 8, for example, and yet still has difficulty in reading, they will not be accepted in gifted programs. Also, the affective aspects of creativity or giftedness such as interest and motivation are aptitudes which are considered very influential upon the performance of creative children, yet they are still not highly appreciated in the school system and can cause emotional and social problems that negatively influence children's achievement. Some children do not acquire enough study skills. Some children do not care about grades or what they indicate. For creative children, grades may not be essential.

In agreement with these views, Palladino (1999) also believes that grades are not the best measurement of creative children's achievement or performance, and that using grades to evaluate their learning outcomes puts them at high risk of being perceived as underachievers. "Criteria based grading" (p. 166) might be more helpful especially when both convergent and divergent thinking skills are considered in the evaluation criteria. Creative children also need to be provided with a clear expectation of each criterion.

Moreover, in examining the connection between academic success and career accomplishment for creative children, Palladino (1999) reports that: "Research findings suggest that success in the workplace does not correlate significantly with academic potential. It does, however, correlate with tacit knowledge, which covers a range of nonverbal, intuitive abilities and practical intelligence" (p. 253-254). According to Palladino (1999), "psychologist Joseph A. Horvath defines tacit knowledge as "action-oriented knowledge, acquired without direct help from others, that allows individuals to achieve goals they personally value" (p. 254).

Palladino (1999) continues thus:

because they are rich in tacit knowledge, Edison-trait children, when they grow up, may do considerably better at earning a living than they did at achieving grades in school. Their classroom world may not reward their independent style of thinking, but the business world often will.

After graduation, new horizons open to many young Edison-trait adults. If their motivation and self-esteem have remained intact, they can become astoundingly successful. (p. 254)

Demonstrating the challenges of holding creative children up to traditional academic standards in the classroom, Golon (2004) notes:

Visual-spatial students can often solve complex math equations accurately, but they may not always be able to show their work. For this, they are usually penalized and seldom recognized as academically talented. These kids excel in right-hemispheric strengths: art, geometry, thinking in multiple dimensions, music, creativity, empathy, design and invention, and the sheer joy of creating something wonderful out of the trash you nearly threw away. But these are talents that are often overlooked by teachers and parents in their pre-occupation with grades and academic achievement. Unfortunately, because most teachers and most classrooms are sequential in nature (teaching step-by step, details first, big picture last), children who learn in a manner compatible with that method, known as auditory-sequential learners, are often the only students recognized and rewarded for their academic performance. (p. 6)

Therefore, according to Freed & Parsons (1998), “Given the sorry state of our schools, it’s not surprising that home schooling is one of the fastest-growing movements in education today. An estimated 1.2 million children, more than 2 percent of the population, receive educational instruction at home, an almost *hundredfold* increase in the last two decades” (p. 200).

Silverman (2002) also believes that academic failure can be experienced by children even though they are creative or gifted. In many cases, there are things they can’t do, and other things they are creative or gifted in, but teachers and parents focus mainly on the things they can’t do, ignoring their giftedness areas even if they are enrolled in special programs to help with

disabilities. These children are who perceived as learning disabled can at the same time be gifted children. In the school system, however, they may be identified only as learning disabled. This situation puts such children at high risk because they are bright and creative, but do not get the opportunity to create and use their gifted abilities, so they may fail sadly in schools. However, one can observe these children's amazing creative abilities clearly at home or when they do something they are interested in, like practicing their hobbies. Feelings of failure are often experienced by such creative children because they are so sensitive and smart, they recognize their difficulties in school, which causes them to suffer a sense of inadequacy because feelings of academic failure can outshine the affirmative feelings they experience when they create and feel success.

But failure, however, has actually been identified by many researchers as one of the most significant resources for creativity and new discoveries. For example, West (1997) called it "The Success of Failure, The Failure of Success" (p. 190). Millar (2002) believes that "creativity is a continual process, 24 hours a day; failure is the mother of all creativity; to be creative, you have to be incredibly positive" (p. 8). Matson (n. d.) in his book, *The Art of Innovation: Using Intelligent Fast Failure*, explains, "We have been conditioned through much of our lives to view mistakes as negative outcomes. In school, mistakes meant lost points, lowered grades. In work, mistakes translate into fewer promotions, lower raises. We strive to emulate successful people to become successful ourselves. Successful people, however, are often judged without careful attention to the failures they encountered along the way" (p. vii). Matson (n. d.) elaborates, "If you want to be successful, the key is not to avoid risk, but to use risk as a tool and to uncover the lessons of each failure. In other words, the key is to manage your failures. What you don't want to experience is total failure, the kind that shuts you off from exploring the possibilities of the

situation and which limits your potential. Unmanaged failure is traumatic. It hurts the ego and bruises the self-esteem” (p. vii).

In discussing the failures that many creators experienced before or during their breakthroughs, Goertzel, Goertzel, Goertzel, and Hansen (2004) report that three-fifths from their sample study of 400 eminent creators around the world faced serious troubles and failure in school. From their point of view, when form was stressed rather than content, this explained why failure was experienced by such creators when they were students. They report strong evidence that when the type of schooling and teachers’ standards changed, these same creators experienced success even if the examinations or tests were much more difficult. For example, they report that French novelist Emile Zola received a “0” in literature and experienced success later when he found the right type of schooling. His case was similar to many other famous creators who failed in their formal schooling experiences, yet were be able to produce their breakthrough after changing schools or types of education, or even after dropping out of school (p.265).

Gardner (1993) also comments on the issue of failure and provides examples of how any person can regard the failure of Einstein in his early childhood, his youth, or even as a young adult. His journey went from academic failure to career failure, when he could not get an academic job at certain point in life because he could not finish his dissertation. Despite all of this, Einstein turned out to be one of the most famous creative persons because of his innovative and revolutionary thinking and his breakthroughs in physics and relativity theory.

Furthermore, Matson (n. d.) has observed that Einstein has a “failure resume” (p. 30). Like all other creative and successful persons. Matson believes that “the truth is that many

people who can fashion a highly successful resume can also fashion an equally dismal failure resume” (p. 30). Matson (n. d.) notes the following details about Einstein’s failures; he

dropped out of school at age 12 in danger of flunking out; worked as a patent examiner at the Swiss Patent Office in Bern; failed time after time to relate the universal properties of matter and energy into a single equation or formula; scientifically isolated because of his belief in an exactly engineered universe; son, Edward, claimed Einstein’s neglect caused his mental breakdown; failed to obtain respect of World Disarmament Conference; ideals of a world government rejected by every major statesman in the world; lived last years of his life in virtual isolation in Princeton, New Jersey. (p. 30)

According to these researchers, failure is one of the most critical factors that leads to creative actions. It can be a successful learning experience rather than a distressful experience. Most creative persons have been through a very long series of failure occasions before they reach their breakthrough. Failure is one of the most common problems that children suffer in formal schooling.

## **Frustration**

Frustration is another problematic experience usually involved in the creative process.

Golon (2004) believes the following:

Visual-spatial learners, those who are relying primarily on the right hemisphere of their brain, on the other hand, aren’t anything like their auditory-sequential counterparts. They have their own unique way of seeing the world, of inventing wonderful creations, of living entirely in the moment with no sense of time or deadlines, of seeing the whole, big, glorious picture----the forest as it were----despite the trees. They require a different set of tools to successfully communicate with them. If they don’t receive those accommodations, they can feel dumb in classroom situations, frustrated that their needs aren’t met at school or home, and unhappy about their uniqueness. (p. 55)

Vail (1987) explains further about the experience of frustration: “Anger, fear, self-doubt, frustration, and pressure are typical of the reactions that intensify when an intelligent student has

a school problem. Negative responses contaminate the classroom, invade the home, and squeeze the spirit and intelligence of smart kids. In their confusion, parents, teachers, and students themselves may be quick to lay blame” (preface).

### **High Anxiety Level**

“The creative child may operate under higher levels of anxiety and self-esteem than other children” (Lynch & Harris, 2001, p. xxiv). So anxiety, along with self-esteem, should be highly recognized as two of the most significant interactive elements of the creative process. A high level of anxiety represents two facets of influence on creative actions: the positive facet of influence that leads to creative products and enjoying success and a positive self image as a result, and the negative facet of influence that leads to failure. In many cases, excessive anxiety and fears about lacking support in the environment, including from adults, can cause frequent tension. This can result in a loss of control and attention, then experiencing failure in achieving goals or producing anything. Also, in this case, the person or the child will suffer from a negative self image and experiencing psychological or emotional disability that is not based on any physical disability. In this position, the consequences may be worse than having an actual mental or physical disability because the person is really able to create, but perceives himself or herself as not able to accomplish or produce anything. The creative energy and ability may be already there, but the outlet for expression is not yet there. This can be observed in many children, youth, and adults who chose to suppress their creative potentials, and as a result, their creative energies and unused abilities are channeled on a negative path toward destroying their self and/or others. These persons may suffer many breakdowns and behavioral disorders.

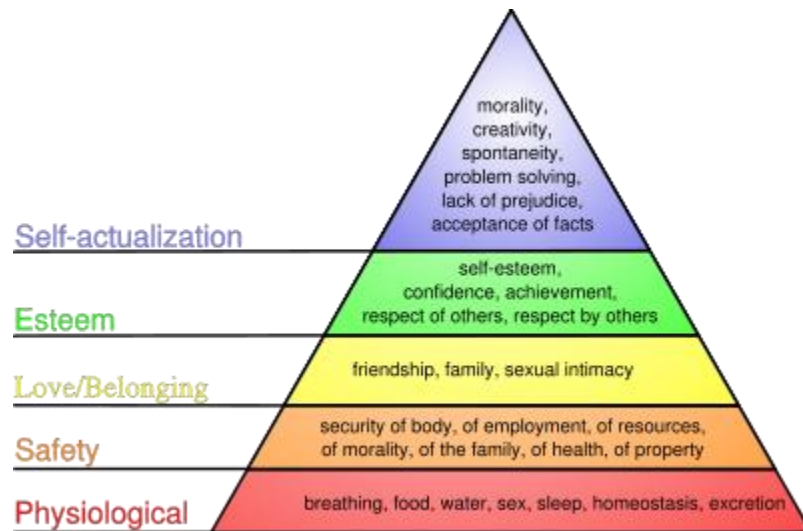
In identifying barriers to creativity and stressing the significance of these psychological barriers, Shallcross (1985) declares:

Given the forgoing categories of barriers to creative productivity---historical, biological, psychological, and sociological---by far the most significant and prevalent barriers are those are psychological, and these are the ones that demand the most attention from teachers of creative behavior. If we define a barrier as a factor that impedes progress or restricts free movement and give that definition a psychological application, then we are taking about the heart of the teaching profession: What are those elements that impede growth and development and how can they be eliminated or, at least, reduced? (p. 58-59)

Shallcross (1985) also explains that “some people, in fact, convince themselves that external forces will never allow them to exercise creativity. This in itself is a psychological barrier” (p. 59).

Gowan (1972) also describes the influence of anxiety in connection to learning: “Creating is a tender time. Children cannot create when they are constantly fearful or worried, or under undue stress or anxiety. Such children may learn cognitive memory-type production well, but at the expense of a complete “wipeout” of their creative abilities. To be creative, one must be in reasonable mental health” (p. 76). Furthermore, Gowan (1972) considers feeling secure and loved in one’s environment to be influential factors in the creativity process which should be well thought-out as basic needs that should be met in order to enjoy creativity, in light of the Maslow hierarchy, as shown in figure (3):

Figure 3. Maslow Hierarchy



(Wikipedia, *Maslow Hierarchy*, Representations section, 2008)

Gowan (1972) also explains that “The child also has to become more comfortable with ambiguity. He must learn to separate it from anxiety. In life there is often more than one answer to a question, and if the question is not well put, there may be no answer at all. The child has to live with this kind of intellectual tension without becoming affectively anxious about it and without aborting the creative ideas which produce it” (p. 76).

### Low self-esteem

In many cases, visual learners suffer from low self-esteem because of their failure in many school experiences, and also due to not being aware of their own tremendous gifts and talents and due to not feeling recognized and appreciated by others for their unique abilities. What creative visual children observe is that other children--the so called normal ones (auditory



sequential learners)--succeed in their schooling experiences and are highly appreciated by others for this school success and achievement, while the creative ones often fail and don't receive such great recognition. So teachers and parents need to work with visual creative children to help them build a very positive self image and develop self confidence by rewarding their uniqueness and helping them realize their talents so they can pursue more successful school and life experiences (Golon, 2004).

Torrance (1962) holds similar views:

The creative child who abandons his creativity sometimes becomes a very conforming, too obedient child. As a consequence, he is likely to grow up with a lack of confidence in his own thinking, be uncertain of his self-concept and be overly dependent upon others in making decisions...to show the importance of being free to test one's limits through experimentation and exploratory activities. Without this, a child cannot know his capabilities and potentialities. (p. 126)

Along the same lines, Gowan (1972) emphasizes these points:

We need to help children in these discontinuities of self concept. The child who sees himself as unable to perform must learn to see himself as a capable performer. Your child who is now afraid of the water will later see himself as willing to bathe with parental presence, later to bathe with parental supervision on the shore and still later to swim on his own. Growing up consists of these constant changes, and parents can help children make these transitions. (p. 76)

In conclusion, building a child's positive self concept and image is a keystone for creative nurturing, development, and expression. Providing assistance and support for the child and wisely managing the level of help from most to least is a great strategy to reinforce positive self expansion.

## **Idealism**

Webb, Amend, Webb, Goerss, Beljan, & Olenchak (2005) note that “It would be seem that idealism, which gifted children and young adults exhibit early in life, would be a good thing. However, when one combines idealism with a gifted person’s intensity, the idealism can cause pain” (p. 22). Additionally, these authors claim:

Gifted children can be keenly disappointed when they discover that teachers, family, or society fall short of their ideal. Gifted adults, too, are dismayed at the hypocrisy and unfairness that they see in society. As a result, these children, and sometimes the adults, become cynical, angry, or depressed and may act out their disappointment in behaviors, such as sabotaging school or business computers, that could be viewed as an antisocial Conduct Disorder.

The intense and idealistic gifted children or adult who is misunderstood by her parent, teacher, employer, or caseworkers is easily seen as overly sensitive, too serious, pessimistic, or possibly depressed. Sometimes these persons withdraw to live on the fringes of society or into a narrow and esoteric private world---one they can control that feels more satisfying and less threatening to them. (p. 22)

In summary, creative children face many problems that represent obstacles to their journey of creative development from birth through even late adulthood. Examples of these common problems are: Misdiagnosis and mislabeling of creative children; feeling neglected, disliked, or unrecognized; asynchrony; withdrawal or refusal to learn; boredom; discipline problems; short sleep or long sleep; high sensitivity; resiliency; difficulty with peer relationships and making or keeping friends; failure or a low level of academic achievement; frustration; high anxiety levels; low self esteem; and idealism. Teachers, parents, and other professionals need to be aware of these issues and to learn how they can effectively use them as resources to nurture children’s and young people’s creativity, and not consider them as problematic behaviors or negative characteristics that will impede their learning or socialization processes. These

characteristics can be very positive and critical to facilitating children's creative processes, expressions and outstanding learning outcomes.

### **Differences in learning styles and how the brain works**

Learning styles are an important area that should be highly considered when examining children's creativity and educational processes. Many creative children fail in schools and are at high risk of losing their creative potential because they do not fit in well with the school system, which depends heavily on teaching and assessment techniques that address only one learning style, auditory sequential learning. Many teachers, psychologists, parents, and other specialists still believe that simply presenting information solely through visual resources should be enough to meet the needs of visual-spatial learners. Unfortunately, many professionals and parents are still not aware of how the brain works and how learning processes operate differently for the two major learning styles. Differences in learning styles also can indicate differences in personality dynamics and profiles, which is still mainly unrecognized, but which may frequently lead to the failure of creative children.

Palladino (1999) stresses that we still do not understand accurately how the brains of creative children work. They may often be punished, and may receive less appreciation and recognition for their creative abilities and talents. They may often be blamed for not completing tasks or assignments, or reprimanded for not sitting as expected in their seats, or forced to finish their work in inappropriate modes or conditions. They may often receive low grades for poor performance and for mistakes in spelling, or math, etc. We tend to put a lot of pressure on them to force them to think or view things in our way, and not in their own ways. This can lead to

many problematic manifestations as a result of a mismatch between who they are, how they think, what they want to do, and who we want them to be or to think or to do.

There are fundamental facts that we need to understand in order to support creativity in school, in homes, throughout society, and across all ages. Pink (2005) raises a significant detail about how our brains work in connection to understanding creative persons. He states, “The left converges on a single answer; the right diverges into a Gestalt. The left focuses on categories, the right on relationships. The left can grasp the details. But only the right hemisphere can see the big picture” (p. 23). As Pink continues to explain:

In other words, leading a healthy, happy, successful life depends on both hemispheres of your brain.

But the contrast in how our cerebral hemispheres operate does yield a powerful *metaphor* for how individuals and organizations navigate their lives. Some people seem more comfortable with logical, sequential, computer-like reasoning. They tend to become lawyers, accountants, and engineers. Other people are more comfortable with holistic, intuitive, and nonlinear reasoning. They tend to become inventors, entertainers, and counselors. And these individual inclinations go on to shape families, institutions, and societies. (p. 26)

West (1997) also emphasizes the same idea by highlighting early experiences and their influence in brain development and the way how we should look to performance in connection to brain processes, famous figures, and future benefits for society. West (1997) reports:

it is becoming apparent that early growth processes can sometimes produce substantial diversity among different brains and that this diversity frequently has great benefit for the larger society overtime, promoting forms and magnitudes of creativity and originality that might not otherwise have been possible. Those who learn with great difficulty in one setting may learn with surprising ease in another. (p. 11)

West (1997) further describes:

Research into the possible connection between creativity and the functions of the two hemispheres has shown that some creative individuals have an ability to balance, and alternate between, the right and left hemispheres (and the corresponding dissimilar modes of thought). As we will see, the alternation between two modes of consciousness is rather clearly shown in descriptions of the

creative process by Albert Einstein and others. A similar alternation has also been documented in studies of gifted children. (p. 15)

In more depth, West (1997) details:

Early development in the normal brain involves the production of an excess of neurons and an excess of connections between neurons. As development proceeds, these neurons and connections tend to die off in large numbers, in a kind of internal natural selection process. Where connections are made to other neurons, the original neuron and the connecting fibers survive. Where no connection has been made, the neuron dies. This is the normal and usual process, somewhat analogous to that of the growth of bones. Bones grow along lines of stress that are defined by use. To some extent, likewise, the pathways of the brain grow along lines of use. Thus, for evident reasons, both systems are well adapted and are responsive to the needs of the specific conditions experienced by the organism at a particular time. (p. 97)

Williams (1983) has likewise stressed how teaching should be targeted to both sides of the brain, to enhance creative expressions. Williams reports:

The power of the two-sided mind is demonstrated most dramatically in accounts of creative discoveries. Any significant creative breakthrough is usually preceded by a good deal of primarily logical, linear thinking as an individual defines and redefines a problem. Then there comes a moment of insight when an answer present itself, and finally the mind tackles the difficult job of evaluating the insight and putting it into a form in which it can be communicated and applied to the problem. Ask scientists or inventors, and they can tell you of the logical, analytical work that precedes and follows the insight, but they are often vague on the subject of how they arrived at the insight. In one account after another, you read of answers “coming to” individuals, and the manner in which insights and discoveries “come” is never logical. (pp. 5-6)

Additionally, Williams (1983) notes that in most typical schools at all levels of education, even the elementary level, teaching focuses on books, worksheets and lecturing, rather than on exploring and using direct experiences such sensory knowledge and practices. As a result, the left side of the brain is used a lot more than the right, in which case the students who are not skilled in verbal processes tend to suffer more than other students, and they may not reach their

full, potential expression. In many cases, these students will function below their full potential. In most situations, teachers and parents may think that their classmates who are more verbally skillful are learning marvelously, and this is indeed the appearance, but in reality, they do not get help in developing the right side of their brain, which can put them at serious risk of losing their creativity. Williams (1983) recommends a balance between developing the two sides. Books and lectures are still important, but they should not be the only methods of teaching. Using books and lectures in teaching, as Williams advocates, should come after using fantasy and exploring experiences. The use of books and lectures also should be emphasized for seeking more understanding of the concepts or subjects, rather than for learning facts that they include as the learning end for these topics or content areas. Even when teachers use books and lectures, they should be used in a way that also meets the needs of right-brain students by using the right-brain-side techniques based on sensory stimulation, imagination, discussion, and experimentation, even with the most linear and verbal topics such as grammar.

Williams (1983) also adds that students who are distinguished by their verbal and linear skills may actually experience a “hidden deficit” (p. 9). If teachers continue to be happy with their verbal and linear abilities without supporting the development of their right brain skills, including spatial thinking, metaphors, and multi-sensory thinking, then these students may operate with only limited thinking strategies and may experience difficulty in the situations that require manipulating a variety of thinking abilities. For example, with students who are skilled in their early years in written computation, if teachers did not encourage their skills in spatial thinking by employing manipulative materials, these students can suffer greatly later on when they face math problems or forms that require abstract thinking or any other advanced level of thinking such as estimation or identifying large-scale models.

Visual thinking, fantasy, evocative language, metaphors, direct experiences, multisensory learning, and music are identified by Williams (1983) as the best teaching techniques for right-brain students who are visual learners (p. 30-36).

In a similar approach, to connect brain sides to personality profiles in an educational context, Silverman (2002) has described two main learning styles: visual-spatial learners and auditory-sequential learners. Silverman relates this major classification of learning styles to the differences in brain organization. Concerning visual-spatial learners, they think in pictures rather than words; they learn more effectively visually rather than aurally. When they learn something this way, they retain it forever. Visual-spatial learners do not like to learn through rote learning such as repetition and drills. They have difficulty learning if they do not see the big picture. Details for them come after the big picture of the concept, not before. They dislike following step-by-step processes to learn something. They can reach effective and correct solutions to problems without following the required steps in order. So they are not sequential learners. They love complex tasks and can do amazing jobs with them, and yet at the same time, they struggle with simple tasks. They care more about the process than the product, so they might not be able to show their work because they did not end with a product. They have problems with time consciousness. They are very skillful in organizing information even if it is from different fields. They love playing with puzzles, computers, chess, and Legos. They love designing experiments and discovering everything by taking it apart. They are very creative builders with any available materials. They also love finishing mazes. They excel in math reasoning more than computing. Their creative outlets can be technological, mechanical, emotional, or spiritual. Their visual memory is their long term memory. They are very sensitive to others' attitudes, especially teachers. Their subject areas tend to be geometry and physics.

Silverman (2002) describes learners with an auditory-sequential learning style as loving to use and manipulate words. Their thinking is convergent; they see similarities among things. They are strong listeners; they can follow verbal directions and remember conversations. They can learn through a step by step sequence. They learn the details or the parts before learning the whole picture. They pay attention to details. They can learn foreign languages more smoothly, since they are rule applicators. They use logical thinking and they are good at memorizing facts. They are very conscious of time order.

In agreement with Silverman's theory of two kinds of learners, other researchers such as Freed and Parsons (1998) report:

If you're right-brained, you're less sequential in your processing. While the left-brained child will build a model by following the written directions step by step, the right-brained child either studies the pictures or throws out the directions, preferring to build it his own way. Right-brained people are holistic, whole-to-part learners. They pick up skills more easily by having them *demonstrated* than by having the steps *explained*. Instead of learning to ride a bike through trial and error (getting on and falling off), they'll study how others ride a bicycle, then jump on and do it when they feel confident they're ready. (p. 54)

Freed and Parsons (1998) emphasize that right-brained children tend to turn into very creative adults because they have a great potential which helps them learn certain skills more naturally such as in art, music, and problem solving. They enjoy spatial and three-dimensional thinking, since they are distinguished with their ability to think about everything in pictures rather than in words. They always draw the pictures in their minds for their creative action before it happens. They enjoy the ability to create and hold detailed pictures of their creations for a lengthy time. They can visualize a mental image of their finished work. They love competition and perfectionism. They love types of jobs which have less routine and more fluidity. They tend to believe that many rules are not necessary. They are impulsive, and they can handle many tasks



at the same time. They are the creators of novel ideas and challenges, and they often question authority.

Concerning the other type of learner, Freed and Parsons (1998) believe that left-brained children love talking and writing. They smoothly grasp rules and details such as in spelling, grammar, and punctuation. They are very skillful in learning foreign languages. They do a better job in timed tests than do right-brained children. They favored working in groups more than as individuals. They are very accepting and positive towards what they hear and read, rather than thinking on their own. They like known, predictable tasks. They do not feel relaxed with surprises and new things. Their favored jobs and tasks are those which involve a lot of routines, and that is when their performance excels. They perform worse when sudden situations occur, when their routines are interrupted, or when problem arise surprisingly and they have to solve problems creatively. They prefer to be told the rules rather than to be shown them, and they get the big picture of things and concepts after learning in step by step in order. Freed and Parsons (1998) state that “this is the profile of the typical school-teacher” (p. 52), and this researcher believes that this explains the failure and low achievement levels of many of creative children in the school system.

In describing a process to learn how to identify a child’s learning style, Golon (2004) explains seventeen significant questions that are the most relevant to distinguishing a child’s preferred learning style. Golon (2004) suggest that if the answer is yes for at least nine questions, this qualifies the child to be classified as a visual-spatial learner. These questions are:

Does your child think mainly in pictures instead of words?

Is your child good at solving puzzles or mazes?

Does your child like to build with LEGOs, K’Nex, blocks, etc.?

Does your child often lose track of time?

Does your child know things without being able to tell how or why?

Does your child remember how to get to places visited only once?

Can your child feel what others are feeling?

Does your child remember what is seen and forgot what is heard?

Does your child solve problems in unusual ways?

Does your child have a vivid imagination?

Is your child talented in music, dance, art, or drama?

Can your child visualize objects from different perspectives?

Is your child organizationally challenged?

Does your child love playing on the computer?

Is your child terrible at spelling?

Does your child like taking things apart to see how they work?

Does your child have at least one visual-spatial parent? (p. 17)

One of the interesting facts reported by Silverman (2002) and Golon (2004) about visual children is that in their very early years of life, as toddlers, many have the ability to direct their parents or anyone driving the car from back in their car seats. Such children can correct directions for their parents, and wrong turns are upsetting to them, especially when heading the places that interest them most. As Golon (2004) describes, “It’s almost as though they have an internal Global Positioning System wired into their brain! Again, photographic memory is at work with VSL children who are able to recall, as vivid pictures in their mind, precisely what the landscape, architecture and roads look like to places they’ve only seen once” (p. 21).

Vitale (1982) provides further details of 26 behavioral characteristics that are manifested by many right-brain children:

- appears to daydream
- talks in phrases and leaves words out when talking
- uses his fingers to count
- draws pictures on the corners of his homework papers or dittos
- has difficulty following directions
- makes faces or uses other forms of non-verbal communication
- displays fine motor problems (cutting, writing, or pasting) when asked to conform or do structured tasks. (Fine motor problems rarely appear when the child is doing something he has selected)
- is able to recall places and events but has difficulty in recalling symbolic representations such as names, letters, and numbers
- may have difficulty in phonics or decoding skills
- is on the move most of the time
- likes to work part-way out of his seat or standing up
- may exaggerate when retelling an event in which he has been involved
- often has a messy desk
- has difficulty in completing his work on time
- likes to take things apart and put them back together again
- displays impulsive behavior; tries to change the world to meet his own needs
- likes to touch, trip, and poke when relating to other children
- goes to the pencil sharpener often
- gets lost coming to the classroom
- may forget what he went to his room to do
- may be very good in athletics but poor in subjects such as English
- will give the right answer to a question but will be unable to tell you where it came from
- will often give responses that are unrelated to what is being discussed
- may be a leader in the class

- may chew his tongue while working.

(p. 17-19)

To conclude, both learning styles should be highly appreciated in the school system, and teaching should be aimed at both right-brained and left-brained learners in order for all children to experience success during their educational journeys, for future lifelong learning, and for future career accomplishments.

### **Creativity in children and the gift of disabilities as differences in learning styles**

Many creative children are perceived as being disabled due to not meeting their unique learning-style needs. Also, many children with special needs or disabilities are perceived as only disabled, and not as having any giftedness areas and without appreciating their disability (if it indeed really exists) to be at the same time a source for their giftedness.

According to Bates (1981), “Studies have shown that young learning disabled children are more creative than normal children. They have scored higher than normal children on tests of originality in figural creativity” (abstract).

This researcher believes that this statement by Bates needs to be highly considered by specialists and professionals in the education field. We need to review our educational practices including teaching methodologies; evaluation procedures; early intervention strategies; diagnostic systems, special education programs; etc.; to consider this significant fact for the benefit for children and society.

Palladino (1999) further explains why gifted children are frequently perceived as disabled:

It is a natural human tendency to assume that all minds work the same way. We tacitly agree that all minds should naturally be able to follow through on one idea at a time, from beginning to end, with attention to detail. We call convergent thinking the norm and we presume it's what comes naturally if a brain is "normal". Divergent thinkers are viewed as having 'attentional problems'.

We label convergent thinking as right and divergent thinking as wrong. We base the methods we use to train our children on this premise. We expect children to focus in a linear fashion for as long as we say they should. This is true at home and at school. And at school, as class sizes get larger and children get more diverse, a teachers' tolerance for a student's divergent thinking necessarily diminishes. The same curriculum gets taught to all students in the same way and at the same pace. (p. 15)

All of these previous statements evidence the significant need for this research study and support this researcher's call for the new school reform that calls for "Education for creativity rather than education for achievement". This researcher also calls for considering "The Gift of Disability". We need serious revisions of our educational philosophies and applications to save the great lost of creative potential for many children. School system should be the natural cultivating environment for these prospective.

Additionally, West (1997) explains:

for a certain group of people the handicap itself may be fundamentally and essentially associated with a gift. For some the handicap and the gift may be two aspects of the same thing. How we perceive it depends entirely on the context. In other words, the complex of traits referred to as "learning difficulties" or "dyslexia" may be in part the outward manifestation of the relative strength of a different mode of thought, one that is available to everyone to one degree or another, but one that a few children (and adults) find it difficult to suppress. Too often, the gift is not recognized and is regarded only as a problem. (p. 19)

West (1997) also assures that recent research findings evidence that many famous persons who had extraordinary achievements in their fields, and at the same time manifested a high level of learning disabilities, are found to belong to these categories. Such examples include "an experimental psychologist, a Grand Prix racing car driver, a Nobel laureate immunologist, an

explorer, a government agency director, an inventor, an artist, actors and actresses, business men and women, and Olympic gold medal athletes” (p. 18).

This evidence stresses the significant need to look at the giftedness of every individual and consider it in their individual plans, even for those with special needs. The giftedness of special needs individuals is a rich avenue in their personality that can greatly support their other areas of needs. By enriching creativity and giftedness in special needs children, this will help them to overcome their disabilities to creatively express themselves.

West (1997) reports, “Considering the variety and extent of the problems experienced by these historical and contemporary figures, it is perhaps not surprising that similar difficulties are often found among the children of talented professionals, architects, artists, photographers, actors, musicians, film makers, sculptors, athletes, engineers, scientists, radiologists, lawyers, and mathematicians” (p. 18).

Discussing another area of research, Eide and Eide (2006) note that research proves that children who are identified with their giftedness are the ones who have this extraordinary ability to utilize various parts from both sides of brain for the challenging tasks that require creativity. Studies name these as “whole-brained thinkers” (p. 436). These children are distinguished with their aptitudes in “Pattern Processing and Attention” (p. 436).

Eide and Eide (2006) also add that “Sometimes gifted children experience difficulties because their creativity and Operations Officers fail to work well together as a team. Imbalances in these executives may result in undisciplined flightiness or uncreative and obsessive expertise” (p. 444).

In sum, giftedness should be highly valued and worthy used in all children including the ones with special needs. Disabilities and other areas of needs should be viewed as giftedness resources as well in education and careers contexts.

## Attention Deficit Disorder

One of the most famous researchers who has raised the significant issue of mislabeling children with A. D. D. is Thomas Armstrong, who wrote the book *The Myth of the A. D. D. Child: 50 ways to improve your child's behavior and attention span without drugs, labels, or coercion* (1997). He questions the existence and consideration of A. D. D as a separate medical disorder that has a genetic basis. Armstrong believes that causes of A. D. D. behaviors in children such as hyperactivity, destructivity, and impulsivity are non-biological and that they are cultural and social or individual in nature (p. 26).

Freed and Parsons (1998) comment on how powerful Armstrong's book is:

Dr. Thomas Armstrong, in his controversial book *The Myth of the Add Child*, reminds me of the brave soul who revealed that the emperor wasn't wearing any clothes. He makes a very persuasive case that ADD is little more than a convenient catch-all term for children who don't fit someone's definition of how children *should* behave. These are more likely than not to be nonconformist children who questions rules and authority. They have probing, inquisitive minds, a strong sense of fairness and justice, and don't respond well to "You'll do it because *I said so*. (p. 24)

The main serious issue beyond perceiving A. D. D. as biologically based, as Armstrong (1997) explains, is that many teachers, parents, psychologists and other professionals behave according to the perception that the main causes for A. D. D. are rooted inside the child himself, and not in the outside environment. This perception put these children at a very high risk since

the efforts to change factors in an outside context will not be thorough if adults are misled by this perception.

Armstrong (1997) calls to our attention that “Above all, keep in mind that your child’s hyper-energy only becomes a problem when the environment around him fails to find a constructive use for it” (p. 114). Armstrong asserts that there is a big possibility that many children who are labeled with A. D. D are not in fact A. D. D, but their A. D. D. behaviors such as hyperactivity and inattention reflect the anxiety and depression they may suffer due to other social pressures and problems in schools, homes, or any other cultural contexts, such as a reaction to a boring classroom, a natural reflection of gender differences (more boys than girls are labeled with A. D. D, according to their natural gender play type), or a “Bad Fit” (p. 32) between parent and child. In addition, in many cases parents find that labeling their child with A. D. D. is an effective way to find a reason for their child’s problematic behaviors.

Providing more evidence of such frequent diagnoses, Freed and Parsons (1998) report:

Nowadays, it seems every child who has a high energy level, who is bored in school, or who sasses his teacher is said to have ADD. Attention Deficit Disorder is a convenient umbrella term for a myriad of other problems and conditions. Many children exhibit symptoms of ADD during stressful events, such as divorce or relocation, or when they have problems with peers. Emotional and adjustment problems can also masquerade as ADD or occur in tandem with ADD. (p. 26-27)

Additionally, Eide and Eide (2006) observe that “Gifted children are frequently diagnosed--and misdiagnosed--with ADHD, because they often display behaviors used to diagnose ADHD” (p. 450). They explain such misdiagnoses as follows:

these behaviors may-and in the case of gifted children commonly do--result from causes other than attention deficits. Gifted children may appear inattentive in class if activities aren’t challenging enough or, if they are already familiar, seem irrelevant or are too quickly finished. These children may appear impulsive because they’re intense, independent, willing to question rules, because they may speak their minds without fully assessing consequences (the “Emma dilemma”) or



may blurt out answers in class. They may also appear hyperactive if they become bored and restless, over stimulated, or even highly enthusiastic. In addition, they are sometimes mislabeled as “hypefocusers” when they concentrate so intently that they “block out” the rest of the world. (p. 450)

Eide and Eide (2006) also believe that there are two main models of behaviors that represent the main reasons for mislabeling gifted and creative children with A.D.H.D.: the inattention during lessons in the classroom and at the same time the hyper-focusing or the selective attention to certain directions, activities, or subject areas according to personal interests. Eide and Eide (2006) assure that this type of behavior has been observed to be a characteristic of highly creative children as well as adults, thus such behavior can be regarded highly as an indicator of immense creativity. Other types of behavior include a high sensitivity to the environment, being easily distracted by any environmental stimuli, and loving and seeking newness and freshness.

Armstrong (1997) also believes that some children receive the label of A. D. D just because they have diverse learning styles that differ from the traditional classroom and what he describes as “central-task” learning (p. 33).

For such mislabeled children, their cognitive style conflicts with the traditional teaching style that focuses on sitting to listen to the teacher’s directions and following assigned tasks. These children learn excellently through creating their own projects and through having information presented to them through numerous sources, which helps them to internalize the information.

In underlining the giftedness of A. D. D. children, according to Armstrong (1997), “Another study, at Purdue University, showed that hyperactive children were more

spontaneously talkative than “normal” classmates and told stories that were more “novel” or creative” (p. 33).

Armstrong (1997) adds a very significant issue related to the problem of perceiving children labeled with A. D. D. only as disabled, without looking seriously to their areas of strengths, creative potentials, talents and other aspects of personality and health that have a very strong power to positively influence children’s success in life. He states, “in fact, there is no ‘A. D. D. child,’ but many different kinds of children who are hyperactive and inattentive for many different reasons” (p. 34). He also states that “A. D. D. does not exist; these children are not disordered. They may have a different style of thinking, attending. And behaving, but it’s the broader social and educational influences that create the disorder, not the children” (p. xx, preface).

Armstrong (1997) gives very strong evidence that supports his position. Children who have been labeled as A. D. D. do not show the so called A. D. D. behaviors in other contexts and settings such as real life situations. For example, a study findings show that more than 80% of these children do not even show these A. D. D. behaviors while examined in a physician’s office or other unfamiliar settings when interaction is one-to-one, especially if the person whom these children will interact with is their father.

One does not see these A. D. D. behaviors as well in the classroom sometimes under certain conditions. Under these conditions, children tend to behave like any other children, who we name them to be normal, so you cannot distinguish these A. D. D. from other children. These conditions include when these A. D. D. children have the authority of choosing their learning activity, and when they have the control of their learning pace when working in these experiences selected by them. When one measures their attention, they behave within the normal

range, so one cannot find any evidence that they have attention deficits. Additionally, Armstrong adds the significant point that these children can pay very good and long attention to the activities that interest or challenge them, or that stimulate their thinking due to novelty. Approximately 50% of these children discover, when they become adults, the myth of being labeled as A. D. D. and that they were really victims of mislabeling. Surprisingly, they discover that A. D. D does not exist!

Making a similar argument, Lovecky (2004) asserts although many deficits can be observed in children with attention A.D.D. in different areas of development, such as cognitive, emotional, and social areas, at the same time, these children enjoy some strengths that contribute to their creative expression and innovation. Lovecky believes that many children with AD/HD are creative. They enjoy a superior tolerance for confusion, are deeply responsive to fancies and inclinations, have a powerful imagination, exhibit dedicated problem solving skills, and can hyper-focus and think persistently about things that interest them. In addition, they have a high ability of visual and holistic thinking, they possess a good memory, and they seek stimulation.

Lovecky (2004) claims that creative children with AD/HD or AS are interested in leading their play, directing their peers, and assigning them roles. Creative children with AD/HD have problems breaking down the big picture they view in their mind into small pieces and choosing which parts are important to select from the greater whole to begin with. Attention to details for them means changing their focus target from the whole to the parts, and they are concerned about losing the greater mental image that they envision and which represents a resourceful power for projecting their ideas. In other words, “the devil is in the details” (p. 219).

Palladino (1999) also believes that children are often misdiagnosed with A.D.D.:

There is a common misperception about the diagnosis of ADD. Many people think that if a child's behaviors match the list of criteria, the child has ADD. This

is inaccurate. The criteria are actually behaviors typical of all children, especially divergent-thinking ones. To qualify for the diagnosis, a child's behaviors *must be dysfunctional*. His functioning must be impaired to an extreme that is more severe than the ordinary problems of approximately 95 percent of children his age, for example, if he is chronically failing in school. (p. xv)

Palladino (1999) believes that all ADD children are characterized with the "Edison trait", which describes creative children, but not every child who is "Edison trait" is ADD. She believes the majority of creative children do not fit under the ADD label. We tend to consider creative children to be inattentive because they do not follow our directions and pay attention to the things that we expect them to and which are vital to us; instead, they are attentive only to the things that are imperative and interesting to them.

She further explains such situations thus:

ADD symptoms are best explained as *mismatch* between a child's neurochemistry (the Edison trait: widely divergent) and the demands of a situation (the school setting: highly convergent). The greater the mismatch, the worse the symptoms. Having to listen to a teachers' lecture, do a timed class assignment, read lengthy reference materials, or perform repetitive tasks will aggravate your child's symptoms. On the other hand, his symptoms will lessen when he is being tutored one-on-one (forced convergence); he is getting extra regards for his efforts (highly reinforced and therefore more highly motivated convergence); he is in a novel setting (divergence); or he is doing intrinsically interesting activities (divergence) (p. 193)

Taking a similar position, Armstrong (1997) asserts that the emphasis in school is still focused on linguistic and logical mathematical intelligences; reading, writing, math, and science are the content areas that receive high level of concentration in the educational process which may put some children at risk if these are not the areas of their strengths.

Armstrong (1997) further explains the risks that such children face:

However, if he has difficulties with linguistic and logical areas, then he may well end up with the A.D.D. or LD (learning disabled) label (or both), even if he possesses high levels of ability in the other five intelligences. In my own research, I discovered that children with school problems most often showed particular

strengths in those intelligences least honored in the classroom, particularly bodily-kinesthetic and spatial intelligence. (p. 94)

Armstrong (1997) believes that children who are especially distinguished with high – bodily-kinesthetic abilities are at the highest level of risk to receive the A.D.D. label. These children loves to explore things by touching or moving around or by building experiences with their hands or by some other physical actions that they manifest while learning about things. The formal classroom demands different behaviors, however; it requires students to sit still and quiet for many hours to pay attentions to lessons that are heavily focused on listening skills--listening to directions and information presented by teachers verbally--or by reading worksheets and textbooks. Children’s restlessness, jiggling, and inattention are the natural outcomes and consequences for this kind of shut-in situation.

Armstrong (1997) reports some examples of famous persons who are thought to have had A.D.D:

Many others in the history have used their vivid imaginations to better society, including naturalist Louis Agassiz, Elias Howe (inventor of the sewing machine), Robert Louis Stevenson, and nuclear physicist Niels Bohr. These thinkers, like many kids labeled A. D. D., were “daydreamers.” The only difference was that these eminent individuals used their daydreams productively. With the proper guidance, so-called A. D. D. kids can also thrive through the imaginary gifts. (p. 104-5)

The following list represents additional well known figures who are considered to have had A.D.D:

Hans Christian Anderson	Ann Bancroft	F. W. Woolworth
Beethoven	Sir Richard Francis Burton	George Burns
Harry Belafonte	Gregory Boyington	Thomas Carlyle
Andrew Carnegie	Lewis Carroll	Prince Charles

Agatha Christie	Winston Churchill	Admiral Richard Byrd
Stephen Hawkins	Sergei Rachmaninoff	Mariel Hemingway
Wright Brothers	Eddie Rickenbacker	Ernest Hemingway
Bill Cosby	John Corcoran	Harvey Cushing, M. D.
Leonardo da Vinci	Salvador Dali	Edward Hallowell, M.D.
Dwight D. Eisenhower	Michael Faraday	John J. Ratey, M.D.
F. Scott Fitzgerald	Henry Ford	Malcolm Forbes
Benjamin Franklin	Galileo	Danny Glover
Steven Hawkins	William Randolph Hearst	Tracey Gold
Samuel Johnson	John F. Kennedy	Zsa Zsa Gabor
Michael Jordan	Robert Kennedy	Jason Kidd
John Lennon	Abraham Lincoln	Carl Lewis
Mozart	James Clerk Maxwell	Steve McQueen
David H. Murdock	Napoleon	Nasser
Isaac Newton	Nostradamus	Louis Pasteur
Kate Kelly	Picasso	Edgar Allan Poe
Ronald Reagan	Dan Quayle	Russell White
George C. Scott	Sergei Rachmaninoff	John D. Rockefeller
General Westmoreland	Weyerhauser family	Eleanor Roosevelt
Babe Ruth	Anwar Sadat	Howard Morris
Nolan Ryan	Pierre Salinger	Peggy Ramundo
Pete Rose	Charles Schwab	George Bernard Shaw

Alberto Tomba	Russell Varian	Puccini Rodin
Tom Smothers	Steven Spielberg	Sylvester Stallone
Jackie Stewart	James Stewart	Henry David Thoreau
Leo Tolstoy	Van Gogh	Thomas Thoreau
Jules Verne	William Butler Yeats	Lindsay Wagner
Robin Williams	Stevie Wonder	

(Starlite CyberBusiness Services, 2006)

To summarize, attention deficit disorder is one of the most common disorders that creative children are labeled with. Several researchers have proven that this type of disorder is significantly connected to creativity. Misdiagnosis and mislabeling children with this disorder occurs frequently because teachers and other professionals have many misconceptions about this disorder in connection with creative behavior expressions. Most categories observed by this researcher to include most figures with A. D. D. creative areas are: science, military, politic, sport, different types of art performances and inventions in general.

## **Autism Spectrum Disorders**

Thomas Sowell (2001) describes in *The Einstein Syndrome: Bright Children Who Talk Late*, a special group of children who are both late talkers and are also very brilliant children, a condition which he terms “the Einstein syndrome.” As he explains,

the obsessive interests, abnormal sensitivities, extreme reactions, and prodigious memories that Professor Winner found among high-IQ children have also been found among autistic children. But that is wholly different from saying that we can infer autism whenever such characteristics are present--even when they are present in children who are behind schedule in beginning to speak. Yet that is the

inference that is too often made by evaluators who mechanically go down a checklist of symptoms. (p. 17)

Eide and Eide (2006) also make a similar point about gifted children and misdiagnosis as autism:

In our experience, gifted children are especially likely to be mislabeled with these diagnoses, because many behaviors commonly seen in gifted children resemble behaviors used to diagnose autistic disorders. Many gifted children show intense and sometimes specialized interests and strong preferences for particular activities; are socially awkward and often isolated because temperamental introversion, personal sensitivity, and developmental asynchrony; and speak using words and facts not typical for children their age. (p. 452)

Furthermore, Eide and Eide (2006) highly recommend that before labeling any creative or gifted child with autism disorders, they should be completely evaluated using neurological and neuropsychological tests to screen for any deficits, including visual, auditory, sensory, or linguistic problems.

Freed and Parsons (1998) also emphasize the strong connection between persons who received autism labels and creativity, for they are right-brainers. They are highly visual and spatial learners. In most cases they show their creativity in music as pianists, in the visual arts, by calendrical calculation, and as “human calculators” (p. 72).

The following are examples of well known people who have had or who have closely experienced autism in their families:

Carl Erskine (former baseball player)

Beverly Sills about her son, Bucky.

Dan Marino about his son.

Mark McKewn (TV weatherman on CBS Morning News), his brother has autism.

Tom Henke (Toronto baseball pitcher) about his son.

Richard Burton: a daughter by his first wife.

BJ Surhoff (Baltimore baseball player, 1996) about his son, Mason.



Sylvester Stallone about his son, Seargeoh.

William Christopher (Father Mulcahy on the TV show M\*A\*S\*H) about his son, Ned.

Wynton and Branford Marsalis about their brother.

David Tomlinson (the actor who starred in *Mary Poppins*, *Bedknobs and Broomsticks*, *The Love Bug*, etc) had an autistic son, whose diagnosis and education is mentioned in some detail in Mr. Tomlinson's autobiography *Luckier than Most*.

Barbara Roberts (Former Governor of Oregon), mother of adult with autism.

Joe Mantegna (actor), father of daughter with autism.

Phoebe Snow (singer), mother of daughter with autism.

Jonathan Shestak (Movie producer), about his son, Dov.

(Starlight CyberBusiness Services, 2006).

Also, Dr. Temple Grandin is a famous autistic person, as reported by Freed and Parsons (1998); he specialized in animal science and also wrote several books that discuss autism (p. 71). Other well-known people throughout history who are believed to have been autistic, according to Wikipedia (2007), include the following examples:

Hans Christian Andersen – author

Béla Bartók – 20th century Hungarian composer

Hugh Blair of Borgue – 18th century Scottish landowner thought mentally incompetent now studied as case history of autism.

Lewis Carroll – writer, logician

Henry Cavendish – 18th century British scientist. He was unusually reclusive, literal minded, had trouble relating to people, had trouble adapting to people, difficulties looking straight at people, drawn to patterns, etc.

Charles XII of Sweden – speculated to have had Asperger syndrome

Charles Darwin – naturalist, associated with the theory of evolution by natural selection

Éamon de Valera – Irish revolutionary and politician

Paul Dirac – British mathematician and physicist. He was Lucasian Professor of Mathematics at Cambridge University, 1933–1963 and a Fellow of St John's College. Awarded the 1933 Nobel Prize in Physics for his work on the mathematical foundations of Quantum Mechanics.

Albert Einstein – physicist

Janet Frame – New Zealand author

Glenn Gould – Canadian pianist and noted Bach interpreter. He liked routine to the point he used the same seat until it was worn through. He also disliked social functions to the point that in later life he relied on the telephone or letters for virtually all communication. He had an aversion to being touched, had a different sense of hot or cold than most, and would rock back and forth while playing music. He is speculated to have had Asperger syndrome.

Adolf Hitler – German politician, dictator

Thomas Jefferson – US President

Prince John of the United Kingdom – son of George V of the United Kingdom

Keith Joseph – father of Thatcherism

James Joyce – author of *Ulysses*

Michelangelo – Italian Renaissance artist, based on his inability to form long-term attachments and certain other characteristics

Wolfgang Mozart – composer

Isaac Newton

Moe Norman – Canadian golfer

George Orwell – writer

Enoch Powell – British politician

Ramanujan – mathematician

Charles Richter – seismologist, creator of the eponymous scale of earthquake magnitude

Erik Satie – composer

Jonathan Swift – author

Alan Turing – pioneer of computer sciences. He seemed to be a math savant and his lifestyle has many autism traits about it.

Michael Ventris – English architect who deciphered Linear B

Andy Warhol – American artist

Blind Tom Wiggins – autistic savant

Ludwig Wittgenstein – Austrian philosopher

W. B. Yeats – poet and dramatist

(Wikipedia, Autism, para. 2)

In sum, autism disorders are another very well known disorder attached to creative children. As a general observation by this researcher for the previous lists of famous figures known to have autism, the following specializations and careers seem to be frequently associated with autism: sports, politic, military, physics, mathematics, literature, the arts including acting, drama, music, writing, philosophy, architecture, scientists, and inventors. This researcher notes that most of these careers often involve non-verbal skills, or/and are domain oriented rather than human oriented. Communication with people in most of these cases happens through a material, tool, any type of media that makes the communication indirect rather than direct interaction with people. For example, in the case of acting, there is already a set scenario which is introduced through movies, etc. and in the case of singing, there is a set song to be communicated with the audience. The same goes for writing and the use of pen and paper to communicate. In addition, music and the use of musical instruments; inventors and the use of materials; mathematician and the use of numbers; politicians and the use of set speeches; architects and the power of design, in addition to any other type of performers and the use of power of performance etc. All of these

abilities and tasks belong mostly, though not only, to the right-brain skills, which places these figures under the visual learning style category.

## Learning Disabilities

Many creative children are labeled as having a learning disability (e.g., Freed & Parsons, 1998; Palladino, 1999; Silverman, 2002; Goertzel, Goertzel, Goertzel, & Hansen, 2004; Eide & Eide, 2006). In describing the connection between giftedness and learning disabilities, West (1997) observes this trend:

historically, some of the most original thinkers in fields ranging from physical science and mathematics to politics and poetry have relied heavily on visual modes of thought. Some of these same thinkers, however, have shown evidence of a striking range of difficulties in their early schooling, including problems with reading, speaking, spelling, calculation, and memory. Irony and paradox are recurring elements of the general pattern. For example, even those who are known for their verbal gifts may have surprising difficulties in certain specific verbal skills. Those known for their talents at higher mathematics may have curious difficulties with simple arithmetic. (p. 11)

Eide and Eide (2006) have also explained the situation of children who may be labeled as learning disabled:

Children who are *both* gifted and learning-disabled are often called *twice-exceptional* (or *2e*), because their abilities lie outside the norms at both ends of the bell curve. These 2e children are immensely diverse. In fact, they embody every imaginable combination of strengths and weaknesses. The difficulties a 2e child faces largely depend upon her own combination of strengths and weaknesses; still, the broad divergence between strengths and weaknesses that all 2e children face produces several characteristic challenges.

Paradoxically, the greatest challenges many 2e children face arise because their strengths hide or mask their weaknesses, obscuring their need for help. (p. 445)

According to these authors, a child can still be gifted in certain areas and disabled in other areas. Teachers and parents need to look to the whole child and pay attention to giftedness areas as well as learning disability areas in order to enhance children's learning outcomes and their whole personality development.

In relation to creativity Goertzel, Goertzel, Goertzel, and Hansen (2004) believe that being the most intelligent or the most gifted in certain subject areas is not usually the reason for being creative in the future. Many famous creative figures manifested no giftedness in their early year, or may have been average or below average due to their learning abilities, but because they had many other personality characteristics that were essential for reaching creative breakthroughs, they exceeded expectations and surprised the world with their extraordinary creative behaviors. These authors state that "Special skills in oratory, a dogged persistence, a high tolerance for frustration, and social adaptation are the most frequently observed characteristics of the slow and average students who succeed in making themselves well known. A drive for power and attention can sometimes substitute for ability" (p. 256).

The following lists famous people with learning disabilities:

Albert Einstein

George Patton

Thomas Edison

Alexander Graham Bell

Winston Churchill

Walt Disney

Thomas Jefferson

John F. Kennedy

Woodrow Wilson

Henry Ford

George Washington

Leonardo da Vinci

Nelson Rockefeller

Tom Cruise

Werner Von Braun

Orlando Bloom	Henry Winkler
Whoopi Goldberg	Jim Carrey
Danny Glover	Bill Cosby
Harry Anderson	Kirk Douglas
Hans Christian Anderson	F. Scott Fitzgerald
Harry Belafonte	Benjamin Franklin
George Burns	Magic Johnson
Billy Bob Thornton	Abraham Lincoln
Dave Foley	Pablo Picasso
Cher	Babe Ruth
Muhammad Ali	Nolan Ryan
Bruce Jenner	Pete Rose
Jay Leno	Will Smith
Keanu Reeves	F.W. Woolworth

Accordingly, many creative persons have had or have been thought to have learning disabilities, which in many cases were evident as the source or influence for their creative abilities.

## Examples of Learning Disabilities

### Dyslexia

According to West (1997), Geschwind calls our attention to the realities of dyslexia and urges the ability to identify dyslexia and consider its gifts instead of the problems that appear when children begin their reading education. Any expert in dyslexia would be able to identify its giftedness in a child around three years old who did not yet begin to learn how to read when observing he or she play and exhibit special abilities in building blocks, or drawing or working on mechanical puzzles. An expert could identify such a child as dyslexic due to their powerful and creative behaviors that this child shares with other dyslexic children and not with so-called normal children. So dyslexia has clear giftedness areas that associated with it and that may appear evidently in very early years of life, before even the difficulty to read appears later on as a problematic area or aspect of dyslexia.

Along similar lines, Davis (1994) in *The Gift of Dyslexia: Why some of the smartest people cannot read and how they can learn*, states that “in the dyslexic, the creative urge is profoundly stronger than in individuals who do not possess the dyslexic’s basic abilities. Because of picture thinking, intuitive thought, multi-dimensional thought, and curiosity, the dyslexic’s creativity is greatly enhanced” (p. 101).

Davis (1994) believes that when it is time for children who are thought to be dyslexic to go to school, they do not develop skills such as reasoning and logic, but rather they have developed variations of these skills that does not follow the “linear model of verbal thought” (p. 102). When using their reasoning and logical skills, they use pictures rather than words, and this can be observed when they are able to solve a problem without going through the conventional steps or answer math questions without using the traditional methods of pen and paper. So



thinking in pictures instead of words then should be more beneficial in some educational tasks than others. From his point of view, most of education is still based on the “conditioning level” (p. 103) that involves rote learning through sequence pacing, and that is a key issue in education, beyond the problems that dyslexic children face in the educational system. For this reason, he calls for taking dyslexia from the “learning disability” category and instead identifying it as a “conditioning liability” (p. 104).

Davis (1994) gives evidence for his theory about the early years of famous creative people and how they were able to envision things that would not be invented until 300-400 years after they had imagined them. This supports his view of multidimensional thinking as a significant element of the creative process. He gives us the example of Leonardo da Vinci, who conceptualized a submarine 300 years before the device was invented and also envisioned the helicopter 400 years before it became a reality.

So according to Davis’s (1994) views and evidence, one can experience things through thinking as realities by using the skill of multi-dimensional ability, which is what he named “imaginary reality” (p. 97). Since Davis (1994) considers dyslexics to be non-verbal thinkers, he claims that the educational system still overlooks this significant element of creativity, which dyslexics enjoy and feel the need to express and practice. Davis (1994) supports his view with a quote from Jean Piaget: “Every time we teach a child something, we prevent him from inventing it himself” (p. 66).

Lovecky (2004) also supports Davis’s (1994) view that there is a strong connection between dyslexia and creativity. Freed and Parsons (1998) likewise share this view, stating that “We’re now beginning to realize that people with dyslexia are also right-brained and spatial.

These individuals have the ability to see things from many perspectives, which can be a blessing if you're an architect but a curse if you're trying to read, write, or spell" (p. 67).

Palladino (1999) also reports that "Few Edison-trait children actually qualify as dyslexic, but many continue to reverse letters much longer than their classmates do. Some will stop reversing letters much longer than their classmates do. Some will stop reversing letters when they learn to write in cursive. Some may continue to reverse the printed letters *b* and *d* occasionally all their lives" (p. 211). Palladino (1999) believes that in this case of letter turnaround, the process is minor and there is no basis to consider it as an impairment. Instead, she explains that "In fact, another way to understand letter reversal is as the natural expression of a fluid-thinking mind" (p. 211). She believes that since creative children think in pictures, their brain operates as an "animated motion picture of thought" (p. 211).

Palladino (1999) views that creative children's brains can perceive any symbol in a multidirectional way because their thinking is not limited to perceive symbols in just one direction, as is expected from them. Actually, she emphasizes the significance of this type of mental flexibility in the perceptual processes for future needs and career paths.

For example, she explains:

Research in the field of creativity and spatial intelligence demonstrates that there is an advantage to maintaining flexibility in visual perception. The most creative architects are those who can instantly reverse mental representations of forms left to right, up or down. Consider the mental agility of an intensive genius like Leonardo da Vinci, who wrote his scientific notes backward. It is interesting that astronauts observe how the state of weightlessness requires them to alter their spatial thinking. There is no "up" or "down." Like elite gymnasts, they must create a mentality in which fluid reversal of direction is an essential skill. They "unlearn" the kind of thinking that gives *b* and *d* separate meanings. They develop their ability to recognize that the integrity of a form persists in three-dimensional space regardless of its variable position. They train themselves to perceive that rotation does not alter the identity of a form. (p. 212)

West (1997) also notes the differences in how dyslexics may think: “for dyslexics, more than others, there may be a very big difference between those tasks that require the knowledge of rules and those tasks that require the development of creative solutions. In general, dyslexics may do poorly in areas involving conventions and rules while they may do quite well in those areas that require innovation and creativity” (p. 98). West (1997) has observed that many dyslexics were accident-prone as well.

West (1997) reports, “In an effort to comfort parents and children, it is often pointed out that a number of famous people---artists, writers, scientists and others---were able to achieve a great deal despite of having had, apparently, some form of dyslexia or learning disability, or, at the very least, some substantial form of learning difficulty. Hans Christian Andersen, Albert Einstein, Thomas Edison, Gustave Flaubert, Harvey Cushing, Auguste Rodin, Leonardo da Vinci, George Patton, William James, King Karl XI of Sweden, Woodrow Wilson, Nelson Rockefeller, William Butler Yeats and others have been identified by various writers as having had some form of dyslexia or learning disability” (p. 18).

The following list represents some of the famous creative figures in different fields that have been known or been perceived to be dyslexic:

(Inventors/Scientists Performers)

Albert Einstein

Thomas Edison

Alexander Graham Bell

Cher

Whoopi Goldberg

Susan Hampshire

Artists/Writers Military/Political Strategists

Leonardo da Vinci

Walt Disney

Hans Christian Anderson

General George Patton

Winston Churchill

Michael Heseltine

Athletes

Jackie Stewart

Duncan Goodhew

Neil Smith

(Starlite Business Services, 2006)

In sum, there is strong evidence in research that there is a significant relationship between dyslexia and creativity. This clarifies why many creative children may also be mislabeled often with dyslexia, and this stresses the significance for us as teachers, parents, and others to be more aware of this strong connection to help children be more successful in their school experiences and their future lives. This researcher observes as well that the same areas of specializations, abilities, and careers of these famous figures with dyslexia are the same categories observed with A. D. D., Autism disorders, and other kinds of learning disabilities in most cases. These areas or categories are: politic, military, art performances such as playing music, singing, dancing, acting, writing, drawing, painting, or any other art activities, in addition to all types of sports, science, or any other types of invention.

## **Auditory Processing Problems**

Because creative children are visual learners in the first place, they can be less strong in their listening skills in many cases, which puts them at risk of being labeled with auditory processing problems. Visual learners are able to think in pictures more than in words. Their imagination through creating mental pictures is a great strength. But another reason that also puts them at risk of being labeled with auditory processing problems relates to their personality style and characteristics. One common characteristic for such creative children is being more “expressive” rather than “receptive” (Palladino, 1999, p. 211). They may act out or speak aloud their ideas to keep them in their heads. They tend to talk more than to listen. They love creating and expressing their ideas rather than listening to the ideas of others. Freed and Parsons (1998) also explain that “The right-brained, visual child may experience a delay in auditory processing as he struggles to turn the teachers’ words into a mental picture” (p. 54).

Golon (2004) further explains how creative children may give the impression of auditory processing problems:

Topsy-turvy kids seem to have selective hearing. You know, they can’t hear when they’re playing with LEGOs™ and you’ve called them to come to dinner, but if you’re talking about heading out for ice cream, they’re the first ones with their shoes on, right? This may actually be a matter of not being capable of listening to more than one thing at a time, something Linda Silverman refers to as “peripheral audition” (similar to peripheral vision). Or, your children may be so engrossed in the activity they are participating in that they really don’t hear you at all. (p. 69)

In sum, auditory skills are another area of learning disabilities that can lead to mislabeling creative children for many reasons.

## **Developmental Delays and/or Late Blooming**

Developmental delays and late blooming are common issues to be often heard associated with children who become known later with their extraordinary abilities in certain areas.

West (1997) calls our attention to the issue of developmental delays:

Now let us turn from the researches of Geshwind and Galaburda to examine more closely the possible direct relationships between learning difficulties and the creative process, especially with respect to the modes of thought now associated with visual processing in the right hemisphere. It is often observed that one of the essential characteristics of creativity is a “childlike” view of the world, full of freshness and flexibility. As they grow older, most children gradually lose this view. They appear to shift their thinking to a more rigid left-hemisphere dominance at a certain age, as is expected. But it seems that some children cannot shift to the usual one-sided dominance so readily; they are delayed in the maturing process. They grow up using both sides of their brain or mature with a greater facility with the right hemisphere than is usual. This may lead to some degree of confusion, ambivalence, and awkwardness, but the intellectual resource may be profoundly richer thereby, and that makes all the difference. (p. 24)

West (1997) points to the fact that children who develop early may do well in the things they are already able to do according to their early maturity, but they may not be able to do much more or even better in some other things later on like other children who take longer to develop and become mature or who are considered to be late bloomers. According to West (1997), research shows that when a child grows quickly, he may not grow as completely or entirely. These findings are applicable to brain development and even physical growth. West (1997) believes in three significant benefits from late blooming or later maturity: the child will experience the world longer so he will be able to deeply absorb and store knowledge and experiences; the great possibility of noteworthy enhancement in neurological ability; the advantage of the lifelong keeping of a child’s view in terms of questioning, wondering, flexibility, originality, enjoying a lack of prejudice, free expression of creativity, etc.

According to West (1997), studies find that when tests compare certain abilities in early developers and late bloomers, initial results show that those who develop late show the lowest level of performance, but when tests are re-administered later the late bloomers have matured in their skills and their performance may exceed those who developed earlier. Surprisingly, the late bloomers show the best and most creative performances. West (1997) gives an example of dyslexic children whose performance is considered very weak when compared on some tests with other children when younger than ten years, yet other dyslexic children show amazing and superior performance when examined by the same test during the teenage years. This proves the effect of late blooming which can influence the superior performance of such dyslexic children.

Silverman (2002) agrees with West (1997) that: “Auditory-sequential learners bloom early and visual-spatial learners bloom late. This pattern begins in early childhood. Children who are early talkers are often auditory-sequential. Children who develop speech later are often visual-spatial. The early bloomers have an advantage for school tasks. They shine in the early years and show great promise. Visual-spatial learners may not look so promising in the primary grades” (p. 111).

## **Examples of Developmental Delays and/or Problems**

### **Late Talking Children**

Sowell (2001) notes that being very strong-willed, showing early independence, marching to one’s own drummer, and exhibiting stubbornness are common behaviors found among famous creators who were also late talkers, as evidenced in their biographies.

Golon (2004), for example, describes her visual-spatial learner son and how he learns language differently:

Sam approached learning to speak the same way. I actually thought for a time that he might be developmentally delayed because he did not babble like my friends' babies. While he did not respond to me verbally, I always felt we were having conversations. I never doubted that he understood everything I said to him and I often felt I knew what he was communicating, even without any spoken words from him. Suddenly, choosing to skip the whole, "mama-dada" phase, my son went straight for the full sentences. Sam's "first word" was, "Mom! Look at that truck!" To which I responded by nearly falling off the couch! (p. 15)

Golon (2004) emphasizes that her son exhibited this same approach for learning to walk and riding a bike, and this gives us a very strong image of how visual-spatial learning manifested and can be observed very early in life and in all aspects of development.

Golon (2004) notes that visual learners in many cases loves to learn by observation for a long time. They may just choose to stand back and watch, and if a teacher or parent pressures the child to show his/her learning outcomes doing things, without appreciating their needed time to process what they have learnt by observation, this will result in very frustrating experiences for such children and may lead them to give up learning.

West (1997) explains:

In some cases, it seems that the greater the fluency with nonverbal thought, the greater the dysfluency of verbal communication. This tendency might create difficulties for those in universities and other institutions where verbal proficiency is seen as a major indicator of intellectual competence. Yet it seems that some of our greatest minds may fit this unexpected pattern. Once we are sensitive to this seeming paradox, we may see more evidence of it among the most talented in many groups. (p. 184)

Examples of famous late talkers include the following people:

Albert Einstein



Edward Teller

Richard Feynman

Gary Becker

Julia Robinson

Arthur Rubinstein

Ramanujan

G. Gordon Liddy

Benito Mussolini

Clara Schumann

(Sowell, 2001)

Thomas Edison

(Beals, 1999)

Examples of famous people with other speech problems:

Humphrey Bogart, lisp

Truman Capote, lisp

Winston Churchill, British Prime Minister — lisp and stutter

Claudius, Roman Emperor — stutter

Thomas Jefferson, third President of the United States — lisp

Roy Jenkins, British politician — rhotacism

Stephan Jenkins, singer/songwriter/musician (Third Eye Blind) — rhotacism

Scatman John, scat singer — stutter

James Earl Jones, actor — stutter

Robert F. Kennedy, Jr., environmental activist — spasmodic dysphonia

Anybody Killa, rapper — lisp

Shane MacGowan, singer (The Pogues) — rhotacism

Marilyn Monroe, actress — stutter

Frank Muir, British comedy writer and personality on radio and television — rhotacism

Diane Rehm, radio talk show host — spasmodic dysphonia

Jonathan Ross, British television personality — rhotacism

David Sedaris, author — lisp during childhood

James Stewart, actor — stutter

Joe Strummer, singer (The Clash) — rhotacism

Richard Thompson, guitarist and singer-songwriter — stutter

Mel Tillis, country music singer — stutter

Barbara Walters, television personality — rhotacism and lisp

Bruce Willis, actor and director — stutter

Tiger Woods, golfer — stutter

## **Delays in Learning Reading and Writing**

Golon (2004) explains how creative children may experience learning delays: “Like most children, visual-spatial learners have a burning desire to learn. They recognize early on that the answers to their questions lie in books. They want to learn all there is to know of a specific passion and then they want to move on. However, learning to read can be an added challenge to the child who thinks in pictures, rather than in words, and to the student who learns whole-to-part, not step-by step (p. 69-70).

Golon (2004) explains the process by which visual spatial learner begin reading: Most VSLs learn to read best by using a process of recognizing and comparing whole words, not letter sounds and blends. The visual-spatial student is capable of filing and storing countless images that can be easily retrieved, images of words and how they sound (p. 70). Golon (2004) asserts that many visual learners, if they are highly interested in certain subject, will do their best to read any books, magazines, or any other reading materials if they have access to them, even if they are slow in the decoding process and face some problems with reading.

So there are many areas of late blooming or developmental delays, including late talking, difficulty in learning how to read or write, and others that are marker areas for mislabeling creative children.

To summarize, attention deficit disorder; autism disorders; learning disabilities such as dyslexia, auditory processing problems and others; late blooming or developmental delays such as late talking; and delays in learning to read and write are all areas that can be a source of disability as well as a source of giftedness at the same time for creative children.

There are common areas of creative abilities and breakthroughs observed by this researcher to be shared among all of these special needs categories that have been mentioned above. These breakthroughs in most cases are in areas such as: science, sports, art performances, military, politic, science, and inventions.

In the next section, teachers' recognition of creative behaviors in young children is examined. From this researcher's point of view, teachers' abilities to recognize creative behaviors in young children represent a core component of their qualifications, effectiveness, and influential ability to foster creativity in their children and to facilitate creativity in their classrooms. The discussion addresses two areas that are strongly related to the focus of this

paper: how teachers perceive creativity in young children, and how teachers influence children's creativity.

## **Teachers' Recognition of Creative Behaviors in Young Children**

Recognition of creative behaviors in general is an essential key for creative development and expression, especially in young children. Teachers have a critical role in identifying creative behaviors in the process phase, before they even reach the productivity level. The question is: are teachers able to recognize creative behaviors in young children? To answer this question, several research studies are examined in the following sections.

Ferris (1957) states that "teachers have accepted the task of developing each child's creativity without knowing a great deal about the nature of the creative process or of the skills or characteristics which appear to be associated with the ability to be creative" (p. 3).

Although the literature on creativity in educational contexts recognizes the value of fostering creativity, (Diakidoy & Kanari, 1999), little attention has been paid to studying teachers' perceptions, beliefs, or attitudes toward creativity (Fryer & Collings, 1991; Diakidoy & Kanari, 1999). Furthermore, Sankar-Deleeuw (2002) believes that there is a need to recognize and identify children with special needs, including giftedness, in their early years of life. Gifted children have not been paid as much attention as children with other areas of special needs. Gifted students have been perceived as not needing any special accommodations because of the prevailing beliefs about their capabilities to work independently. Despite having gifted abilities, however, these children still have unique needs that should be met in order for them to reach the maximum development of their potential. This researcher believes that the same case is true for creativity.

Sankar-Deleeuw (2002) notes that educators of young children are still not familiar with the behaviors that are indicative of gifted potential. Although Sankar-Deleeuw makes these statements regarding young gifted children, this researcher believes that these statements are also applicable to young creative children.

Naglieri & Kaufman (2001) note that “Despite nearly a century of research on IQ, tests of ability have changed little despite changes in our understanding of human abilities. This failure to evolve has particular implications for identifications of gifted as well as creative children” (p. 151).

In order to determine teachers’ abilities to recognize creative behavior in young children, teachers’ perceptions of creativity in general and their perceptions of creative children and creative behaviors should be examined first. The following section provides a discussion of selected literature related to these areas.

### **Teachers’ Perceptions of Creativity in Young Children**

Although early identification of giftedness has been emphasized in the literature (Millar, 2002; Sankar-Deleeuw, 2002), early childhood educators do not necessarily support this view. Sankar-Deleeuw (2002) surveyed 44 preschool and 10 kindergarten teachers (with a response rate of 52%) regarding their views about identification, early admission, and programming for gifted preschoolers. Results revealed that only half of the surveyed teachers believed in the importance of early identification. This researcher believes that similar findings would result if early childhood educators were surveyed about identifying creativity. Even in gifted education programs, the focus of instruction has been on students acquiring knowledge and skills rather than stimulating creativity (Diakidoy & Kanari, 1999).

By raising the question of why early childhood educators still are not able to identify giftedness or/and creativity; the focus should shift to examine in more depth their beliefs.

Millar (2002) asserts that “Research shows that a person must believe that creativity is important and be committed to it in order to embrace it as a “behavioral style”. Creative motivation, both externally by asking people to be creative--to think of lots of ideas and the like--and internally--that is, wanting to be creative--all contribute to the actual creative behavior” (p. 4).

Diakidoy and Kanari (1999) established a study to examine student teachers’ beliefs about creativity. Their results indicate that creativity was perceived by 49 student teachers to be a general ability presented in an artistic context.

Diakidoy and Kanari (1999) assert that the following factors are all significantly related: perceptions or attitudes toward creativity, perceptions of learning, teaching styles, preference of teaching strategies, instructional practices, and evaluation techniques. The authors indicated that further research is needed to determine how teachers’ attitudes toward creativity affect their teaching styles, instructional practices, and choice of evaluative techniques.

Fryer (as cited in Craft, 2000) surveyed teachers in the UK in order to identify the common attitudes of teachers who are oriented to creativity. Fryer found ten attitudes held by these teachers. These attitudes include valuing and encouraging the following: students’ deep understanding and awareness of the world, self-expression, intuitive thinking, free expression of feeling, and free expression in work. In addition, these attitudes include the belief that instruction should differ according to each student’s needs as well as the belief that all students can be creative. Other attitudes that Fryer found in teachers who were creativity-oriented include: encouraging students to respond with empathy; considering students’ contributions, such as ideas

and questions regarding the process of evaluating creativity; and valuing teaching strategies or skills that facilitate students' self-expression (Craft, 2000, p. 103).

Having relationships, working with others, valuing self esteem and its influence on creative expression creativity, valuing the relevance of creativity to society, making connections on one's own, coming up with new combinations, and applied imagination are also found to be valued by teachers who are positively oriented toward creativity (Craft, 2000).

Fryer and Collings (1991) have examined the views of 1028 teachers and others who were lecturers in higher education from England and Wales. In their study about creativity, Fryer and Collings found that imagination, originality, and self expression were the responses most frequently identified by participants as being descriptive of creativity. Half of the teachers were found to view divergent thinking as related to creative thinking. Only 10.2 percent considered convergent thinking to be associated with creativity (Fryer & Collings, 1991), although highly creative individuals have been found to use both convergent and divergent thinking, and Shallcross (1981) recommends that both types of thinking need to be developed in young children.

Fryer and Collings (1991) found a high correlation in educators between their views about creativity and their orientation as to be focused on their students. According to these results, creative teachers were found to be more pupil-oriented in their teaching styles. Diakidoy and Kanari (1999) pointed out that these results reached by Fryer and Collings (1991) call our attention to the question of "what would teachers account as instances of imagination and originality" (p. 2). Arguing similarly, Ferris (1957) highlights the fact that specific behavioral descriptions were lacking for the characteristics of creative children. Ferris reports that unless

this need is met, a high degree of confidence cannot be achieved in the results of research regarding children's creativity.

These findings in the literature support the significant need for identifying descriptive behaviors for creativity in order for teachers to be able to recognize creative behaviors in their students (Ferris, 1957; Torrance, 1962; Fryer & Collings, 1991; Diakidoy & Kanari, 1999), as this research study addresses.

Khatena (2000) also suggests that recognizing creative behaviors in children can help teachers understand why some children have trouble in school because of their rebelliousness, why some always feel bored or impatient, and why some decide to disregard or repress their creative abilities and just begin to act like their peers.

It is also very important for teachers to understand that children's questions can be indicators or reflections of their abilities, including creativity. In the classroom, teachers can recognize creativity through students' unusual observations and unique expressions that are manifested at irregular or unexpected times, such as the use of humor, which should not be viewed by teachers as disruptive of the learning process (Armstrong, 1998).

Some creative children may be perceived by teachers to be troubled students instead of as creative, because they cause disruptions in the classroom. They might sleep during class or play with something during class and not pay attention to their teachers. Students who are not interested or engaged in the lesson may do anything to disrupt the teaching. These students may be creative, but their creative needs have not been met. These students are at risk of losing their creativity if teachers respond negatively to their behaviors (Armstrong, 1998).

Cropley (2001) calls educators' attention to the issue of teacher bias towards creative children. Highly creative children can be viewed by their teachers as defiant. Teachers in this



study described creative children as the kind of student they found least desirable. In addition, creative children were rated by their teachers as more disruptive than other children. Students who had the highest scores on the creativity tests administered were found to be the ones who most frequently had trouble with their teachers.

Torrance (1964) states that:

Of course, there are those who are quick to point out that creative thinking leads only to trouble in the classroom. They point out that children are very imaginative and inventive in their lying, that they cheat and steal in very ingenious ways, and that they disturb classroom organization and procedures with their unusual ideas. They insist that all of these are signs of a mentally unhealthy person. Almost always, if they are honest, they will find that these socially disapproved manifestations of creative thinking ability are linked with a lack of guidance or with coercive and overly punitive discipline. This does not mean that lying, cheating, and other socially desirable behavior must be permitted to flourish. We do need to recognize that these undesirable behaviors may indicate valued potentialities, which, if properly guided and developed, may lead to socially valued achievements. (p. 1-11)

As Palladino (1999) explains these views:

See how these strengths got transformed into deficiencies? This is how others, for example, many teachers in overcrowded classroom, see your child. This is what you often hear at parent-teacher conferences. And it is understandable. It is the teachers' job to train your child to use convergent thinking skills. So they tend to overlook his divergent thinking strengths, and see only his weakness in convergent thinking.

As teachers and other professionals start to name your child's problems, they begin to identify him with the things he doesn't do well. As his parent, you may be anxious, resentful, and habituated to seeing his failures first, too. What happened to Edison happens to him: His strengths are not recognized or encouraged by others, especially in the classroom, where convergent thinking dominates. His problems multiply. His self-esteem erodes. (p. xiv)

Regarding the type of thinking that teachers prefer in their students, strong skills in memorization and accurate recall have been found to be preferred by teachers more than critical thinking. One of the survey studies shows that teachers theoretically expressed a willingness to

foster creativity in young children. But to the contrary, in their actual classrooms, teachers were found to dislike the characteristics of creativity, such as searching for novelty, in their students (Cropley, 2001).

Discussing the issues faced by creative children as late bloomers, Lynch and Harris (2001) believe that early childhood teachers should not be held to any approach that maintains that children should be able to do some things and not others by certain ages. Teachers should be able to recognize inconsistencies in their students' intellectual development as well as differences among children. For example, some children may develop the ability for abstract processing at a very early age, long before Piaget's theory suggests that it should be present. Teachers should also consider differences in learning styles among students and their individual pace of learning when planning their instruction (Lynch & Harris, 2001).

Another significant factor to consider involves how others, including teachers, perceive the emotional and mental problems of creative children, and for these problems may result from the continued repression of their creative needs. For example, neurosis, which is "prolonged anxiety," hinders the creative process rather than facilitates it (Khatena, 2000, p. 166).

Khatena (2000) goes on to explain that Torrance compared maladjustment in a creative individual to psychosis. She states that individuals can experience psychotic episodes if their creative abilities become blocked. In such situations, the individual becomes unable to think clearly and becomes trapped in their imagination, confusing reality with fantasy. The behavior of such an individual can look like that of someone who has lost touch with reality and become psychotic.

Torrance (1962) writes:

His (or her) reaction to reality may be very much like the behavior of the paranoid personality. For example, a highly creative individual, because of the very

superiority of his (or her) thinking and production may be threatening to others. In actuality he (or she) may experience a great deal of persecution. His (or her) reaction to this reality may be very much like the behavior of the paranoid personality in some respects. Or, in order to accomplish significant creative work, an individual may have to behave in ways which are judged as withdrawn or schizophrenic. (p. 156)

Torrance (1962) reports that highly creative children face unusual problems in both cases--if they decide to maintain their creativity or if they repress it. For example, if they choose to express their creativity, they may face problems with adjustment, such as loneliness and/or conflicts that might result. On the other hand, they might suffer from personality breakdowns as a result of repressing their creative needs and abilities.

If creative children continue to express their creativity, their creative behaviors may be interpreted as aggressive by their teachers and peers, especially faced with the refusal or rejection of their ideas and questions. They might suffer from alienating their friends or from not being well rounded in all developmental areas. For example, they might have difficulties in learning how to read or write or they might exhibit lower verbal skills in comparison to their other abilities. They might act differently than what would be indicated by gender norms and expectations. For example, boys may be more sensitive, which is a feminine characteristic according to the cultural context, and girls may be more independent, which is considered more of a masculine characteristic (Torrance, 1962).

In addition, creative children like to learn on their own, and they are willing to try participating in difficult activities or tasks. They may be viewed as risk takers, or they may be perceived as being hostile due to their humor. But at the same time, creative children are serious about searching for a purpose and consider that to be their business (Torrance, 1962).

Torrance (1962) views the dilemma of creative children as related to their uniqueness. This dilemma results because the outside world may judge their ideas to be silly and wild, and thus responds inappropriately to them. Such a response might negatively influence children's personality development and their future. This demonstrates the importance of recognizing and understanding creative behavior and the characteristics of creative children in order that society accepts the responsibility to guide these individuals and help them reach their creative potential. In addition, creative individuals need to learn to accept themselves and discover themselves in creative ways.

Few people, including teachers, perceive the possibility that troubled children may be highly creative. One manifestation of creativity in young children can be exhibiting behaviors that are beyond their control as a result of being led by their inner creative forces. For example, they might act differently than what is expected of them during teacher-planned activities. However, because this planning has not been their own, they may become independent or non-conforming in situations that require them to act in a compliant way. The end result of this scenario can be conflicts that affect their adjustment in negative ways. Therefore, such children usually have to make one of two choices: either cope with the tension, or repress their own creative abilities to avoid conflicts with authority figures and to avoid experiencing frustration. Since children usually do not have the skills to deal with these difficulties, they usually choose to repress their creative needs. If these children have not been encouraged or supported by other people around them, including their teachers and parents, they might develop personality problems which can affect their emotional or mental health (Khatena, 2000).

In summary, many researchers have emphasized the significance of teachers' recognition of creative behaviors in children (Ferris, 1957; Torrance, 1964; Fryer & Collings, 1991;

Diakidoy & Kanari, 1999) in order to meet their creative needs and develop a psychologically healthy personality (Torrance, 1962, 1964; Khatena, 2000). Sternberg (2000) also believes that teachers are responsible for rewarding children who exhibit creative thinking.

The next section discusses how teachers can positively or negatively influence children's creativity and provides some strategies and recommendations about how teachers can guide children's creativity.

### **How Teachers Influence Children's Creativity**

Freed and Parsons (1998) observe that "Unfortunately, many people go into teaching by default. They can't find another career that inspires them; they may not have confidence in their skills to be successful in science, business, or mathematics professions" (p. 79).

Freed and Parsons (1998) make the following comments about those who go into teaching:

Teaching is an easy choice because it's familiar. Right-brained people, on the other hand, tend to shy away from the teaching profession. They tend to associate school with negative experiences, so the last thing they want to do is become part of the system that made them feel inept. Right-brained individuals who do pursue teaching usually do so in order to change the system; they get into education with a crusader's perspective to right all the wrongs that have occurred. Unfortunately, they quickly become disillusioned with the rigidity, paperwork, and politics of education, and move on to other, more rewarding professions. (p. 79)

The resulting question is: are teachers aware of the significant role they play in children's creative lives? Ugur (2004) found that teachers underestimate and are less appreciative of creativity. They do not like some behaviors and personality traits manifested by creative children, such as: impulsivity, refusal to conform, loving adventure, disorganization in the classroom, and being imaginative. In contrast, teachers prefer other traits in children such as

being well-mannered, polite, and being punctual, in addition to obeying teachers, responding positively to their requests and rules, and exhibiting a pleasing personality and behaviors.

Teachers also found to have limited views of creativity or to associate creativity with certain negative behaviors such as being disagreeable with teachers or questioning their rules and authority.

Armstrong (1998) has emphasizes that teachers should be aware of how they can significantly influence their students' genius, including creativity. To successfully awaken children's genius, teachers need to be aware of their influences on children's futures and how greatly they can affect their children's lives in positive ways. As a result, teachers will be able to know when they nurture or block genius in their children.

In order to reach this degree of awareness, teachers need to start by focusing on themselves first. The best way for teachers to enhance creativity is by awakening their own creativity as human beings and individuals in society, then address their creativity as educators (Armstrong, 1998; Craft, 2000).

Torrance (2000) believes that teaching can have even greater power to develop the creative potential of young children than it does today. In similar fashion, Khatena (2000) emphasizes that teachers have the responsibility to not just foster creativity in young children, but to care and be sensitive to their children's creativity needs, to direct children's achievement, to encourage and support them, to maintain a supportive and safe atmosphere, and to recognize creative behaviors and moments of creativity in order to let creativity take place.

In calling our attention to factors that might lead to the repression of creative abilities, Armstrong (1998) reports that teachers should be aware that some children's creative abilities

might have been repressed during the early years of their lives. This repression process may happen as a result of influences of home, school, or by popular media.

If repression is a result of school influences, a number of factors that can lead to this repression of creative abilities. First is testing and grading, one of the most significant factors that can block creativity, because grades represent judgment on the student's performance. This indicates the presence of criticism in the classroom climate. Creativity cannot be manifested or expressed in that type of atmosphere (Armstrong, 1998).

Second, labeling and tracking are factors that can affect students' self-conceptions and academic performance. In addition, other factors related to the classroom climate can block creativity. These include textbooks, worksheets, and classroom rules that can present obstacles to children in expressing creativity (Armstrong, 1998).

Teachers can have a positive influence on children's creativity. Such influential factors include: (a) playfulness; (b) the use of humor; (c) calling students by their names; (d) high expectations; (e) keeping the pace fast; (f) friendly coaxing of students; (g) maintaining firm control; (h) having authentic teacher-student relationships; (i) understanding students' backgrounds, such as their home contexts; (j) valuing and treating each student as a part of the whole class while respecting each student's unique individuality; and (k) encouraging non-conventionality. All of these strategies have been found to effectively promote students' creativity (Craft, 2000, pp. 113-114). In addition, considering each student a genius, valuing students' experiences, providing students with a criticism-free climate, and providing open-ended exploration and freedom of choice, are all considered aspects of a creative classroom climate (Armstrong, 1998).

Jeffrey and Woods (as cited in Craft, 2000, pp. 118-119) interviewed 140 children in five classrooms for a study on these children's own attitudes towards being in creative environments. The authors found that considering children's feelings, interests, their own identities, their freedom to adopt their own preferred styles of working, and giving children the opportunity for critical reflection are aspects of classroom experiences for which student respected their teachers.

Regarding how teachers can guide their students to think creatively and can help their students and themselves to recognize their creativity, Michalko (2001) presented some strategies for multiplying thinking, which are common thinking styles characteristic of creative persons. These characteristics include the ability to see or think of something that has not been seen or thought by others. For example, this might involve finding a new perspective of looking at something or looking at problems in unconventional ways. This can also involve the translation of thinking and creative ideas to visual devices such as drawings, graphs, and diagrams. This strategy is an example of fluency of thinking, as is high productivity. Some geniuses who cannot express their creativity verbally can express their creativity visually and spatially.

Other examples of creative thinking strategies that educators can teach their students include: (a) making one's own new combination from conventional things, (b) ending up with a different question than what was asked at the beginning; (c) accidental discovery; (d) creating the spirit of collaboration through establishing a group dialogue; (e) clarifying one's own thinking by taking an unbiased view; (f) brainstorming possible other strategies; and (g) making connections among things that have not been previously thought to be connected, such as holding opposites together and considering their different sides or tolerating ambiguity among incompatible things.



Regarding how to effectively guide the development of creative talent in children, Torrance (1962) recommends that teachers should: (a) establish a safe relationship with their students, (b) help their students to communicate their ideas, (c) understand diversity in their students including individual differences (d) help their students to understand that their creativity is recognized, (e) play the role of a coach for their students to support them in expressing their ideas, and (f) help others including parents and peers to understand their students' creative talent and needs. In addition, Torrance (1962) believes that a creative child should be helped to maintain his creativity while avoiding an obnoxious attitude, since his values differ from his peers. Teachers should recognize that creative children usually work without stopping according to their internal creative energies, especially if they want to reach the stage of productive work. Creative children need to acquire the skills of how to be productively creative and socially acceptable at the same time.

The continued repression of creative abilities may lead the creative child to be obedient and conforming, but in the long term there will be damaging consequences to their self-image, along with the possibility of learning disabilities and problematic behaviors (Khatena, 2000). For example, a creative child's aggressive behavior might result from their failure to use creative thinking to solve conflicts and overcome tensions. The sources of these tensions may be a boring and unchallenging school system, including the curriculum and teaching strategies (Khatena, 2000).

Teachers can help creative children face these common problems by providing them with a fostering attitude, including the following: letting the child enjoy a safe psychological atmosphere; being supportive of their creative abilities; and respecting their curiosity, questioning, and discoveries even if they are wild. Giving children the chance to work alone is

important, especially since too much supervision can lead to the child's failure in reaching the productive stage of their creative process. Teachers can also help creative children by facilitating their mental health. They can teach them how to handle stress, disappointment, frustration, self-doubt, and negative reactions resulting from their peers' inability to understand their creative behaviors (Khatena, 2000).

Creative children need to have their creativity reinforced from their own inner rewards, without worrying about others' approval or expectations. This process has the significant benefit of building a personal value system so that creative children will learn to judge themselves and their own creative behaviors. Teachers can help to take care of their basic needs to support them in reaching such a creative stage. For example, the child who feels insecure cannot be creative. Teachers should treat them with sympathy for their creative behaviors rather than expressing disapproval or criticism even though these behaviors may not be socially acceptable, then teachers should help creative children to make their creative ideas socially acceptable (Khatena, 2000).

Regarding the social aspects of creativity and education, teachers can help creative children to facilitate their social interactions, including their peer relations. Teachers can show them how to avoid public disapproval and cope with tension, give them more responsibility, encourage them to become constructive, and encourage them to become reasonable adventurers by taking moderate risks. Creative children need to learn to overcome the difficulties they may face in making friends (Khatena, 2000).

Teachers should understand that creative children should be freed from any restrictions that may block their creativity. They need to be their own persons. Restrictions for these children can become sources for conflict and tension, and this can lead in the long term to mental illness.

Teachers can help children gain sufficient knowledge to recognize alternative solutions to problem and to acquire creative problem solving skills. These children need to learn how to accept failure, how to reduce their anxiety, and how to approach learning through experimentation. They need to understand themselves and their own creative behaviors better. They need to know how to make the best of their strengths, how to be unafraid to pursue in depth their love of things, and how to avoid wasting a lot of energy in unproductive processes (Khatena, 2000).

On the topic of rewarding creative behaviors, Parnes (1967) reports that there is a lack of reinforcement for creative behaviors among teachers, which prevents the full expression of children's creative energy. There is no creativity in classrooms without creative teachers. Teachers should recognize that students' intrinsic satisfaction should be the goal of creative teaching rather than focusing on extrinsic rewards. Therefore, Parnes (1967) asserts that teachers should start from the child's own abilities, interests, needs, and mind. Creative teaching, according to this perspective, is just the tool to induce the child to reach the maximum expression of these intrinsic powers so he can be his own person.

In sum, teachers can significantly influence children's creativity positively or negatively (e.g., Torrance, 1962; Armstrong, 1998; Craft, 2000; Khatena, 2000). Also, teachers have influential power to help children express their creative potentials (e.g., Torrance, 1962, 2000; Khatena, 2000), to guide children's creative talent and potentials (e.g., Torrance, 1962; Michalko, 2001), and to facilitate children's mental health by meeting children's creative needs in cognitive, emotional, and social areas (e.g., Torrance, 1962; Khatena, 2000).

The following section summarizes summary the best recommended strategies to fully nurture children's creative potentials, as evidenced from research studies. These strategies should be

highly considered in our teaching practices, and even further, to be implemented as integrated parts of our daily life interactions with creative children and youth as teachers, parents, therapists, psychologists, or any other adults who are involved in children's lives.

### **Best Ways to Nurture Creativity in Education**

Millar (2002) declares that “Developmentally, we know that children are naturally creative in their play, and afterwards become less creative as they progress through the school system. However, creativity can be nurtured by teachers who are committed to teaching creatively and who value creative thinking in children” (p. 8). Explaining further details about recommended practices, Davis (1994) holds that teachers' beliefs about learning should be fun and interesting, which will help learners to remember what they have learnt more naturally. In addition to non verbal -thinkers should be considered as verbal thinkers in the education system especially, in terms of considering creativity in the learning process.

In terms of nurturing creativity, Lovecky (2004) encourages teachers and parents to provide children with quiet places so they can move back to their daydreams. She also recommends the following practices: providing free time weekly to practice daydreams and use them in their imaginative play; giving them opportunities to learn more about the lessons and concepts that they need to learn when they are interested in free play by enriching this free play with materials that allow further learning of these lessons; helping children to develop the skills for both divergent thinking and convergent thinking, since a combination of them is a key element of the creative process; and reading to the child by a teacher, parent, or other member of the family with material that is above their reading level, which research has shown strongly

contributes to creative action. Lovecky believes that this type of reading is found to develop and enhance reading talent.

Presbury, Benson, Fitch, and Torrance (1990) and Lovecky (2004) assert the significance of providing children with opportunities to learn about their own creativity, about other creative children, and about famous creative persons around the world. From their point of view, this will reduce the pressure on children of suffering from some negative outcomes that parallel with creative process. Examples of these negative outcomes include bad moods, frustration, experiencing failures, and other negative emotions. These emotions can be associated with creativity if not positively treated from others in the society. Creative children may negatively experience feeling the self as lonely, crazy, silly, different, or as no one sharing their own interests, as a result of negative perceptions they receive from others in the society. They need to learn that it is highly acceptable to daydream, to imagine, to have imaginary play mates, to see things differently, to have their own interest that might differ from their age group's interests. They need to learn that as a child you do not have to be a copy of anyone else, that there are no wrong answers, and there is no problem if you cannot complete a project. They need to learn that the value of creativity is in the process as well as in the product, not just the product itself. They need to learn about the possible problems they might face, and learn possible solutions to such problems. They need to understand time restrictions and how to use the available time more wisely to get the best results. They need to learn more effective strategies of how they can begin their creative ideas, and where and when they can ask for help and support. They need to understand better their own creative needs, feelings, and skills, what their strengths are, and where they still need to acquire new skills. They need to understand how they can do their best to produce a creative outcome and how they can evaluate their own creative work. All

of these points can be very powerful in turning a child's early years and schooling experiences into a very delightful and enjoyable time, so children will remember them and report them later as the happy times they deeply loved when they lived their childhood and acquired lifelong learning during these golden years of development.

Presbury, Benson, Fitch, and Torrance (1990) also strongly believes that accepting and appreciating children's silly or crazy ideas and being open and responsive to their curiosity, questions, suggestions, and less-than-perfect answers helps to nurture children's creativity. Also, sharing one's own creative interests with a child as a teacher or parent, in addition to enjoying the child's interest in creative play and activities, will help share the delight of creation together. Presbury, Benson, Fitch, and Torrance (1999) also emphasize the need for adults' to examine their attitudes and beliefs about children, especially in relation to gender roles, stereo-typed beliefs, and other issues of social expectations that can significantly inhibit creativity. Children need to feel that they are loved for being different, especially if society or others do not encourage such differences in thinking or in creative expressions. And if children did not get this love for being each as a unique individual, this may put the child at risk of losing self confidence in his/her ability to create. Moreover, adults need to be very cautious in how they question a child or critique his/her work. Being judgmental is a very critical issue that can influence children's creativity negatively. Adults should give children the freedom to explore and experiment, and should praise them appropriately and support them in their frustrations or failure moments.

The ways adults structure and enrich the environment are other factors that influence children's creativity. Children need time to control their free play to enjoy working on their projects and areas of interests. Presbury, Benson, Fitch, and Torrance (1999) recommend that

watching T.V. can positively influence creativity if used in an appropriate manner. Watching T.V. greatly contributes to the visual imagination for adults as well for children, which is considered to be a noteworthy foundation for creative thinking. Encouraging children to record their ideas daily in a journal through writing or drawing are also very helpful methods to track their ideas, the level of their skills, and their emotions. Working with children's school staff members is another significant way that can help children to continue their creative development. Creative children may cause many problems in the classroom, especially if there is no educational program targeted to nurture or assess their creativity or to allow them to express their creative potentials. Parents can work with their creative children's teachers and try to figure out how to reduce the pressure on the teachers in the classroom and at the same time how to suggest learning strategies to help teachers work effectively with their creative children. Parents can also help facilitate the funding resources for the school or volunteer opportunities, which will benefit the school personnel, families, and children all at the same time. All of these actions will be for the advantage of children to continue learning and growing up creatively. Being an advocate for a child as a parent can help a child's creative potential in their early years and can educate school personnel about the nature of creative children and how to nurture their creativity with fewer conflicts and problems, and with more positive results.

Along similar lines, Goertzel, Goertzel, Goertzel, and Hansen (2004) believe that the most influential factors for creative development in children are supporting children to pursue their own interests, and helping them by guiding and re-directing their breakdown moments, frustrations, or tragedies into creative outlets and breakthroughs. Teachers and parents need to understand that in addition to structured activities, children need more free time and places to do what they want. Schools need to be more flexible, and teachers need to be more sensitive to

children's creative needs, including motivation and appreciation of the different and the unique. Teachers need to encourage more independence in learning activities and make the learning environment more challenging to students. Also, these authors recommend that enrichment hours should be increased to occur daily.

Millar (2002) also believes that guiding and supporting students to achieve excellence rather than perfection is a key principle for nurturing children's creative potential. Also, creating a learning environment that helps students to "learn something, not everything" is another key principle to guide their creative talents. In addition, Millar (2002) advocates providing reasonable boundaries and structures, fostering in children the attitude of "healthy skepticism"; inspiring adventures and fun in learning; recognizing "quiet" children with great potential; and appreciating children's diverse learning styles, abilities, and interests throughout the educational process are further key principles to cultivating creative children (p. 279).

Additionally, Freed and Parsons (1998) have discussed twelve ideas that may lead to creating an ideal school environment for right brainers. These suggestions are: require all teachers to take classes, both in college and through regular in-service presentations, on different learning styles; test all children for their learning style at the start of second grade; place children with a teacher who either has a corresponding learning style or has demonstrated that he or she understands it and can effectively teach these children; limit pupil-teacher ratios to no more than 15 to 1; provide a stimulating, experiential environment; employ longer lessons that integrate a variety of subjects; make homework more meaningful; reform testing; eliminate IQ testing; avoid retention of students; eliminate tenure; and foster more competition among schools (p. 160-183).



Offering some further suggestions, Palladino (1999) notes some teaching strategies that creative children learn from best: the use of fantasy, multisensory experiences, visual clues, learning through self-expression, and an emphasis on quality, not quantity (p. 151).

In the same direction, Golon (2004) points to the significance of the issue of learning styles in relation to creativity in children. Golon wonders:

So why is it so important to understand the preferred learning style of your children? It's about effective communication. It's about reaching forward to meet these topsy-turvy kids on their terms, on their level, in their playing field. At least until they've learned the skills to play successfully in yours. It's about giving all children a chance to succeed in the classroom, to find their place utilizing their strongest talents and gifts and to use those strengths to facilitate their learning and enjoy their future careers. (p. 11)

In a trial to understand in more depth how creativity develops in order to figure out how it can be best nurtured, West (1997) analyzed the common, shared, and most observed patterns in innovative discoverers and identified these patterns that parents, teachers, policy makers, curriculum designers, therapists, and other professionals and students' themselves need to be aware of in order to recognize, appreciate, and enhance creative behavior expressions in themselves or others. These patterns as reported by West (1997) are: missed opportunities (chances and unexpected accidents and their responsibility for creative discoveries); deep problems; deep creativity (winning awards or being famous for discoveries does not mean that these discoveries are truly ground-breaking); "regardless of everything but affinity" (flexibility in assessing major concepts or assumptions regardless of whether the idea looks initially funny were key patterns of many of discoveries); the success of failure, the failure of success (in order to reach the level of creativity that you expected, you should have more time for yourself to pursue your interests by self-directed study, so you need to be less than entirely dedicated to job tasks even if it seems that these are true success); imaginary difficulties; immediate recognition

(some discoveries that had been thought difficult to understand at their inception, but when some people instantly acknowledged their value and power and recognized them immediately, a common pattern of many of famous breakthroughs); “Let us learn to dream, gentlemen” (dreaming is one of the famous models of creative thought that was behind many discoveries, not only daydreams but also night dreams); not always “On the shoulders of giants” (mastering what others have already done in the field of discoveries is not always a true source for accomplishing advances, or taking a different direction in a field); without “Big science” (being self-taught has been one common pattern of invention; having official education or unusual resources are not always the reasons for creativity to take place); new creative possibilities (continual transformation of knowledge is necessary for more creativity, as is strongly evident in literature, which make it necessary to be always adapted for greater future discoveries; no definite organized mode to express creativity across history); the cream does not always rise (many of the most famous creative figures were not those who were succeeded in the formal education system nor those who had the best careers, but they were the ones “who are best at looking into the heart of nature”) (p. 185-204).

And finally, West (1997) stresses a significant issue related to early identification of creativity and another hidden facet of this issue, noting that:

Parents and teachers may fault schools for not teaching certain skills at the expected ages. In most cases of learning difficulties, the best strategy seems clearly to be early identification and remediation. But in some cases, where delayed maturity in some specific area is a major factor, it may be best to take the pressure off and merely wait for a while. In these cases, it may be that too much pressure on remediation of certain skills, too early, is not only wasteful but destructive, especially when the pressure comes from a heavy-handed classroom teacher rather than a specially trained tutor. (p. 172)

In summary, in order to reach the best results for nurturing and facilitating creative potential from birth to late adulthood, as educators, parents, and specialists we need to be aware of the basic facts about creativity and to adopt effective and resourceful educational strategies in our daily lives across all social settings including school and home contexts.

## **Proposed theory for new framework to understand and to work with creative children and adults in the light of present research**

This researcher presents a new theory of how creativity can be manifested by expressing diverse creative behaviors, as has been illustrated through the early childhoods of creative persons. How these creators' adult manifestations of creativity developed earlier in their lives, in their types of play and in their areas of interest, is another focus for this new understanding of creativity, as this researcher believes. For creators, their early types, styles, and forms of play, and their early burning interests in certain topics, subjects, and materials, have been shown through this research study to be significantly connected with their types and forms of creative breakthroughs in the same domains in their later adult years. (For more details, see the previous sections in Chapter 1.)

Additionally, from a comprehensive overview of all previous studies about creative persons and their childhood, this researcher observes new connections that have not previously been clearly emphasized in any previous research (in the limitation of this researcher's knowledge). This researcher concludes this hidden connection from examining the combinations and interactions of factors and conditions that influence creativity. Each well-known theory in the field of creativity or giftedness has focused only on one dimension or perspective to explain creativity.

Previous theories that discussed or contributed to understanding creativity are all different in focus; they have all portrayed a mysterious picture about creative people for many years. Now this researcher can present a complete theory of creativity, as envisioned through the light of all examples of creativity that this researcher has personally experienced or examined

through various research studies, to develop the connections of creativity from birth to late adulthood.

For example, to begin understanding this researcher's theory of creativity, this researcher has observed that Michael Kirton, "a renowned British psychologist, has developed an instrument known as the KAI (Kirton Adaption–Innovation) Inventory, which measures individual styles of problem definition and solving. Style, in this case, refers to an adaptive, building, or analogic problem-solving style versus an innovative or pioneering style. Both skills are needed for organizational problem solving" (Hipple, Hardy, Wilson, & Michalski, 2001, Characteristics of adaptors and innovators section, para. 1).

In fact, Kirton has significantly contributed to how we can understand creative persons' minds and how to effectively work with them and benefit from their unique abilities, along with those of other persons, to reach effective team work to benefit organizations and society. Kirton described how the mind operates in a creative person in an innovative style, which helps this researcher to envision how knowledge in a creative style has developed over years in creative person's mind since birth. Creative knowledge develops in the mind like the shape of a pyramid, growing block by block according to the classifications the knowledge fits into as well as its connections. These blocks are like centers of classifications, categories, and interests, which are then developed by experience and time into great blocks like the conceptual framework of a pyramid, which individuals keep adding and adding on to in terms of additional information and knowledge across life. The blocks inside the pyramids help creative persons see unlimited hidden connections among these blocks of this information network. Such a structure also helps us understand how and why creative people can see the big picture of things in a more conceptual and comprehensive way. Such a view facilitates their problem-solving skills and other creativity

skills, such as imagination, curiosity, elaboration, fluency, flexibility, etc., since they can move smoothly from block to block without following a definite order or organization of knowledge.

Other types of minds can be called the Adapters. As this researcher envisions, their minds are set up as if they had random spots or centers for applications according to tasks assigned to them, which are not significantly connected. Adding or building onto these spots is not necessary, in this case, but however more energy focuses on the details of these centers spots rather than building connections among different random spots without classification in the brain.

The following characteristics of adapters and innovators have been illustrated by Kirton:

<b>Adaptor</b>	<b>Innovator</b>
Efficient, thorough, adaptable, methodical, organized, precise, reliable, dependable	Ingenious, original, independent, unconventional
Accepts problem definition	Challenges problem definition
Does things better	Does things differently
Concerned with resolving problems rather than finding them	Discovers problems and avenues for their solutions
Seeks solutions to problems in tried and understood ways	Manipulates problems by questioning existing assumptions
Reduces problems by improvement and greater efficiency, while aiming at continuity and stability	Is catalyst to unsettled groups, irreverent of their consensual views
Seems impervious to boredom; able to maintain high accuracy in long spells of detailed work	Capable of routine work (system maintenance) for only short bursts; quick to delegate routine tasks
Is an authority within established structures	Tends to take control in unstructured situations

(Hipple, Hardy, Wilson, & Michalski, 2001,  
Characteristics of adaptors and innovators section, para. 1).

In relation to how both of these mind styles perceive each other, Kirton (1999) states:

Perhaps as a consequence, Innovators tend to be condescending to Adaptors, who can be very resourceful and come up with excellent solutions to ongoing problems, but who tend to work within the rules, to seek consensus, and to prefer change that occurs gradually. Thus Adaptors are often seen by Innovators as unimaginative, stuck, resistant to change, always focused on problems vs. solutions, and/or lacking a view of the big picture.

Because innovative solutions are less easily understood and have unpredictable outcomes, and because such break-through change is threatening, Innovators are often seen by Adaptors as undisciplined, impractical, irreverent, abrasive, and/or insensitive to people. Clearly, a better understanding of these different creative styles -- and the value of each under certain circumstances -- can lead to stronger, more flexible teams and more successful organizations. (Kirton, 1999)

Kirton's views are very valuable for informing how we should view diverse practices in all social organizations, in order to reach the best quality. Imagine, according to this view, how a teacher may view a student performance if they happen to be of a different thinking style.

Kirton (1999) classifies all people into two major groups: Innovators and Adaptors. Kirton (1999) views creative people to be Innovators. Similarly, Silverman (2002) also takes a dualistic view, classifying people into two major learning styles: a visual-spatial learning style and an auditory-sequential learning style. Silverman (2002) asserts that visual-spatial learners are in most cases creative people. So as a result, this researcher concludes that creative persons who are Innovators, according to Kirton (1999), would be the visual-spatial learners, from Silverman's perspective. Adaptors, according to Kirton's theory, are the auditory-sequential learners from Silverman's perspective. Especially if we review the characteristics discussed earlier in this chapter concerning the two types of learning styles in comparison to the

characteristics mentioned above for the Innovators and Adopters, this researcher finds a great similarity between these comparable categories according to each theory. In addition to these theories, we can also consider Gardner's (1993) classification of creative persons into two major groups: those who are human-oriented and those who are object-oriented. Accordingly, this researcher views creative persons as innovative, visual-spatial learners, who may be person-oriented or object-oriented.

Uses evidence from creative persons' childhoods and types of play, and making connections to their careers and interests as adults, this researcher has observed some commonalities, which may not be generalizable to all persons, but can be considered to be a relatively new approach to regarding creative persons as children and adults. Using evidence from Gardner (1993), Silverman (2002), Kirton (1999, 2001), Torrance, (1962, 1964, 1965, 1975), Sowell (2001), and others, this researcher created Figure (4) to summarize these observations. This evidence shows that creative persons who were at the same were late talkers in their childhoods, or who exhibited The Einstein Syndrome, as Sowell (2001) has defined it, are in most cases innovators, visual-spatial learners, and object, material, or domain oriented. Many of such creative persons have received labels such as learning disabled, speech problems, autism disorders, A. D. D., developmental delays, and others. Most of these creators were famous later on their lives with careers or breakthroughs as art performers, scientists, militarists, politicians, inventors, or other careers that are material or domain oriented. Most creative people under these categories are non-verbal rather than verbal. They can tend to be late bloomers in many abilities, which is misperceived by others as developmental delays or learning disabilities. In most cases, such creative persons face many problems in the school system and they may not be the best achievers across all subjects. They may receive poor grades or fail in school if they



do not receive support and if their needs not met, as may occur in the current school system that focuses on other groups of people. This explains why today's creative children who belong to these categories are those who received the most labels across their educational journeys and who may fail in their careers if they do not fit their interests or their creativity style.

Some examples of creative persons from the literature demonstrate this conclusion:

Einstein

Thomas Edison

Clara Schumann (one of the leading pianists of the Romantic era as well as a composer)

Arthur Rubinstein (Polish pianist who is widely considered as one of the greatest piano virtuosos of the 20th Century)

Edward Teller (physicist)

Richard Feynman (physicist)

Julia Robinson (mathematician)

Gary Becker (economist)

Ramanujan (a self-taught mathematical genius from India)

(Sowell, 2001, para. 1; Beals, 1999, para. 1)

The following is a table presented by Sowell (2001) comparing his study results to those of another professor, Camarata, to examine how many children in their samples who are all late talkers have at least one close relative who belong to engineering, science, mathematics, or any other analytical occupations fields or careers. This data in the following table demonstrates that

there is a high incidence of having at least one close family member working in such domains that belong to non-verbal activities, which may explain from this researcher's point of view why children who are late talkers have a great possibility to be working in similar non-verbal careers later on in their lives. This tendency is also evidenced above by the many famous creators who were late talkers and at the same time distinguished with their extraordinary abilities in non-verbal fields. These percentages are fairly high, according to the results shown in Table 1.

**Table 1. Respective percentages of late-talking children with close relatives in the following occupations**

	Original Study	Camarata Study
Accountants	53 percent	38 percent
Computer Specialists	35 percent	44 percent
Engineers	60 percent	59 percent
Mathematics	5 percent	17 percent
Physicians	12 percent	19 percent
Pilots	14 percent	13 percent
scientists	20 percent	18 percent
Other Analytical Occupations	5 percent*	20 percent
AT LEAST ONE OF THE ABOVE	86 percent	89 percent
TWO OR MORE OF THE ABOVE	65 percent	70 percent

\* two economists

(Sowell, 2001, p. 6)

Other types of creative persons who are innovators and visual learners but who are person-oriented tend to be early talkers, much more than the previous type of object-oriented creative persons. Also, this researcher observes that person-oriented creative people usually take careers that are verbal and human-oriented, such as teachers, psychologists, counselors, etc. They do much better in schools and careers than do non-verbal people, but may not perform the best, like the Adapters and the auditory-sequential learners. Unless they enjoy a great development in both side brain skills, left and right, they may not be the best in performance in comparison to the Adapters group.

Another group of people are fit to be Adapters and auditory sequential learners; they can be domain or person-oriented without much distinguishing, as is the case with the other types of creativity. How this group approaches their development, education, and careers distinguishes them from more creative persons. Adapters and auditory sequential learners are task-oriented

Since all children are creative by nature, as demonstrated by evidence provided earlier in this chapter, this research proposes that Adapters and auditory sequential learners in most cases are the children who have been exposed early on to social pressure begun by parents, teachers, or others to stifle their creative potentials from development and expression. At the same time, rules, limitations, restrictions, and social pressures may have been significantly emphasized, for example for following adults' rules, which led them to become task oriented in order to meet others' expectations. These students are the best achievers in the school system and the best workers in terms of following directions and expectations, in most cases.

On the other hand, creative persons--the Innovators and the visual-spatial learners--are those whose creative development has been supported since birth, starting with stimulation for the brain. Drawn to free play and exploration, these tend to be right-brained persons. When any

one tries to stifle their creative energy which has been already enriched, they tend to show abnormal behaviors that may be similar to autism, A. D. D., or other disorders. They are the ones who face many problems in schools and careers, especially those who are non-verbal and domain-oriented. But they are the most creative, who produce extraordinary inventions or ideas for the world. If we had observed this group at play in their early childhoods, if they have become inventors or chosen careers later as adults featuring non-verbal skills, their early play might demonstrate them to be focused on materials, and to be domain-oriented. In many cases this could be the domain in which they create something new later on in life. If they are famous with human-oriented activities like social leadership, we would likewise find them practicing some of these activities in their early childhood play.

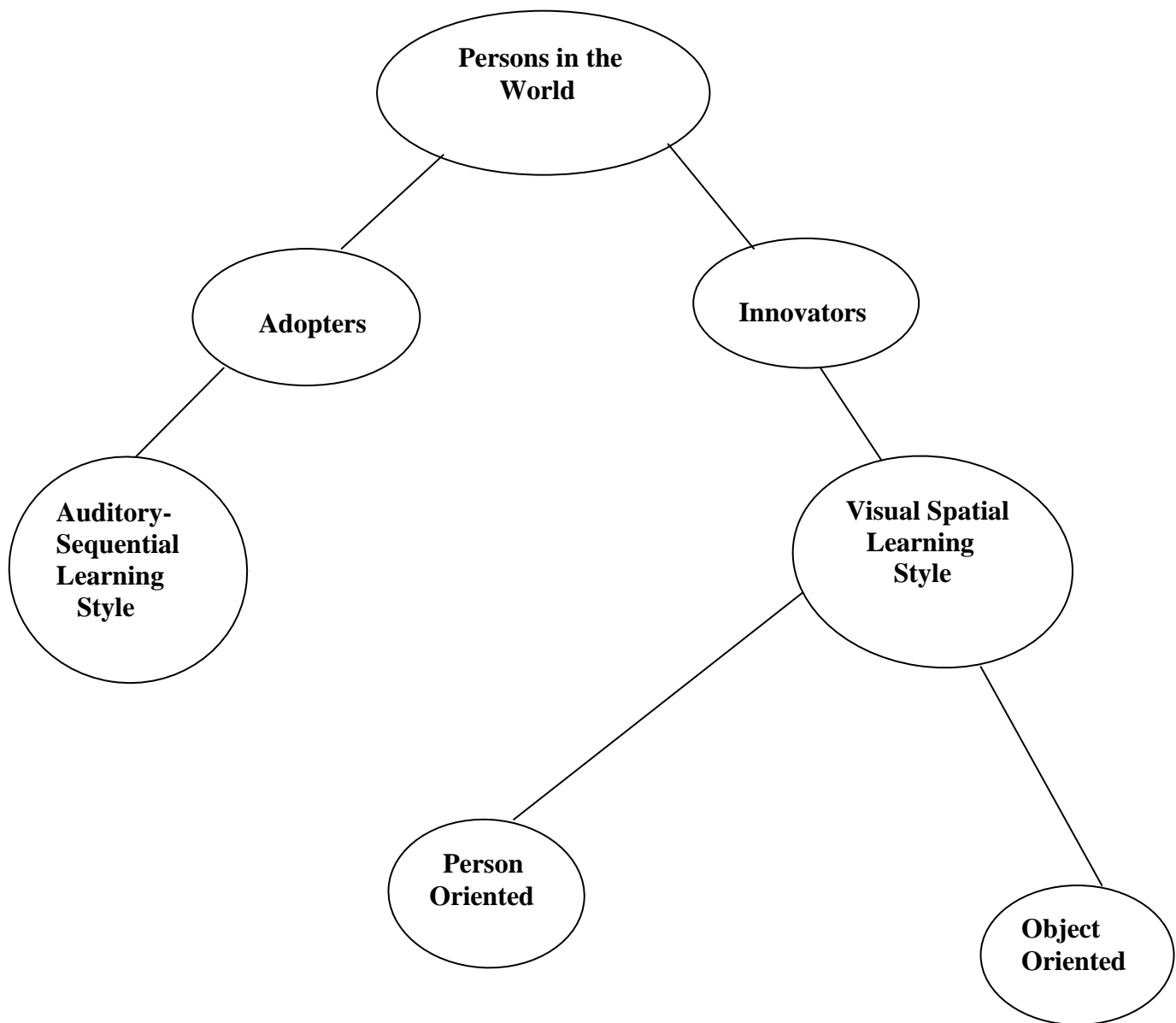
All of these thoughts and observations about the links between early childhood and later creativity call our attention to the necessity to revise our educational and career practices, in addition to looking seriously at our early career preparation programs. The evidence presented earlier about many of the inventions produced in adulthood that had been envisioned by their creators in their early years, along with the inventions that have been produced by inventors at ages as young as six and seven, also shows early childhood creativity education to be a priority. Given these newly observed relationships between childhood and later creativity, this researcher explains creativity by looking at a bigger picture that has new dimensions and presents a new profile for understanding creativity in children and adults. This researcher believes that creativity is the result of interactions between one's type of thinking, learning style, and world orientation towards human or objects, which accordingly shapes our personality style and characteristics. In sum, creativity is a personality characteristic, and the degrees of creativity vary and range from the Adaptor, auditory-sequential level, to the Innovator, visual-spatial level. We should still

target teaching for both sides of the brain, and we still use both sides of the brain with different degrees for different tasks and skills.

The critical question is: If we change our parenting approaches and practices, and we change our educational philosophy and application, how far will creativity manifestations be changed accordingly? What will new creative human beings will be like? A simple answer is that at least hopefully creative humans will not face such problems in their educations or lives any more. In addition, we all will be able to enjoy our creativity and better quality lives with fewer problems and fears.

This researcher stresses that there is a significant need to call for the following educational reform: “Education for Creativity rather than Education for Achievement”. This proposed reform is the main purpose for this research study. This researcher believes that such new educational reform will significantly influence the way we understand creativity in children and how educational programs should be enhanced, to consider creativity in all degrees, forms, styles, and levels.

**Figure 4. New Profile for Understanding Creativity in Children and Adults**



**Figure 4. New Profile for Understanding Creativity in Children and Adults, cont'd.**

### **Person Oriented Creativity**

- Creative
- Visual-spatial Learning style
- Tend to be early talkers
- Verbally expressive children
- Very early strong and advanced language skills in variety of language arts
- Strong personal skills
- Low or moderate engineering, mechanic, technological, and mathematical skills
- High achievement level in most cases.
- Love school in many cases
- They may be considered gifted children in many cases.
- Their play during childhood involves social play with other children, dramatic play that involve shows, theatre, etc.
- They are always highly emotional.
- In many cases, they love to be leaders. If they become leaders, they are very successful in influencing and manipulating others.
- Their possible careers will be any career oriented to persons such as teachers, psychologists, social or leaders, therapists, etc.

### **Object Oriented Creativity**

- Creative
- Visual-spatial learning style
- Late bloomers in some abilities such as abstract thinking, some mathematic skills, etc.
- Non-verbally expressive children
- Tend to be late talkers
- Early and advanced physical development including motor and fine skills
- Late in learning reading and writing abilities
- Demonstrate in early years low or moderate language skills including comprehension.
- Amazing engineering, mechanic, scientist, and technological skills
- They are very skilful in certain math skills, more than the others.
- Low or moderate achievement levels
- Dislike school in many cases
- Low or average personal skills
- They may receive many labels such as attention deficit disorder, learning disability, Autism Spectrum disorders, language delay or disorder, dyslexia, or other developmental delay.
- They are highly involved in playing with puzzles, computers, building blocks, and other mechanic type of play or constructions or materials.
- They do not prefer social play.
- They are not always highly emotional.
- In many cases, they do not like to be leaders and if they become leaders, they do not highly succeed in communicating and manipulating others especially social leaders but some may love military or political leadership.
- Their possible careers will be engineers, designers, scientists, artists (painters, ...or any tool oriented art), pilots, mathematicians, musicians, aeronautics, computer specialists, surgeons, mechanics, accountants, physicians, cartographers, architects, or other analytical occupations, If they work as a teacher, they will work in mathematics or technology or science teacher, etc. but they will not be able succeed in teaching or enjoyed for a long time, especially in traditional settings.

## **Methodology**

The research framework for this study includes both quantitative and qualitative approaches of research. For the quantitative research instrumentation, The Creative Behaviors in Young Children Checklist (CBYCC) was created by this researcher and a panel review was selected for content validity checking purposes. For the qualitative research instrumentation, guided interviews have been performed. The following sections provide a brief overview about both quantitative and qualitative instruments. Both research methods, quantitative and qualitative, along with their instruments will be explained with greater details in separate sections under research methodology in chapter 1 of this research study. In addition, methodological triangulation (combining of the two methods of research) is provided with further details in Chapters 2 and 3.

## **The Quantitative Research Instrument**

### **Checklist Instrument**

The Creative Behaviors in Young Children Checklist (CBYCC) was developed from the review of the literature and from this researcher's experience in the creativity field. This checklist has 265 items that represent observable behaviors as indicators for creativity in young children. The response for this checklist simply requires responding with "yes" when believing the item to be an indicator behavior for creativity, or "no" when believing that the item does not reflecting creative behavior.



## **Panel Review**

The CBYCC checklist was designed initially by this researcher to include 250 items that represent creative behaviors in young children. A panel of 34 experts was selected in order to determine the content validity of the checklist. The panel represents different experts who are experienced or professionals in children's creativity, in order to examine different views and perspectives of how creativity manifests in young children. These experts include a diverse group such as a creative parent, experienced teacher in a school context, experienced teacher outside a school context, children's therapist, psychologist, educational counselor, administrator, magician, art performer, special education teacher, musician, academic professor in the field of psychology or early childhood education, scientist, creative person, etc. The panel of experts has been chosen at the national level. Resumes have been collected from these experts. An information sheet has been designed by this researcher to organize the data for analysis purposes (see the summary of experts' resumes and experts' information sheet in the Appendix of this study).

The CBYCC has been reviewed by this panel of experts and necessary modifications have been made given consideration of the panel review results. After careful review of the experts' responses and with investigation in the literature, this researcher enhanced the CBYCC to include 265 items that either reflect creativity or may directly or indirectly relate to creativity.

A sample of 41 teachers has been selected at the local level to include teachers across all school grade levels from early childhood to the high school level. A Background Information Sheet has been designed by this researcher to collect data from participant teachers.

## **The Qualitative Research Instrument**

### **Interviews**

Interviews have been performed with 4 teachers according to their particular survey results for this research's purpose. For example, interviews were conducted with teachers who checked certain items that received the least number of total "yes" checks, or with the responders for certain other items that received the least number of total "no" checks. Interviews were conducted with the responders to the items of interest in order to better understand how teachers perceive creative behaviors in young children, and to better understand some of the misconceptions that teachers believe about manifestations of creativity in young children.

These interviews were guided by 15 or more questions (see Appendix). Each interview took approximately 30-45 minutes. At the beginning of each interview, the following were addressed with participants: the nature of the interview and research study purposes, the confidence of the responses, and the expected time to complete the interview. Each interview was audio-taped.

### **Data Collection**

Responses to The Creative Behaviors in Young Children Checklist were gathered from 34 experts and 41 in-service teachers, according to a coding system. Descriptive and inferential statistics have been applied for quantitative data analysis. Also, more in-depth information has been gathered through audio-taped guided interviews that were conducted with chosen teachers according to their certain responses to items on the checklist. Also, other qualitative data has been collected from the Teachers' Background Information Sheet and from the comment section

in the CBYCC for both teachers and experts. Qualitative analysis has been applied to the data gathered. For validity and reliability issues and to enhance the data analysis, triangulation has been used to confirm the findings.

### **Data Analysis-(Quantitative Analysis)**

The demographic variables and characteristics of participants of this study were coded and analyzed using the Statistical Packages for the Social Sciences (SPSS). Descriptive statistics such as frequencies and percentages were used to describe the profiles of participants and to report their level of recognition of creative behaviors in young children. This process was conducted for both participant experts and participant teachers in this study.

The selection of certain characteristics to be examined was according to this researcher's interest and degree of significance to reach the goals and purposes of this current study. This researcher chose these selected demographic variables after careful review of the Teachers' Background Information Sheet (see Appendix) collected from participant teachers along with the teachers' responses to the Creative Behaviors in Young Children Checklist (CBYCC). Other characteristics of participants or information that has been collected and has not been chosen for examination in this study in relation to the level of recognition of creative behaviors was still very helpful in giving a strong background and clear snapshot of experts' and teachers' backgrounds, which helped this researcher in interpreting results, discussing findings, and suggesting implementations in the form of recommendations. These unselected characteristics included the following: education content or education background for participant teachers, teachers' areas of specialization, total years of general teaching experiences, subjects taught by participant teachers, and favorite content area for participant teachers, along with resumes' and

other information by which participant experts were classified. This information included the following: the affiliation of the expert with a university, being a creative child or adult, being a parent of a creative child, affiliation with early childhood classroom teaching, affiliation to young children, affiliation to creativity or creative behavior, affiliation to children with special needs, and being a generalist in early childhood. Some of these unselected characteristics and information can be still viewed in the Appendix as contributing descriptors of participants' experts' and teachers' profiles.

### **Limitations of this research study's results**

This study has some limitations that confine the generalizations of this study's results. Examples of these limitations are as follows: participation in general in this study was voluntary, so some participants for this research were invited to contribute to this study with the purpose of representing diverse levels of creative knowledge, activity, or experience but they were not interested in participation; experts have been selected only at a national level; teachers have been selected only at a local level from State College, PA.

### **Summary of Creative Behaviors as represented in CBYCC**

1. Uncommon questions or ideas
2. Seeking recognition or prizes
3. Frequent imitation
4. Wrong starts in performance
5. Uncertainty in many cases
6. Misbehavior
7. Artless drawing
8. Sympathetic behaviors
9. Unique analytic ability
10. Unexpected frustration or anger
11. Excessive guilt feeling
12. Number manipulation skills
13. Refusing to join group

14. Rules breaking
15. Mental risk taking
16. Loving to be surprised
17. Falling asleep during activity
18. Great identification with adult characters
19. Failure to follow directions
20. Cheating
21. Distinguished verbal fluency
22. Description of things that do not exist
23. Over-activity
24. Sensitivity to criticism
25. Help, co-operation, and sharing
26. Clowning behavior
27. Magnification of certain experiences
28. Independence
29. Being very ambitious
30. The desire to surpass
31. Devising new games
32. Uncommon uses of everyday items
33. Illogical thoughts
34. Favorite ways of learning
35. Acting in a heroic manner
36. More interest in physical play

37. Fault-finding
38. Easily bored
39. Unpredictability
40. Self-reinforcement behaviors
41. Aesthetic sense
42. Lying
43. Alertness
44. Single-mindedness
45. Reading unusual books
46. Quick mood changes
47. Omission of toys' parts
48. Interest in problem solving
49. Wonder and surprise at things
50. Frustration when being unappreciated
51. Nail-biting
52. Telling fantastic stories
53. Preference of silence
54. Seeing hidden relationships
55. Effective engagement in groups
56. No accepting of failure
57. Pride of ownership and enjoyment of values
58. Fast or unclear or hesitant speech
59. Lack of interest of attending school

60. Ignorance of safety rules
61. Making unusual comparisons
62. Questions about existence
63. Becoming pre-occupied
64. Expression of own feeling
65. Interest in magic activities
66. Questioning authority, rules, or evaluation criteria
67. Attention to unusual details
68. Touching things
69. Burning interest in machines
70. Daydreaming
71. Repetitive play or practice
72. Drawing divergent emotions
73. Aggression
74. Learning blocks or disabilities
75. Loving of adventures
76. Authentic preparation and planning
77. Nervous habits
78. Physically risk taking
79. Being easily upset
80. Unique observations or comments
81. Influential decision-making skills
82. Strong memorization ability



- 83. Preference for playing alone
- 84. Taking things or toys apart
- 85. Self-criticism
- 86. Doing things his/her own way
- 87. Tricky behavior
- 88. Frequent requests for advice or support
- 89. Acts as a character
- 90. Devising unconventional solutions
- 91. Moving from one activity to another
- 92. Refusing to do assignments
- 93. Organization and mess
- 94. Hard time adjusting to change
- 95. Desire to control toys and activities
- 96. Unconventional formats when cutting materials
- 97. Devising new rules for common games
- 98. Jealousy
- 99. “why”, “how”, or “what if” questions
- 100. Difficulty in making or keep friends
- 101. Seeking affection or appreciation
- 102. Engagement in real-life experimentation
- 103. Interrupting the current activity
- 104. Sadness
- 105. Sensitivity to responsibility

- 106. Stubborn behavior
- 107. Acting out from memory
- 108. Reversing of toys' parts
- 109. Devising workable ideas
- 110. Tiredness in certain situations
- 111. Expression of reactions with sounds
- 112. Exaggerating perceptions of others' responses
- 113. Engagement in more than one activity
- 114. Awareness of missing or unknown information
- 115. Acting in a very protective way
- 116. Future orientation
- 117. Working effectively on an individual basis
- 118. Delay in any aspect of development
- 119. Self-descriptive behaviors
- 120. Loving of being challenged
- 121. Unusual curiosity
- 122. Interest in directing others
- 123. Impulsive behavior
- 124. Sensitivity to lack of fairness
- 125. Interest in leadership
- 126. Involvement in long-term goals
- 127. Regressive behavior
- 128. Unusual concerns about others

- 129. Off-limit behaviors
- 130. Unusual thinking style
- 131. Suggestions of different activities other than current
- 132. Short attention span
- 133. Continuing play after time limit ends
- 134. Body movements or gestures during communication
- 135. Acting as initiator of change
- 136. Unusual drawing for age group
- 137. Striving for perfection
- 138. Unusual interests
- 139. Verbal recalling of adult's directions
- 140. Sharing opinions or making judgments
- 141. Joking about teachers or peers
- 142. Finding new functions for useless things
- 143. Easygoing when engaged in what interests him/her
- 144. Slow pace in acquiring information
- 145. Being very proud of his/her performance
- 146. Setting own rules for play
- 147. Refusing to get help
- 148. Identification with media figures
- 149. Being defensive and ready to fight
- 150. Fond of making up surprises
- 151. Being intuitive

- 152. Unexpected responses to certain questions
- 153. Involvement with imaginary playmate
- 154. Self-focus
- 155. Unexpected mistakes
- 156. Little or no interest in others' opinions
- 157. Frustration when assigned repetitious tasks
- 158. Unusual ability to form figures
- 159. Classifying unrelated things
- 160. Depression when recognizing failure
- 161. Playing with natural materials
- 162. Solving a problem with limited information
- 163. Self-motivated behavior
- 164. Low achievement level
- 165. Critiquing others' behaviors
- 166. Being lost in certain contexts
- 167. Thumb-sucking
- 168. Thinking of impossible ideas
- 169. Unusual play or use of toys
- 170. Advanced vocabulary use
- 171. Making atypical constructions
- 172. Burning interest or deep love of something
- 173. Ignoring what is happening around
- 174. Meta-cognition and self-correction skills

- 175. Repeating the whole thing when interrupted
- 176. Concerns about being perceived as crazy
- 177. Playing back experiences
- 178. Valuing privacy
- 179. Teasing behaviors
- 180. Viewing traditional things in uncommon ways
- 181. The belief in the value of his/her play
- 182. Inconsistency in ideas or emotions
- 183. Deep involvement in play
- 184. Forming new relationships
- 185. Producing many ideas related to one thing
- 186. Changing a known story
- 187. Questions unrelated to present context
- 188. Being responsive to art activities
- 189. Showing illness
- 190. Dramatic play at inappropriate times
- 191. Dislike of doing certain tasks
- 192. Transformation of toys
- 193. Using symbols to demonstrate ideas
- 194. Observable weaknesses
- 195. Verbalization of self-feedback aloud
- 196. Preference of harder tasks
- 197. Being the first to respond

198. Shyness
199. Obsessive engagement
200. Experimentation with his/her imagination
201. Having own evaluation criteria
202. Unconsciously forgetting
203. Drawing the same object from different perspectives
204. Unusual awareness of others' characteristics
205. Uncommon ability to elaborate
206. Tolerance of missing or incorrect things
207. Laziness and slow pace
208. Acting as if a story character is alive
209. Combining parts to form novel wholes
210. High anxiety level
211. Intervention to solve problems
212. Powerful logical thinking
213. Manipulation or mastering of materials
214. Exploring using sensory impressions
215. Asking unconnected questions
216. Trouble-making
217. Playing at unexpected times
218. Preferring to play with younger or older ones
219. Skills in making guesses or hypotheses
220. Acting differently than expected for sex norms

- 221. Recalling early years' experiences
- 222. Enjoying being in charge
- 223. Forming new organizational patterns
- 224. Being ready to stand alone
- 225. Adding parts to a toy
- 226. Strong need to feel welcomed
- 227. Responding greatly to music
- 228. Self-centered perspective
- 229. Expanding the set goal
- 230. High spirits and dedication
- 231. Writing longer stories
- 232. Rich imagination
- 233. Loving of rearranging or change
- 234. Primitive behavior
- 235. Unusual interaction with toys
- 236. Having difficulty working in groups
- 237. Generalization of ideas from specific information
- 238. Persistent trial and error practice
- 239. Substitution or displacement of parts of a toy
- 240. Awareness of or seeking problems
- 241. Instant, spontaneous verbal or non-verbal expression
- 242. Confidence of his/her abilities
- 243. Acting very determined

- 244. Relaxing or becoming distracted
- 245. Playing during the delivery of instructions
- 246. Engagement actively in own play
- 247. Strong ability to concentrate
- 248. Not paying attention to the set order
- 249. Self-direction
- 250. Producing different designs or products
- 251. Performing impressively in time-limitless activities
- 252. Impoliteness
- 253. Ability to read others' emotions and attitudes
- 254. Valuing social relationships
- 255. Acting uncooperative
- 256. Problems with possessions
- 257. Difficulty focusing on fine points
- 258. Cleverness in reading maps
- 259. Being excitable at times
- 260. Learning complicated concepts effortlessly
- 261. Weakness in activities involve listening skills
- 262. Rejecting conformity
- 263. Prominent compositional skills
- 264. Fears of losing loved ones
- 265. Spending a long time in life activities



## CHAPTER 2

### *FINDINGS*

This study aims to initiate an innovative school reform movement that calls for “Education for Creativity rather than Education for Achievement”. The main purposes of this study were as follows: to explore in general the perspectives of stake holders, especially experts and teachers, on creativity in young children; to explore specifically whether teachers are able to recognize creative behaviors in young children; to identify some of the misconceptions that teachers believe about what constitute creative behavior; to identify descriptor behaviors of creativity that are observable and reflect the creative process rather than the creative product; to identify the dynamics of creative expression; and to identify the most effective ways to enhance children’s creative expressions in the school system. The following research questions were examined in relation to these research purposes:

1. What are the diverse perceptions of creativity in young children among experts and teachers?
2. What constitutes creative behaviors in young children?
3. Are teachers able to recognize indicator behaviors of creativity in children? And what are the creative behaviors that were recognized most, least, or not recognized among experts and teachers?
4. What are some of the misconceptions that teachers believe regarding how creativity is manifested in young children?
5. What are the factors and conditions that influence children’s creativity?

6. What are the relationships between teachers' backgrounds, perceptions, and their level of recognizing creative behaviors in young children?
7. What are the best ways to help children fully express their creative potentials?

The findings of this research are arranged by topics that are relevant to these research questions. Since the data analysis procedures involved both quantitative and qualitative data analysis in this research, both techniques are demonstrated in this chapter to answer each research question, including direct quotes from the participants. Questions (see Appendix) were asked of participants in order to reach answers for these research questions. For experts, questions were asked from the Creative Behaviors in Young Children Checklist, and for teachers, the questions were asked in the background information sheet, the Creative Behaviors in Young Children Checklist, and the interview.

### **Profiles of participants**

The following tables (table 1 and table 2) summarize the selected demographic characteristics of 41 participant teachers, such as position; highest education level; grade level taught; perceptions of self as a creative person; having children of their own; having a creative child of their own; perceptions of self as a creative parent, teacher, and youngster; years of formal and informal general teaching experiences; and years of formal and informal teaching of young children. For further details about other characteristics of participant teachers or participant experts, see the Appendix.

Table 2 provides a descriptive summary of some of the information related to the profiles of participant teachers, represented in frequencies and percentages. Table 3 also summarizes participant teachers' years of teaching experiences.

**Table 2: Summary of Selected Characteristics and Perceptions of Participant Teachers (N=41)**

<b>Characteristic</b>	<b>Number</b>	<b>Valid Percent</b>
<b><u>Position</u></b>		
Instructor	25	61.0
Supervisor	16	39.0
Total	41	100.0
<b><u>Highest Education Level</u></b>		
High school	2	5.0
Bachelor degree	24	60.0
Graduate degree	12	30.0
Any other diploma	2	5.0
Total	40	100.0
<b><u>Grade Level Taught</u></b>		
Pre-School	12	29.3
Elementary	6	14.6
Grades 1 & 2	3	7.3
Grades 1 & 3	4	9.8
Grades 1 & 4	1	2.4
Grades 1 thru 3	5	12.2
Grades 1, 3 & 4	1	2.4
Grades 1, 4 & 5	1	2.4
Grades 1, 2, 4 & 6	1	2.4
Grades 1 thru 5	2	4.9
Grades 1 thru 6	5	12.2
Total	41	100.0
<b><u>Creative Person</u></b>		
Yes	33	84.6
No	6	15.4
Total	39	100.0
<b><u>Children of Their Own</u></b>		
Yes	23	56.1
No	18	43.9
Total	41	100.0

<b><u>Creative Child</u></b>		
Yes	19	95.0
No	1	5.0
Total	20	100.0
<b><u>Creative Parent</u></b>		
Yes	18	75.8
No	6	25.0
Total	24	100.0
<b><u>Creative Teacher</u></b>		
Yes	33	84.6
No	6	15.4
Total	39	100.0
<b><u>Creative Youngster</u></b>		
Yes	25	75.8
No	8	42.2
Total	33	100.0

**Table 3: Summary of Information Regarding Years of Teaching Experience**

Demographic Characteristic	N	Minimum	Maximum	Mean	Std. Deviation
Years general teaching	3	10.00	15.00	12.00	2.65
Years formal general teaching	31	1.00	31.00	11.32	8.99
Years informal general teaching	24	.00	31.00	8.21	7.54
Years formal teaching young children	40	1.00	31.00	11.68	9.07
Years informal teaching young children	25	.00	24.00	7.16	6.10

**Research Question 1:**

**What are the diverse perceptions of creativity in young children among experts and teachers?**

**What is creativity? And what are its benefits?**

Creativity in general has been perceived in many different ways by participant teachers and experts. For example, participants in this research study perceive creativity in general as a rich recourse that gives opportunities for doing things in more interesting and diverse ways.

Many participants believe that it is enjoyable and fun while working through a creative process or working by using creative things or ideas produced by others. Creativity means enjoying originality when you produce your own invocative ideas that reflect your unique thinking and distinguish you with a creative self identity. Creativity is also your unique vision of viewing traditional things in a way that differs than others. Creativity is a very important life skill in

terms of problem solving and producing a variety of innovative and workable solutions to a problem. It is openness and flexibility of mind for the new, and it is a broad vision of things and ideas. Participants also believe that creativity means going beyond the norm, the standard, and the rules. It is thinking outside the box. It is the ability to use something or create with a material in many different ways. Participants viewed creativity as including many things in life. For example, it includes many domains such as art, music, dance, movements, etc, in addition to skills such as cognitive, motor, linguistic, emotional, and social skills. There are different types of creativity, such as cognitive creativity and social creativity. It is a human characteristic. It includes all age groups. It is the freedom of self expression in many different outlets, in relaxed and joyful ways. Creativity has benefits with many aspects, including enjoyment, fun, being an effective problem solver, and being unique. Its benefits also include the workplace, such as reaching organizational solutions and facilitating group performance. It helps also with creative teaching, parenting, housekeeping, and imaginatively doing any other routine job. It helps everyone to enjoy a happier and easier daily life. It facilitates diverse thinking skills and enables us to see all the perspectives and dimensions of things. It helps with enhancing our abilities as adults or children, by further expanding our self-skills and expressions through facilitating our learning proficiency. Participants in this research further perceived creativity as a way to enhance learning, experience, achievement levels and skills.

Creativity is very significant for the future. It helps with accepting and respecting diversity in people's life styles, including thinking styles, values, cultures, and creative expressions, which will lead us to further advantages in the world. It helps with producing more inventions, advanced technology, and novel teaching methods, all of which will change absolutely our quality of life. At the individual level, creativity helps give people an edge, and they can become

psychologically healthier and better adjusted in schools and workplaces. It helps with daily life's conflicts, anxiety, and insecurities. One can become calmer, easy going, and accepting, and one can feel more safe and comfortable. Creativity makes our lives worthwhile and exciting, and expands our horizons. Creativity is what a person feels and believes not how others evaluate or judge their creative expressions. It helps with personal and professional development, and building a positive self concept and image. It also enhances economic and business aspects of our daily lives. The same benefits can be accomplished at the social level; creativity can help society to have fewer problems and more solutions. Society will be more contented when many of its individuals are thinking and living creatively, which will greatly reflected in enhancing all aspects of life including even the economic level of society.

### **How does creativity manifest in young children?**

Regarding creativity expressions in young children, participants in this research study, including teachers and experts, perceive creativity for children as everything they do particularly in their play. All children are creative by nature. It is the magic key for socializing children, managing their behaviors, and teaching them. Participants also believe that creativity is a significant need which must be met so children can discover their own uniqueness and feel and think they are special. For children, creativity is the freedom to express and explore the self and the environment. There is a great creative potential in children. Children need support and guidance in their creativity processes and products to find their muse. In addition, many participants stressed that teachers play significant roles in influencing children's creativity. Also, they view creativity in children as it is manifested at different levels, abilities, and types of play. Creativity in children can be manifested in their powerful imaginations, inventive play, and



voluntary ideas. It can be manifested in the ways children do things differently; and in how they solve problems, handle situations, and figure out how things work. Creativity is observable in young children's play, activities and behaviors because it is very hard sometimes to be vocalized. There are different degrees of creative expression, and some children express their creativity easier than others. Children will not be able to express themselves and their creative potentials freely unless they feel comfortable and supported. Creativity in children might involve many behaviors that are considered or perceived by others as negative behaviors, even if they are reflecting creativity from the child's side or view. Adults usually judge children's behaviors according to the outcomes of acting these behaviors, rather looking at the processes, reflections, reasons, and goals targeted by the child.

Some participants addressed a very significant issue that is related to creativity in children and needs a lot of attention, which is the serious outcome if creativity in children has been stifled and they do not find the positive outlets to express it. In such cases, we should not be surprised when we find unwise or negative behaviors produced as a result. Some children can express their creativity in more visible ways like verbal creativity, and other children have difficulty in expressing their creativity so you can observe it clearly. Sometimes children have a non-verbal creativity which we can see if we look closely at how they do things or use materials. Some participants also noted that creativity in young children is greatly influenced with the inborn and past experiences in early years of life, including home and school experiences. The recognition of creativity in young children beginning at birth is a critical issue that influences children's creative development and expression across life. Enjoying a rich childhood, being exposed to a variety of experiences early in life, enjoying loving parental care and effective nurturing of creative potential, and participating in various creative activities are major keys that

lead to creative development and progression in children. Many participants in this research reported that creativity and its implications in the classroom need to be revised, especially teachers' attitudes, beliefs, teaching styles, practices, instruction, curriculum, and evaluation procedures. Overwhelmingly, most of the current curriculum suppresses creativity in young children. Adults' feedback including teachers' feedback is a very influential factor in fostering children's creativity, as some participant note. Moreover, managing children's creativity in the current classroom climate is one of the most common problems that teachers and children face at the present time. There is a fear that the pressure of doing things "by the book" and following so many rules have become the most important things, and this may kill creativity in young children. When children are motivated, enchanted, and fascinated with things such as how people behave or how the world operates, these are the times when children are able to create. As described by some participants, ethics and creativity are very important issues to be highlighted in nurturing creativity and managing creative behaviors in children.

### **What are some of the common characteristics of creative children?**

Participant teachers and experts stated many characteristics they believe distinguish creative children from others. They note that some creative children are outgoing, love to belong to groups including sports teams, love to play outside, and love to create games outdoors. From some participants' points of view, creative children in general are able to understand limitations, restrictions, and expectations; and they are able to come up with all sorts of fun things to do. Creative children, when they learn, they learn very well. They may love leadership--they do not just follow; they are always offering suggestions, and they are always the ones most interested in what is going on. Children who are observed to be creative are very

skillful in stimulating interest in others, including adults or their peers; they are often the initiators of new ideas, and the first who start activities and projects. They are always very excited at the unknown. They are very observant and distinguished by their minds that are open to what is new. Creative children pay a lot of attention to what is going on around them, and if they are highly interested in some topic or area of study, they frequently try to learn all the information about this topic that they can. They often build mental images of what they want to create. They may experience frustration often because their actual ability is still in a development stage that is behind their mental level of ability. Sometimes they visualize ideas or projects mentally, but they are not able to pursue or apply them because they are not physically mature yet, or they do not have the level of expertise or resources needed to put their vision into action. They often lose their minds; they are always busy, and their minds are frequently pre-occupied. Some creative children are very stubborn, while others may be very independent, quiet, shy, and may refuse to get help. They may hesitate to respond in some activities if they are aware that these activities require a skill that they have already mastered; they are the ones who in many cases state “I do not know”, or “I can’t do that” as a response when they are asked to participate in an activity or answer a question; they may respond with these statements even if they know the answers to questions or have mastered the skills for things they are asked to contribute to. It is difficult for them sometimes to understand the rules, and they may often get bored when they are not interested in the current activity. Some creative children are people-oriented; they are always proud of what they have accomplished. They always make up their own minds about things and they have their own unique judgment and opinions. They usually produce something unexpected. Some are mechanically inclined. Creative children have vivid imaginations; they always demonstrate thoughtful processes when

involved in activities. Sometimes they prefer to be alone to pursue their own interests. They are successful problem solvers; they are characterized by their persistence and they are goal oriented.

Sometimes creative children produce behavior that causes confusion. Sometimes they manifest behaviors that are similar to ADHD, and these are the most disruptive ones. Sometimes they manifest anti-social behaviors. They usually create things because they love it and enjoy the process of doing, not because they are seeking recognition. Some are artistically creative or socially creative. Sometimes they come up with cockamamie ideas, and they can be very strong willed. They can be highly self critical, and they may fail a lot. Creative children may not be the brightest ones; they may not perform well in standardized tests or they may have learning disabilities in some areas. They may cause problems if their environment is so structured and they are not able to do their own thing.

As reported by some participants, it is difficult to find one definite description to portray creative children. All of these are signs or indicators of a child's individual creative self.

### **Diverse Perceptions of Creativity**

#### ***Meaning of creativity in general***

*Teacher 8: I think creativity is coming up with a unique way of seeing situations, and answering problems, coming up with solutions, a way other than the standard, how it normally would be, the normal answers and solutions. It might just be a different way of looking at things, openness to looking at things in different ways, openness to different ideas.*

*Teacher 8: [...] I think creativity allows you to think outside the box, to break the rules and see what you can come up with [...].*

*Teacher 8: [...] I think creativity has shaped the way I do things, allowed me to think outside the box, to do different things.*

*Teacher 8: I think it's a process. Because it definitely takes a while to kind of nurture it, it's not something you just wake up and have. Everybody has creativity to a point, but not everybody knows how to express it, it's the expressing and the using of it that needs to be nurtured, brought*

out, allowed to develop. So it is a process, actually it's probably a little bit of both, process and product, because it comes partly from the environment they are in, if they are allowed to do it, to have creativity, but I would say it's more of a process, because it is something that has to be developed.

Teacher 12: [...] It's the process, not the product.

Teacher 12: [...] I think creativity is just a way of allowing, not artful, but just of finding interesting ways of doing things. Being creative is coming up with ideas on your own of how to do things.

Teacher 12: [...] My mother-in-law claims that she is the most inartistic person there ever was, but she still enjoys doing things, craft projects and things, but it is very hard for her to come up with those ideas on her own, you just have to reference things sometimes [...].

Teacher 24: [...] There are so many things involved with creativity, there are several different domains with children and learning, social creativity and how they interact with others, in their environment, there are cognitive things that are taking place, their mental capacity and creativity, dramatic play, creativity that can be expressed in movement, music, the arts, so I really feel that even in different motor skills they can be very creative, I think it really is in pretty much everything children do, in their language, and their expression of themselves, so I don't think you can just define creativity as one specific thing, "This is what it is," because there are so many other things involved. I guess if I had to come up with a definition of creativity, it would be something regarding the freedom to express themselves in a way that they feel confident and comfortable with, and that can be expressed in different ways.

Teacher 25: Creativity means being able to use materials in a variety of ways to create something, being able to look at something and see a different way of using it, in general.

Teacher 25: [...] The product is not necessarily the goal, the process is more important.

Expert 32: [...] I suppose the crux of my dilemma lies in the fact that I believe that, just as there are multiple intelligences there are multiple ways that creativity evidences itself in human beings, young and old. If the very definition of creativity is "to bring something new into existence" be it an idea, a structure, a work of art, a text, a recipe, a role-then every child is creative as this is what all children are capable on a daily basis--given the appropriate support and comfort--they create new things each day [...].

### **Benefits of Creativity**

Teacher 3: [...] It soothes the soul.

Teacher 8: I think it's very important, for children and adults, I just think overall creativity is a good thing, it helps us think outside the box, it helps us look at things in all perspectives, and I think it is the way we improve ourselves. For adults, it's the way we come up with new

inventions, and new ways of doing things, and for children, it is an added learning tool, it helps them learn and experience more than they would get out of something very strict and rigid.

Teacher 8: On an individual level, I think it helps individuals in their daily jobs. For me personally, I run a small business, I am a small-business owner, so I am constantly trying to come up with new ways of marketing, new ways of getting my product out there, and getting it accepted. I think society would be a lot better off if more people used their creativity instead of just following the rules, or going by the book, this is the way things are done, this is the way things have always been done. If people opened themselves to more creativity, then I think we would have a lot less problems in government, and trade, and all that stuff. I think everyone is so worried about following the rules, if they would just let their minds open up, they might find, "Well, maybe this way would work better". I consider that creativity. It's just kind of looking outside the rules to see what else is possible.

Teacher 8: [...] I may not have had that creative an outlet all the time, when I was dancing, but I think it spilled over into other things, like writing, and music, I had to use my creative outlet elsewhere because I was being so rigidly trained. I was like an athlete. And I did notice that among other students, students that played an instrument, or sang, or danced, or something, they always had an edge in school. You could always tell who were the top students, they always did something else, they always had a creative outlet, and the students who had trouble in school, they didn't do much, just played video games or whatever. At that time video games were not as complex as they are now, but I always did notice that, growing up, and I was always glad that I had dance, because I think it gave me an edge, I was up there with the advanced students, so to speak.

Teacher 12: [...] I think there are advantages, even in the workforce, people who are creative can come up with organizational solutions for their jobs, or I think advertising campaigns are very creative sometimes, in the way people get an idea across to someone, it might be a little out of the ordinary, I think if you're creative it would help you in your workplace, to bring on different ideas to people that they may not have thought of doing [...].

Teacher 12: In my daily life? I think it can make things more interesting, it's not so humdrum all the time. I know I have to constantly find creative ways to get my children to clean up, because they are always making a mess with toys, and you have to find creative ways to make things clean again, singing a song or making it a game, or creative ways of making the food on their plates look interesting at dinnertime, because they don't want to eat the same old thing, so we make food look interesting by being creative.

Teacher 24: Oh, number one, I think if children, as adults, are more considerate about people thinking other ways, just having a better view that it's okay for everybody to have different ideas on how to live, their beliefs or lifestyle, to be more accepting because they have been more aware as they grew up, that people have different thoughts, and it's okay to have different ideas about how to reach the same goal in the end. So I think that would be a benefit in the future, maybe it will make a happier community and a happier world if people are more accepting of new ideas. I think technology could always advance and change the way we are doing things, the computer age has just been phenomenal the last few years, the things we can do with the

*children in our own classrooms, with the different programs, so I hope that in the future good things will come of that, just being more accepting of people's ideas.*

*Teacher 24: Yes, I think that children do need to be creative, and I am thinking right now as an adult, with technology the way it is today, and there is all this emphasis on learning things quicker, faster with computers, not that I am an expert in those fields, but I think that people are always trying to come up with better ideas, and that it's important for them to be creative, and able to do that, and to come up with ideas, and I am thinking of commercials now, where they need to be creative and do something unique, eye-catching, appealing to people. For children, I think it's important for them to be creative so that they can identify their own uniqueness. One of the things that children always ask is, "Will you draw something for me? I can't do it. Will you draw me an elephant, or a butterfly?" And I always stress with them that no matter what they draw, it is yours, it is very special and unique, and if you want it to be a beautiful butterfly, then it is. What I draw will be what I see, and we may not see the same thing. So I don't want to draw for you. And years ago I always felt that I couldn't draw. I always felt that was one of my limitations, that I am not creative, I cannot draw things well when I compare (my drawings) to those of other people, but I have learned, through experiences with the children and through education, that it doesn't really matter, it comes from your heart, it comes from your own feeling of what is important and what you want in there. So now I think everybody is an artist. So I think it was a matter of growth for me to understand that.*

*Teacher 24: Yes, I've become more free, with my own children and the children in my classroom, and myself, to be able to express myself in different ways, and not really worry so much about how other people are interpreting me, or evaluating me, it's how I feel and what I believe.*

*Teacher 24: [...] I think that is part of being creative, is giving them the freedom to do that. So again, I think in my own personal ways, I am becoming calmer, and more accepting, not just with my boys but even the kids in my classroom, helping them to be more creative and do a little more exploration on their own, before I jump in and give them the answer. So I think it has affected me personally.*

*Teacher 25: Art in general, you mean? I would say that art is what makes life worthwhile. Without art life would be very unexciting. That's why you live, I think, to be able to appreciate art, dance, music, it's what makes it worth working, to be able to go home and relax and enjoy things like that. I think that is the importance of art in our society.*

*Teacher 25: Well, my husband is a musician, and I have some hobbies too, that involve art, in my life every day, I always listen to music, I am learning to play the guitar again, I make these little eggs with wax on, so art is a part of my daily life.*

*Teacher 25: I think it's possible to go through life creatively in the way you deal with people, in your social interactions, we do conflict resolution with the kids, we try to work out problems with them, and the important thing is for the kids to come up with different ways to solve problems, and there is creativity in that, it's not always, "Oh, this is the rule and we have to follow it". It's okay to say, "We've got a problem here, how are we going to solve it?" And the kids will come*

up with different solutions than an adult might have, and that is a part of creativity, being able to think outside the box.

Teacher 28: Yes (I was a creative youngster), when I felt comfortable I was creative. I was a little shy and did not like to take the lead. But I started dancing and realized how much I loved it and my insecurities seemed to go away. My love for dance expanded my horizons and made me more creative and outgoing. I was always dancing, singing or acting.

### ***Creativity in Young Children***

Teacher 3: Yes. I always questioned everything. My inquisitive nature only lead me to a greater thirst for knowledge, and that knowledge allowed for the expansion and elaboration of stories and images created by my imagination. I was always doing some type of construction of raw materials into something greater. I designed my own clothes for my dolls, I built games and boxes for things from wood, I had a secret play space in a tree (which had many names over the years) between my house and my best friend's house, a dirt mound could be a castle, or a mountain, or a spaceship (but it was never just a dirt mound). When I was in 10<sup>th</sup> grade I even got accepted into a writing college (\$ prevented that one). I did not get to go, but I never stop dreaming and creating. [...]

Teacher 6: I always loved making things and always had interests that lay a little outside the realm of my peers.

Teacher 7: [...] I believe that each child has enormous creative potential. What has happened to him or her in the past and what is happening to him or her in my room has a strong cause and effect relationships to what I see daily as far as the "creativity" that he or she may demonstrate. In other words, a child born with a heavy "does" of creative potential who has experienced frustration at home when presenting alternatives to the "normal, accepted" ways of relating to materials or other people, may act stiff, seek continual praise, be envious of other children, etc. by the time I see him or her [...].

Teacher 7: Yes-all of them (my children) are creative. My daughter is musically creative [...].

Teacher 7: [...] My son in spare time creating vehicles from sheet metal stage[...].

Teacher 7: [...] My other daughter draws and plans landscaping designs.

Teacher 7: When I was growing up, our family had no t. v. until I was in 5<sup>th</sup> grade. My fondest memories are of "creative" activities: making sewn tiny doll clothes with my grandma-or toys for my baby brother; finger painting, outside on our side porch; pounding weeds and green growing vegetation between two rocks and moving it to jars, mixing it with brook water and blossoms to change the color, etc. all fun.

Teacher 8: Just the way they come up with things. The way they come up with solutions to problems that are given to them. If you give them a task, just seeing how they go about doing that task. Like if you give a kid a task to do, and there is the obvious way of doing it, and sometimes a



*kid will do something not obvious, they'll do something a little different, but it still accomplishes the requirements of the task. And I think it's showing...it's hard to vocalize, but I think it's something you notice, it's a way that kids handle situations, the way they handle things.*

*Teacher 8: I think all children are creative, but some children have an easier time tapping into their creativity than others [...].*

*Teacher 8: Yeah. I think all children are creative, but some kids have more ability to express it than others.*

*Teacher 8: To a point. I think it depends on the effect the creative behavior has on the outlet. Like my brother taking apart his toys. It was good creatively that he was trying to figure out how things worked, but it was bad because he had more broken toys than fixed toys. So, I think if an outlet turns negative, like drawing on the walls or something, it could be out of frustration that there is a creative element trying to come out, trying to be expressed, but it's not being allowed to be expressed in a creative way, or the child himself is having trouble expressing the creativity, expressing what is going on. I don't know, I think the creativity itself is not a bad thing, but the outlet and the results might be a little bit dangerous or unwise, according to how it affects other people. Some kids might think that knocking a kid over the head with a toy is creative because they want to see what happens when they do that. But I wouldn't call that constructive behavior, even though the child is just curious as to what the result will be. What happens if I hit someone with a stuffed animal or I hit someone with a block? They are trying to think outside the box, so that fits my definition of creativity, but it's not always the best idea, and it certainly is not behavior that ought to be encouraged.*

*Teacher 10: Yes, as creative as any normal child, I remember making up dance routines, maps of the house, loving to pretend in playing house, jungle safari...without prompting from an adult.*

*Teacher 12: [...] There were a good handful of them who were more creative than others [...].*

*Teacher 12: [...] if you see a child coming up with ideas unprompted, even in their play, having a good imagination, going over to the easel and drawing something they enjoy, and also finding different ways of doing things [...].*

*Teacher 14: Yes-they are (my children) are all creative in some way or another... play activities, arts and language, and also music.*

*Teacher 16: Yes, (my children are creative) make original creations-paintings, clothing, web sites, etc.*

*Teacher 20: Yes, (my child creative) likes to do crafts and make things on her own.*

*Teacher 20: Yes, I used to love to write stories. I wanted to be a writer in elementary school.*

*Teacher 21: Yes, I consider both of my children are creative, because of their ability to articulate; express feelings, ideas through a variety of modalities.*

Teacher 22: Yes, My son is very good of drawing detailed pictures. He has been drawing since about 3 or 4 years old. He is 8 now. He is very good at sculpting things with clay also. He is very visual.

Teacher 24: Oh, no. I do feel there are different levels of creativity. I think some children are very comfortable expressing their creativity, whether it's through imaginative play, or writing and drawing, and I think some children are maybe uncomfortable doing that, I can think of one little boy in my class, where every time, we are talking about the heart right now, and he was doing some paintings, and I said, "Oh, your paintings are really cool, because you're using the red and the blue," and I said, "That kind of looks like a heart to me, what are you making?" And he said, "Oh no, I can't make a heart. I don't know how to draw that." And I said, "Well it looks to me like you've painted a heart!" He's one of those children who will come up and say "I can't," or "I don't know." He is pretty independent in certain aspects of learning. I don't know if he was brought up that way in his home environment, or if it is inborn, that he doesn't really feel able to express himself, I don't want to say that he is less creative, because I'm sure that he is creative, but we just don't see it, it is not as visible as with some of the other children in our classroom. Whether it's verbal expression, or using some of the materials that he may use. So I do feel that all children are creative, but I think some children are able to express their creativity more, so that we can see it and witness it.

Teacher 24: Yes, use of imagination and creativity with such things as: legos, drawing, and dramatic play.

Teacher 24: [...] There are so many things involved with creativity, there are several different domains with children and learning, social creativity and how they interact with others, in their environment, there are cognitive things that are taking place, their mental capacity and creativity, dramatic play, creativity that can be expressed in movement, music, the arts, so I really feel that even in different motor skills they can be very creative, I think it really is in pretty much everything children do, in their language, and their expression of themselves, so I don't think you can just define creativity as one specific thing, "This is what it is," because there are so many other things involved. I guess if I had to come up with a definition of creativity, it would be something regarding the freedom to express themselves in a way that they feel confident and comfortable with, and that can be expressed in different ways.

Teacher 25: I think there is a great deal of potential, I think all children are creative, they need help sometimes in finding their muse, or finding what sort of creativity suits them, and I think that's where teachers come in, they can introduce children to different ways of expressing themselves, even block-building for future architects, but they need to find their medium, the art that suits them, the creative outlet that suits their personality.

Teacher 25: I think different people are creative in different ways. Some children are more creative in dance, others are good with their hands, or with small things, so I think each child is potentially creative, but in different ways.

*Teacher 25: I guess if children are able to take materials and do something different with them, and that is another thing that children are not always encouraged to do, they will be told, “The lesson is this”, but a child will take that lesson and expand on it, do something else with it, and that is creative, to try something new, I don’t think that should be discouraged. It is hard for kids to stay on task sometimes, but they have to do a certain amount of it to be able to use materials in a way that is different.*

*Teacher 25: Yes. He (my son) is a performing musician.*

*Teacher 25: Yes. (as a creative youngster) I liked to draw and played clarinet through high school.*

*Teacher 25: In my opinion, all children are creative and most of these behaviors (behaviors in Creative Behaviors in Young Children Checklist) have been observed in children who are very creative, the task, as I see it, is for the teacher to recognize that all children are creative and it is up to the teacher to help each child find his/her means of expression.*

*Teacher 26: Yes (as a creative youngster) I used my imagination a great deal and role-played a lot. I also made up poetry. Loved to play with dolls and paper dolls.*

*Teacher 27: I was a creative youngster. I had a large variety of experiences with nature, insects, animals, and people of all ages. Rich childhood, loving parental care. I danced as a child, drew pictures, wrote stories, loved books, and horses, sang in children’s choir, loved play acting and dramatic play.*

*Teacher 28: Yes, they (my children) are both very creative and imaginative. They both (3 and 7 years old) love to make crafts, dance, sing, read and listen to music among other things. All children are creative if you find a way to bring out and nurture their creativity.*

*Teacher 28: Yes (I was a creative youngster), when I felt comfortable I was creative. I was a little shy and did not like to take the lead. But I started dancing and realized how much I loved it and my insecurities seemed to go away. My love for dance expanded my horizons and made me more creative and outgoing. I was always dancing, singing or acting.*

*Teacher 29: Yes, My son is very creative. He writes poems and stories. Enjoys learning musical instruments, makes up his own songs, writes comic books, draws cartoons, builds with blocks and Legos, invents things using discarded materials around the home and loves to read books!*

*Teacher 29: Yes, (I was a creative youngster), I played make-believe constantly. I wrote stories and poems, made dolls and such out of paper, danced and sang, wrote songs, invented games and languages and loved to read! Also played violin.*

*Teacher 30: I think I was pretty creative, I did not really have a lot of kids my age to play with so I spent a lot of time pretending and making things to occupy my time.*

Teacher 31: She (my daughter) is 3 yrs old and it is difficult to judge creativity at this age. She is highly intelligent and plays well by herself. She speaks with her animals/dolls, she draws, sings and writes her own songs. For her age, these are probably creative signs.

Teacher 34: Yes, imaginative as a child (as a creative youngster).

Teacher 34: Yes, vivid imagination and play acting (my children as creative.)

Teacher 35: Yes, they (my children) are imaginative-vivid imaginations. One is an excellent problem solver.

Teacher 35: Yes, (as a creative youngster) loved playing imaginary games, acting out stories, making up plays.

Teacher 36: Yes, (as a creative youngster) played with mud, snow-forts, etc.

Teacher 37: I think I was a very creative youngster. I used to write imagination stories creating characters from my own head. I also used to play games with friends full of imaginary things (e. g. house) and plots. My mind would also often wander through fantasy lands and such.

Teacher 39: Yes, I consider my son to be a creative child. He is very open to new ideas, interested in exploring things and can express himself in a variety of ways (art, writing, music, etc.)

Teacher 39: Somewhat, I can remember being concerned with others' expectations and wanting to do things "by the book". I do not recall having many opportunities to be creative in my elementary experience. I believe that it was not until high school that creativity was encouraged. I can recall my parents encouraging and allowing me to express my creativity.

Teacher 41: I believe that every one, young and old, have some kind of creative side to them. You just have to look for it.

Teacher 41: Yes, (I consider myself as have been a creative youngster), because I grew up on a dairy farm and my family did not have many luxuries. So my brother, my sister, and I had to use our imagination to play with what we could find. My sister and I also made up silly games to make our chores more fun.

Expert 23: [...] The thing is, I find most kids are creative and the point is how to bring it out of them. I do think that most curriculum activities stifle creativity in children.

Expert 32: [...] If the very definition of creativity is "to bring something new into existence" be it an idea, a structure, a work of art, a text, a recipe, a role-then every child is creative as this is what all children are capable on a daily basis-given the appropriate support and comfort-they create new things each day[...].

### **Characteristics of Creative Children**

*Teacher 8: I like to think I am a creative person in that...(laughs)...I always tell people, "I don't live in reality!" I have always had my head in the clouds, so to speak, I have always been involved in music, even when I was just starting to learn how to play the piano, I used to play the song that I was supposed to play, and then I would try to make up something else. I would try to make up another part of the song, like, "Oh, this might sound better attached to It," or "I don't like the way this sounds, I want to play it this way", and even if something I came up with didn't sound right, I was proud of myself because I was able to come up with something different. I used to write poetry, though I don't do that so much anymore, it's just the way my life has turned, I don't have time for it anymore, and I have always been involved with dancing, I grew up as a ballerina.*

*Teacher 8: [...] Nobody ever said that any of the stuff I did to classic rock music was bad, they just said it was not what they expected, not what they thought a point dance would look like [...].*

*Teacher 8: Dance is my creative outlet, at the moment, my choreography and my teaching.*

*Teacher 8: I used to (consider myself to be creative and write).*

*Teacher 8: As a child, I had a very active and vivid imagination which led to creative role-playing and telling stories that eventually became writing stories. I would invent characters to add to my favorite stories and t. v. shows. My other family members were often more mechanically inclined, and I often found myself trying to take the things they took apart and use them differently.*

*Teacher 11: Both of my children demonstrate thoughtful processes when engaging in a variety of activities.*

*Teacher 12: I would say that they are all creative, but to different degrees. I mean, a child's mind, when they are so young they can come up with all sorts of fun things to do, and they learn so well. I think some of it just comes more naturally to children than to others.*

*Teacher 12: They're leaders. They don't just follow, they'll sit down and say, "Hey you guys, let's do this or that today," or they'll go to the color and cut table and be the first ones to start an art project and get the other kids into making something for the mural. They are always most interested first in what is going on in the room, and they will draw the other children into what they are doing.*

*Teacher 12: I don't think it's only that. I think they have leadership ability in the classroom, they were always open to new ideas, if we were switching themes, they always got excited about what was going to happen next, especially if it interested them. There are a lot of things that can be indicators. These kids are very observant, always paying attention to what is going on around them, these are the kids who will be reading this year. They take in all the information they can.*

Teacher 12: Well, I am thinking of my own son now, he is so creative sometimes that when he is working on a project, maybe just making something out of a paper towel roll, in his mind he has a picture of what he wants as an end product, but he gets very frustrated, because he knows what he wants to do, but physically, his little body, he can't do it, he doesn't have the materials or the fine motor skills to carry out the task, and he flips out, just loses his mind, screaming and crying, "Oh, I can't do it!" I think sometimes his brain is moving so much faster than his little body can keep up with, so I have to calm him down and say, "Okay, what did you want to do?" He'll say, "Oh I want to make it into this or that..." He has to learn to accept help from other people, that is difficult for him, letting me help him, he wants to do it all himself because it is his idea. It is frustration. He is creative and he has ideas, but he doesn't know how to get from A to B.

Teacher 12: [...] My son is six. He is always making something, always busy [...].

Teacher 12: [...] Writing stories, drawing pictures, making lists of things he is thinking about, loves to build really cool stuff with Legos that he makes up in his little mind [...].

Teacher 12: [...] Some of the creative kids in my class, they were the leaders, but others held back, were quiet and shy.

Teacher 12: [...] Some of the kids in my class are very outgoing, the creative ones, but my son, socially, there are 12-15 kids on our block, and 75% of them are girls, and he has adjusted to that, but among the other boys, he's not always the first one to jump out and say, "Let's do this," sometimes he is, sometimes not.

Teacher 12: It depends what is going on. If it is something new, he will not be the first one to step up and try it. There is another boy on our street who would do that. But at school, he did like to be the first one if it involved reading or something that he could do, and he knew he had mastered it and felt comfortable with it, he would be the first one to act, to read the morning letter or whatever they were doing that day [...].

Teacher 12: I think creative children, and kids who love what they are doing do it because they love it, not because they want to be standing on a stage with a certificate and be the first one or be the best. I think they just do things because they enjoy what they are doing, not because they seek [...].

Teacher 12: [...] Sometimes creative kids, if you give them a rule and say "This is how you do it, this is what I want you to do, they may not understand what the rules are [...].

Teacher 12: [...] He likes people, he is very interested, he has some strong relationships with our family members, our extended family. He's a people person.

Teacher 12: I found myself thinking a lot of my own son, age 5 (kindergarten) while completing this survey (CBYCC), as I have spent much more time with him than my pre-school students and I think he's pretty "creative".

*Teacher 24: [...] They are also very outgoing, and belong to a lot of sports groups, they love to be outdoors and come up with different games to play outside, so I think there is a nice balance there, they understand limitations and restrictions. They know that we expect them to do well in school, and perform at home [...].*

*Teacher 35: Many behaviors are personality-some creative children are very outgoing, some are shy. Some are leaders and problem solvers. Some have no interest in leading and prefer to be left alone to pursue interests [...].*

*Expert 15: [...] A creative child may express him/her self in some behaviors because of confusion-however those behaviors do not necessarily mean the child is creative; they may simply be confused [...].*

*Expert 25: It seems that many of the characteristic described in the survey could relate to kids who are ADHD. These kids/many times are very creative but also can be quite disruptive. In the classroom a balance must be reached to maximize participation for all the kids. If a kid is derailing the activity for the group, his behavior cannot be tolerated. I think creative kids who have behavior issues can learn to interact with their peers and still express their creativity. We do not want to promote anti-social behavior under the banner of "creativity", and neither do we want to squelch individuality. The key, in my opinion is to strike a balance between encouragement of creative ideas and classroom management.*

*Expert 27: I began to just read to see if there were particularly any I would say no to. I have realized I am looking at each of these as a characteristic of a child and that any could be parts of or signs of a child's individual creative self [...].*

*Expert 31: I feel there is not one description of a creative student. It could be the quiet one by themselves. It could be the one always in charge of his group. It could be the most intelligent one in the class. But often is not the brighter one. Even a student with a learning disability could be very creative in other areas. When working with pre-school and primary it is difficult to determine what student is gifted or is he just "advantaged" by interventions. It is difficult to say is a child is a discipline problem or using his creativity.*

*Expert 32: I believe creativity shows itself in a myriad of ways-through the ability of a child to be enchanted, delighted, fascinated by any number of things, to have curiosity as to how things work, how people behave, how the world operates. They may have a keen sense of interest in one or many areas. They have the capacity to think on their own, to accept new ideas, to pretend and to imagine beyond reality. They may be flexible and take risks or they may be focused and observant before trying something new. They would be able to find many answers to one problem or to create one single new method of doing something that has never been done before. They would be able to build on interests. They would explore-the outdoors or one new toy. They would have the ability to play-that is really all it takes and that is something that I believe each human being has inside of them and that is at it's "freest" point in the young child [...].*

## **Research question (2)**

### **What constitutes creative behaviors in young children?**

Participants in this research identified creative behaviors as the ability to offer one's own opinions, answers, and questions; to have one's own ways of doing things and pursuing a burning interest in something; to try to reach one's own goals while seeking for perfection. Some children try to achieve their own goals through working very hard and by adapting other positive behaviors, but in other cases creative children may approach their goals by demonstrating lying, cheating and other negative behaviors. As reported by participants, creative behaviors means producing something unique and does not involve imitation; it could be something as simple as finding a solution for a problem. Creativity occurs when children feel comfortable to express it; it is something that the child puts their whole heart and soul into, put a lot of feelings and emotions into it. It might be something the child construct or something he/she displays. Other definitions of creative behaviors, as described by participants, are the tendency to do things independently and without anyone else taking charge. Creativity is a lot of freedom. It can be a lot of self expression through drama, facial expressions, and movements. It is how you think and process what you are doing. It may mean finding a new function for useless things. Creative behaviors denote and reflect creativity. Some of these behaviors are precursors that make up creativity (ie., they must be present if one is to be creative) and some might be outcomes of being a creative person. Some creative behaviors might reflect confusion from processing information in a different way. These are the diverse definitions from teachers and experts regarding what constitutes creative behaviors.



## **What are some of the examples of creative behaviors?**

The following are creative behaviors as reported by participants in the qualitative data. These subsequent behaviors have been noted to be connected with creativity in children. Some of these behaviors have been directly mentioned as associated with creativity, and some have been indirectly reported through examples or telling stories of experiences. There are only three behaviors have been reported by a very small number of participants as not correlated with creativity from their point of view. These behaviors are: acts as a hero; sympathetic behavior; and being skillful in manipulating numbers. These results may differ from findings reached by analyzing the quantitative data, as it will be presented in a later section.

Creative behaviors that are considered to be indicators for creativity in children as reported by participants are: taking toys apart or breaking them; unusual curiosity; discovering things; drawing on the walls; aggressive behaviors; coming up with new ideas; using materials in many different ways; going beyond the expectations or the norm; difficulty in staying on task; perceived self as disabled or as lacking knowledge or experience; imaginative play; adding new things or suggesting unusual ideas; problem solving; artistic drawing; writing poems and stories; lack of self-confidence; going beyond the rules; producing a new structure, recipe, text, or role; elaboration of stories and images; questioning attitude; constructive play and creating new things from raw materials; unusual interests that differ than age group and peers; love of manufacturing things; day dreaming; creating new designs; having a private play place; being jealous of other children; acting stiff; continually seeking praise and recognition; dramatic play; creating maps; creating new music, movements and dance; free expressions of feelings and emotions; creating

modalities; ingeniously playing with musical instruments; being very independent; making original creations and inventions; innovation in using language, communication or art including crafts; sculpting things with clay; being a visual learner; paying attention to details; love of reading books, playing with nature; playing sports; shyness; enjoying knowing people; talking to one's self, animals and toys; experimenting with materials; opening to new ideas offered by others; high anxiety and insecure feelings; silly ideas, questions, and games; using free or spare time creatively; loving of jokes and drawing cartoons; acting out stories, creating characters and making up plays; powerful and keen observations; learning on one's own; screaming and crying a lot; difficulty in following directions and rules; anti-social behaviors; lying, cheating, stealing or robbery; disruptive behaviors; disrespectful behaviors; unintentional damaging of materials and things; forgetting safety rules while involving in their interest activity; strange behaviors; getting out of control; tweaking things; being bored; powerful ability to memorize past events in early years of life even when very young; getting hurt a lot; unintentionally forgetting; physical and mental risk-taking; loving to know people; sense of pride of what have been done or accomplished; facial expressions and body movements; playing outside a lot; making forts and hiding places; being a leader; preferring to be alone; outgoing with people; spending a very long time in doing activities; building structures with blocks; unusual curiosity; finding new functions for useless things; off limit behaviors; deep involvement in life activities; low achievement level; illogical thoughts; failing a lot; stubborn behavior, laziness; falling asleep; having favored ways of learning; high level of anger and frustration; high level of excitement; more interest in physical play; having learning blocks or disabilities; nail biting; making artless or unstructured drawings; misbehavior; trouble making; going beyond sex norms; doing one's best to reach professionalism; fault finding; self reinforcement behaviors; difficulty in making friends;

uncertainty; unclear or hesitant speech in certain situations; surpass other peers; problematic behaviors; making mistakes; worrying of being perceived as crazy by others; sadness; regressive behaviors; refusing to join group activities; preference for silence; frequent imitation of others; wrong beginnings of activities; burning interest in machines; touching things that are not supposed to be touched; teasing behavior; thumb sucking; verbalizing self-feedback aloud; inattention; using sensory exploration; and showing illness in certain activities.

***What constitutes creative behaviors in young children?***

*Teacher 1: [...] Yes, because I played outdoors a lot making forts and hiding places. I relied on my imagination a fair bit [...].*

*Teacher 2: Yes, he is two and half years old: pretend play, art, and very proud of his accomplishments-the way he expresses himself.*

*Teacher 8: Being able to offer their own opinions, or offer their own answers to questions without being prompted or given hints about what answer is being looked for.*

*Teacher 12:[...] They want to do it their own way, that's what my son often does, I tell him to do something a certain way, and he'll say, "No Mommy, it's supposed to be this way!" Not out of disrespect, but maybe kids have a better idea, or they don't understand the directions.*

*Teacher 12: I think kids who cheat are kids who don't want to work hard at what they are doing. If they want to be that perfect, or they want something so badly they have to cheat to get it, I just don't think that's fair. It's wrong. Maybe a creative person could think of another way, by cheating, of getting something, but I don't agree with it.*

*Teacher 12: [...] Kids carrying on their own conversations while I am talking. It's just disrespectful, but if I have a group of kids sitting on the floor and they are chit-chatting away with their neighbor because I may have said something that sparked an interest in them and they have their own thoughts about it and need to share it with someone, it is interrupting during the class, something really minor [...].*

*Teacher 12: [...] Maybe people need to have things in their life and they can tweak it with being creative and cheating [...].*

*Teacher 12: [...] I'm thinking about my own kid here, he does some strange things [...].*

*Teacher 12: Sometimes he'll get out paints or glue or scissors and cut stuff, paint stuff, damage stuff in the house, unintentionally, just because he wants to do an art project, he gets these ideas that he can cut up things that aren't meant to be cut up [...].*

*Teacher 12: It's not terribly bad, on a higher level, you see movies all the time about people who find creative ways to rob banks. I am not at a level where I can understand that, but kids are fine.*

*Teacher 12: [...] Aside from ruining things in the house with art projects that get out of control [...].*

*Teacher 12: [...] My son, if he's got an idea in his head that he wants to go do something, or go somewhere, and I'll ask, "Did you clean up your room?" "Yes, Mommy!" so we can go and do that thing or he can get a reward. So maybe this award or recognition thing is creative when you combine it with lying, I don't know.*

*Teacher 12: I don't think I have ever observed that, but I can see how a child who does that might just be bored with what we are doing [...].*

*Teacher 12: Well, my son, he gets these cockamamie ideas in his head that something can happen a certain way, "I can do this," it's all right, and sometimes it's not, as part of a project or a plan he has to do something.*

*Teacher 12: Yeah, the things he says, "Well, all kids do that," and the things he remembers, that happened maybe once, years ago, he talks about it like it was yesterday, out of the blue.*

*Teacher 12: Um hmmm....He's hurt himself because he is jumping around, or sometimes he is so involved in what he is doing he hurts someone else, like my daughter, unintentionally. I don't think he ignores safety rules, but the activity at hand becomes so important that he forgets sometimes. He's on a scooter, flying down the street, and he's having fun, then he puts his foot down to stop and shaves off half his shoe. I worry that he is going to fall down and get hurt because he's not watching the cars, he's not watching the other kids on the sidewalk, he's so involved with taking a ride.*

*Teacher 24: To me it would be something unique, something that maybe no other child has done before, so they are not imitating another child's words, or drawing, or building structure, so I think it would be something unique. And I think it would be too something that they are comfortable expressing about it, they put their whole heart and soul into this, whatever it is that they're constructing, or whatever they are displaying that could be creative. I think a lot of feelings and emotions go into creativity, if they have done something they are really proud of, I don't know if it is something as simple as putting on their own coat! There are some creative styles in putting on our coats! But if they are proud of the fact that they did it, and if they were able to do it independently, without having another teacher or child taking charge, so I think those are a couple of things that would show creativity.*

*Teacher 24: Again, there is a lot of freedom, a lot of self expression, I see a lot of children, and how they express themselves, they move their hands, and you can tell by their facial expressions, when they are creating, and there is a lot of drama too, we do dance and movement too. There are some that will do the movement and that's it, and others who will really get involved, and you can tell they are really thinking and processing what they are doing, so that is a common thing that I see, and also a sense of pride that the children have done something that they feel is creative or unique, that they have done or can show.*

*Teacher 25: It can be something as simple as finding a different solution to a problem, that is creative, but that is more socially creative than artistically creative. I am not sure how to answer that.*

*Teacher 35: Many behaviors are personality-some creative children are very outgoing, some are shy. Some are leaders and problem solvers. Some have no interest in leading and prefer to be left alone to pursue interests [...].*

*Expert 11: Many of these (creative behaviors) depend on the child's particular domains of gifts and talents.*

*Expert 13: [...] In my mind, some items indicate creativity (finds a new function), some are precursors to it (must be present if one is to be creative...for example, "inquisitiveness"), and some might be outcomes of being a creative person [...].*

*Expert 13: I thought of one true test: give a kid a brick and ask him/her for some novel things one could do with it. "Build a wall" earns zero points, "hold open a door" gets one point, use it to help you sink to the bottom of a pool earns two points, and I can't go beyond that to a five pointer because I'm not very creative (crush it to make red color to use in white plaster?)*

*Expert 15: Some of these behaviors (in CBYCC) could be because of creativity-some may be because of confusions from processing information in a different way and not having confusions resolved; therefore I have marked some √ and X because it could be a result of either.*

*Expert 19: Depends on context (Some of these behaviors)*

*Expert 32: [...] A child who spends an entire morning building structures in the block area has created something new to him/herself as it is the first time she/he has built this structure.*

***What are some of the examples of creative behaviors in young children?***

***Unusual curiosity; unusual interests***

*Teacher 3: Yes. I always questioned everything. My inquisitive nature only lead me to a greater thirst for knowledge, and that knowledge allowed for the expansion and elaboration of stories and images created by my imagination [...].*

*Teacher 6: I always loved making things and always had interests that lay a little outside the realm of my peers.*

*Teacher 8: [...] Some kids might think that knocking a kid over the head with a toy is creative because they want to see what happens when they do that. But I wouldn't call that constructive behavior, even though the child is just curious as to what the result will be. What happens if I hit someone with a stuffed animal or I hit someone with a block? They are trying to think outside the box [...].*

*Expert 13: I view this one (curiosity) as highly indicative even if a precursor to creative behavior.*

*Expert 32: I believe creativity shows itself in a myriad of ways-through the ability of a child to be enchanted, delighted, fascinated by any number of things, to have curiosity as to how things work, how people behave, how the world operates. They may have a keen sense of interest in one or many areas...They would be able to find many answers to one problem or to create one single new method of doing something that has never been done before. They would be able to build on interests. They would explore-the outdoors or one new toy [...].*

### ***Finding new functions for useless things***

*Expert 13: Very significant in my opinion*

### ***Off-limit behavior***

*Teacher 7:[...] It could mean that the child is creative or simply that the child's environment has been such that a respect for boundaries has not been taught in an accepting and loving manner or that the child does, indeed, have a learning problem.*

### ***Illogical thoughts***

*Teacher 25: Some kids go off on a tangent, and some tangents are very logical, but I don't know that logical thoughts make a difference in creativity one way or another. Kids who jump from one thing to another without any apparent logic can be very creative.*

### ***Deep involvement in life activities***

*Teacher 3: Again-depends on personality and personal interests of the child. Some creative children will be drawn to those activities, while others will be more drawn to other forms of self-expression.*

### ***Low achievement level***

*Teacher 24: Yes and no. I think that they do correlate, that there are probably some significant studies out there that show higher creativity equals higher academics, but there are many creative children out there who may not be performing well on standardized tests. Children, and I know that even as an adult, when I have to take a test, there are a lot of factors and different things that come into play, you may not feel comfortable, and you're unable to do the best that you can do. You know the answer, but for some reason it just isn't coming out at that moment. You cannot give the correct answer. It doesn't mean that you don't know it, it just means the answer has slipped your mind. I don't know if it is fair to say that if you are not intelligent, if you don't score well on standardized tests, then you are not creative. There are children out there, they just blow me away with the things they say and do. But when it comes to standardized tests, where you have to perform certain math skills or show reading ability, then maybe they will not perform as well.*

*Teacher 25: Low achievement level in certain academic content areas such as math or science, and I was reading that as saying, if there is low achievement level in math then you would not be creative, and I disagreed with that. Or that if you had high achievement level in math.... I don't know how I interpreted that (Laughs).*

*Teacher 25: Yeah, they can, but I wouldn't say in general. It can happen, and children with high achievement levels can also be very creative. It can happen either way.*

### ***Acts in a heroic manner***

*Teacher 3: All the time-that's attention seeking and not being true to one's own identity.*

### ***Stubborn behavior***

*Expert 26: # 106 (stubborn behavior) I believe that creative children may be more passive in resistance.*

### ***Aggressive Behavior***

*Teacher 8: Definitely. I love doing it, I love performing, but I couldn't wait, when I made the transition to modern dance, I was gung-ho, I never wanted to put on a pair of point shoes again. When we graduated from college we had a party, we were going to burn our point shoes! We were going to set up a little grill and burn our point shoes because we could not stand this woman! The woman who was our teacher [...].*

Teacher 8: [...] The outlet and the results might be a little bit dangerous or unwise, according to how it affects other people. Some kids might think that knocking a kid over the head with a toy is creative because they want to see what happens when they do that [...].

Teacher 12: Yeah, he's aggressive. It depends what he's doing, but he can become easily frustrated. Like yesterday. Something happened that was completely his fault, something didn't work out for him and it was his own responsibility, but he was angry, and squeezed my daughter because she was nearby. So he takes it out on her, he's aggressive to her when he is frustrated.

Teacher 24: I don't think so. That may be their way of expressing themselves if they are mad, and I think that is more common in younger children who don't have the verbal or language skills to be able to express themselves that way, so they are expressing themselves in a different fashion, and unfortunately it is not a proper one, if they are striking out and hitting a child. I think that's just a matter of maturity and understanding on their part as they grow. And this is quite common in our classroom, we have children three to five, and the younger ones, the three-year-olds, tend to be the aggressive ones, and so they get to know that, first of all, they are safe, we want everyone in our classroom to be safe and comfortable and happy in our room, so we make sure that we express that to them, and in order for us to meet those needs, they need to help us, and they need to be able to express themselves through words. I think the past curriculum that we are implementing in our classroom is a great way of teaching children, first of all, how to stop that aggressive behavior, and take a breath, and then expressing themselves with their words. Unfortunately, some kids do not have the words. They may be the younger ones, or maybe they are from a different country and have a lack of communication with us. That is their way of expressing themselves. We have one little girl in there, she does not have the verbal skills, so she has been going up and grabbing the kids and pinching them. She is very young, and she also has some other developmental delays. And the children at first were scared of her, and they were all wanting to stay away from her and did not want to be her friend. And we all had to work together and teach her, "You need to use your words and tell them, because you are scaring them away from you by hurting them when you grab and pinch. And slowly this little girl has been able to start to express herself, because she loves being with a particular group of other girls, older girls in our room, and so we have been able to work together and say, "If you don't like what she is doing, you need to tell her, "Please don't do that." But you need to also say, "What do you want?" Because she wants something. So they have been working together, and it's wonderful to see her progressing and being able to use some words, and have that dialogue with the other kids, instead of the grabbing and pinching.

### **Failure to follow directions**

Teacher 3: Could go either way-depends on motivation.

Teacher 12: [...] Sometimes creative kids, if you give them a rule and say "This is how you do it, this is what I want you to do, they may not understand what the rules are [...].



Teacher 25: Some children who are ADD, and very distractible, and get distracted from directions, are also very creative.

Expert 2: Many of these items (e.g. # 19-fails to follow directions) could signal creativity as well as a host of other attributes or issues.

### **Day dreaming**

Teacher 3: [...] I never stop dreaming and creating [...].

Teacher 8: I like to think I am a creative person in that...(laughs)...I always tell people, "I don't live in reality!" I have always had my head in the clouds [...].

Teacher 8: [...] I always just pictured characters, like when I used to write, I would try to see myself in different situations, and that became the basis for characters I would write about, like "What if?" That was a big driving force. "What if...something happened". I think I attribute this to, I used to read a lot of fairytales and fantasy and fiction, and I think that influenced me a lot. "What if we could live on the moon?", "What if this really did happen?" or "What if this is the way things were?". So even when I was younger, and to some extent today, I'll watch a TV show, and I'll really get into the characters and the plot line, and I'll find ways to put people that I know, or myself, or situations that I know, "What if this situation happened in this setting or this show" Or "What if I were a character in this show, who would I be, or how would I interact with the other characters in the story?" It's a nice diversion, it helps me sleep sometimes, my mind usually goes a mile a minute. I'll imagine myself as part of a show I just watched, "If I were that character, what would I be doing, well I would do this, or I'd be that kind of character, or I'd have these attributes."

Teacher 12: [...] They might be daydreaming half the time, or they are too social. I wasn't the best student in the world, but I worked hard, and you have to think of ways that you can learn.

Teacher 24: There is a lot of information out there that I know is important, a lot of factual knowledge that we are expected to learn, but I think that when teachers, and when I was growing up it was common for everyone to be sitting at a desk, everybody had the same book, and the teacher just rambled on and on. I think that turned me off. I got bored. I did a lot of daydreaming... I'd look out the window, watch the squirrels, and think, "Oh, I wish I could be outside." So I think that may have stifled my creativity as far as wanting to learn. [...].

### **Laziness; falling asleep**

Teacher 1: [...] No, (I am not creative) when I was lazy and bored.

Teacher 7: Could be tired creative child

*Teacher 12: I think to some people it may seem that a child is lazy or slow-moving, and I think of my child, sometimes it takes him forever to clean up his clothes, because he is so involved in thinking about things, he is in his own little world, and I think some people can perceive that as laziness, depending on who the child is with.*

### ***Favored learning methods***

*Teacher 7: Could be creative if in addition exhibits unusual ways of learning.*

*Teacher 8: If a child uses similar methods applied to different situations, this can demonstrate a creative approach to understanding and learning.*

*Teacher 12: I just think kids who are creative will find ways to learn stuff. I wasn't the best student when I was younger, but I'd make up little rhymes or patterns to memorize stuff for social studies, or tests.*

### ***More interests in physical activities***

*Teacher 7: Can't physical creativity be included in "creativity".*

*Teacher 25: I think different people are creative in different ways. Some children are more creative in dance, others are good with their hands, or with small things, so I think each child is potentially creative, but in different ways.*

### ***Anger and frustration***

*Teacher 5: [...] Children routinely find creative solutions to problems including the problem of adults who interfere with their natural zestful exploration of the world around them. As long as children (or adults) are using their thinking, I would label the behavior as creative. Sometimes children (or adults) are acting out of pain or distress. At these times they are unable to use their thinking. This behavior I would not tend to label as creative...sometimes the same actions may be the result of thinking or of reaction to pain.*

*Teacher 5: It is an attempt to clear distress which limits creative thinking.*

*Teacher 7: Could be creative suffering from perfectionism, needs adult support.*

*Teacher 7: [...] In other words, a child born with a heavy "does" of creative potential who has experienced frustration at home when presenting alternatives to the "normal, accepted" ways of relating to materials or other people, may act stiff, seek continual praise, be envious of other children, etc. by the time I see him or her[...].*

*Teacher 8: [...] So to me that is a form of getting attention or expressing frustration, or they are not getting their way, so they want to divert attention to themselves and what they want, "I don't feel like doing this anymore."*

*Teacher 8: Definitely. I love doing it, I love performing, but I couldn't wait, when I made the transition to modern dance, I was gung-ho, I never wanted to put on a pair of point shoes again. When we graduated from college we had a party, we were going to burn our point shoes! We were going to set up a little grill and burn our point shoes because we could not stand this woman! The woman who was our teacher [...].*

*Teacher 8: [...] So I think a lot of learning disabilities are just frustration, or maybe anger issues or behavior problems.*

*Teacher 8: To a point. I think it depends on the effect the creative behavior has on the outlet. Like my brother taking apart his toys. It was good creatively that he was trying to figure out how things worked, but it was bad because he had more broken toys than fixed toys. So, I think if an outlet turns negative, like drawing on the walls or something, it could be out of frustration that there is a creative element trying to come out, trying to be expressed, but it's not being allowed to be expressed in a creative way, or the child himself is having trouble expressing the creativity, expressing what is going on. I don't know, I think the creativity itself is not a bad thing, but the outlet and the results might be a little bit dangerous or unwise, according to how it affects other people. Some kids might think that knocking a kid over the head with a toy is creative because they want to see what happens when they do that [...].*

*Teacher 12: Well, I am thinking of my own son now, he is so creative sometimes that when he is working on a project, maybe just making something out of a paper towel roll, in his mind he has a picture of what he wants as an end product, but he gets very frustrated, because he knows what he wants to do, but physically, his little body, he can't do it, he doesn't have the materials or the fine motor skills to carry out the task, and he flips out, just loses his mind, screaming and crying, "Oh, I can't do it!" I think sometimes his brain is moving so much faster than his little body can keep up with, so I have to calm him down and say, "Okay, what did you want to do?" He'll say, "Oh I want to make it into this or that...." He has to learn to accept help from other people, that is difficult for him, letting me help him, he wants to do it all himself because it is his idea. It is frustration. He is creative and he has ideas, but he doesn't know how to get from A to B.*

*Teacher 12: On the negative side, we both get easily frustrated. I think you have high expectations of yourself. When you are doing a project or working on something, of course you want to do it well, but you want it different too, you want to do something a little different from the next person.*

*Teacher 12: With him I think of how sometimes he wants to sit down and do something, write a story maybe, and he can't remember, "Ooooh, I forget what I want to say!" He draws a blank and he gets angry because he can't remember what he was going to say or do next.*

*Teacher 12: He gets very easily frustrated with himself when he can't remember what he wanted to say next. He'll say that to me a lot, "I forgot what I wanted to say!"*

Teacher 12: We both have short fuses!

Teacher 24: I don't think so. That may be their way of expressing themselves if they are mad, and I think that is more common in younger children who don't have the verbal or language skills to be able to express themselves that way, so they are expressing themselves in a different fashion, and unfortunately it is not a proper one, if they are striking out and hitting a child [...].

### **Taking toys apart**

Teacher 8: He (brother) was always the kid that would take apart his toys, I would find different ways to play with the toys, he would take his apart and put them back together again. But it's interesting to see the two sides of it, the creative side and the mechanical side, because I think there is the same level of dedication to it, but it's a totally different piece of the brain working, the mechanical side versus the creative side, but I think they both work together.

Teacher 8: To a point, but not really. I always thought it was very creative of my brother to take apart toys, because he always knew how to put them back together again. To be able to take them apart to see how they worked, I thought that was very creative on his part, so his outlet for his creativity was, how can he take it apart, put it back together, and maybe make it more efficient? He would take apart a toy where the arm only went this far, and he would put it back together so the arm went all the way around. I think that mechanical side, that shows creativity too.

Teacher 8: [...] My other family members were often more mechanically inclined, and I often found myself trying to take the things they took apart and use them differently.

Teacher 9: My son is creative in a way because he's always taking stuff apart and putting it back together again.

### **Sex norms**

Teacher 8: [...] When I was growing up there were boys toys and girls toys. I always went for the boys toys more than my own, just because I was convinced you could make any toy go either way. Like, there aren't just boys toys or girls toys. Girls had the dolls, and doll houses, and the pretty pink fluffy stuff, and boys had the matchbox cars and action figures, and I always thought, "Well, action figures can work with my dolls", I was always trying to see both sides and make them work together, again, thinking outside the box.

### **Lying, cheating**

Teacher 8: It's not the first thing I would think of if I caught a student lying or cheating, that this is creative behavior, it would seem more like they are trying to get out of something, but on

*deeper reflection you could think, "Oh they're lying, they are being creative with the truth". Some people say that lying is just creative truth-telling. But the way they go about doing it might be thinking outside the box, it might be thinking of a different way of doing things, but it's not something that ought to be encouraged. But to a child, they might just think of it as another way of doing things. Cheating I think is just a way of making up for something they didn't do, to cover themselves in a way. They didn't study, therefore they need to cheat. Or they didn't follow the rules, so they have to come up with a way to solve the problem, and make up for something they didn't do right. But at the same time, there could be a creative way of going about that in their head, a new way of coming up with something. It could be construed as creativity, but as a teacher, that is not behavior that I would encourage.*

*Teacher 25: Yes, I have had some people, I don't know if you can call them cheaters at the pre-school age, but they might hide other people's things and not tell them where they are, and deny it when they are asked. We've had people who have done that who were very creative! We see so many children here, and these attributes, so many kids have them.*

*Teacher 25: Yes, we've had some kids here; we have had some issues with lying where kids have been extremely artistic [...].*

*Teacher 25: They'll hide something, and I'll say, "Where is it," and they'll say, "I don't know." I can think of one young person who used to do that all the time, but was very talented.*

*Teacher 24: Only to the extent that they may be finding different ways to get what they want. It's all probably a matter of whether it is a physical need or an emotional need that they have; they may cheat or lie to get what they want. Some of the ways of doing the cheating or lying, they may be creative in coming up with some different things to say or do to meet those needs, but I don't feel that children who are creative tend to lie or cheat more. I don't think there is a connection there. And I don't even know how I would rate my children on the degree of creativity in a child. I'm not sure I could come up with a measurement tool that would show, because again I think some children are creative and are just not able to express it. I don't know how much creativity is in their mind, but they are thinking, they are just not able to express it.*

### ***Breaking the rules***

*Teacher 8: [...] I think creativity allows you to think outside the box, to break the rules and see what you can come up with [...].*

*Teacher 8: I think everyone is so worried about following the rules, if they would just let their minds open up, they might find, "Well, maybe this way would work better". I consider that creativity. It's just kind of looking outside the rules to see what else is possible.*

### ***Professionalism, doing their best***

*Teacher 7: Could be creative suffering from perfectionism, needs adult support*

Teacher 24: [...] One thing, I am very proud of the fact that they are all very driven to do their best. So with homework, tests, grades, they all get a little tense and stressed when they have to turn in an assignment or if they know they are going to be tested, because they like to be perfectionists to some degree, they take after their father, he is a perfectionist [...].

### **High jealousy level**

Teacher 7: [...] In other words, a child born with a heavy “does” of creative potential who has experienced frustration at home when presenting alternatives to the “normal, accepted” ways of relating to materials or other people, may act stiff, seek continual praise, be envious of other children, etc. by the time I see him or her[...].

### **Fault finding**

Teacher 7: Tiresome but not opposite to creativity.

### **Self-reinforcement behaviors**

Teacher 7: Not related to criteria (participant checked this item yes in the CBYCC)

### **Learning disabilities**

Teacher 8: [...] I was the same way. I was a little slower than others in doing my assignments, but it was because I was interested in something else. Or I wasn't paying attention in class because I was reading ahead in the book. Or I had my notes stuck in another book under my desk. I would probably be labeled as having, the behaviors I see in these kids, their parents say, 'She has ADD, she is on Ritalin,' and they are not demonstrating any symptoms or behavior that I did not see in myself at some point, so I think a lot of it isn't a learning disability, they are just kids who are seeing things differently [...].

Teacher 8: [...] So I think a lot of learning disabilities are just frustration, or maybe anger issues or behavior problems. One of my brothers was put in a special class because they said he had behavior problems, and really he was just bored with the material. He was three chapters ahead of everybody else, but the teacher said “No, if you are not focusing on the material that we are currently working on, you are a disruption to the class, therefore you have a behavioral issue [...].

Teacher 12: I don't think so. He's doing really well in school with all the cognitive stuff, but sometimes socially, I think he is [...].

Teacher 12: Early talker, early walker. My daughter too, but she was a little later than my son.

*Teacher 12: [...] Kids who are creative, sometimes if things are too structured, it is out of their realm and they can't do their own thing, they may have trouble with learning if the teacher is not a creative person.*

*Teacher 12: [...] He doesn't really have any trouble with learning blocks.*

*Teacher 12: [...] If we are talking about older kids, junior high or high school, maybe they are just thinking about other things, maybe concrete, structured things just don't come as easily to them as common sense things. I was terrible at geometry, all those theorems, I was okay with algebra, but geometry was tough.*

*Teacher 24: I probably would say that if they are a special-needs child, or they have lack of language abilities or cognitive abilities, that would probably interfere with their creativity, their brain is not able to connect for them to express themselves, if it is a motor skill, they may not have the motor movement or the ability to dance, or to do whatever it is we do with our bodies to express creativity. I think that sometimes they can come up with some really different things to do, again, one little girl we have in our classroom, some of the things I watch her do with some of the objects or materials in our classroom, I've never seen other children use before. And I'm thinking of our dramatic-play area, where we have a lot of dress-up things, and doctor kits...I have seen this little girl taking some of the food objects that we have, and then taking some of the tools that a doctor would use, like a stethoscope, and putting it on an apple. I've never seen a child do that before. So I think that her creativity is definitely there, and she is coming up with some neat ways of using materials that are definitely different from what I have seen before. But again, she does lack some of the other creative skills, such as fine motor; she has poor fine-motor control, so she doesn't do a whole lot of drawing. She loves to paint, but it's more gross motor where she is using her whole arms to do, so she does not have fine-motor skills yet. I think she does lack that creativity in some areas, but she definitely expresses it in other ways.*

*Expert 25: It seems that many of the characteristic described in the survey could relate to kids who are ADHD. These kids/many times are very creative but also can be quite disruptive. In the classroom a balance must be reached to maximize participation for all the kids. If a kid is derailing the activity for the group, his behavior can't be tolerated. I think creative kids who have behavior issues can learn to interact with their peers and still express their creativity [...].*

*Expert 31: [...] Even a student with a learning disability could be very creative in other areas [...].*

### **High anxiety level**

*Teacher 8: I don't know if that is necessarily a sign of creative behavior. It might be a sign of frustration, like they are not getting their points across, they are not being understood, or they are not understanding. I think being more open to a child who may have a high anxiety level, I think a creative outlet might help them a lot. They should be introduced to a music class or some creative writing, or something like that.*

Teacher 8: [...] Because you are too strict with them, they shut down, that just turns people off. I used to dread those classes, because I would think, “I can’t do anything, and if I can’t do it right, why do it?”

Teacher 12: [...] I was thinking about my own child. He is often very excited and anxious about stuff, I can’t think of anything specific right now.

Teacher 24: [...] They all get a little tense and stressed when they have to turn in an assignment [...].

Teacher 25: Is it nervous kids we are also interested in. I don’t find a lot of correlation between that and creative behavior [...].

Teacher 28: Yes (I was a creative youngster), when I felt comfortable I was creative. I was a little shy and did not like to take the lead. But I started dancing and realized how much I loved it and my insecurities seemed to go away. My love for dance expanded my horizons and made me more creative and outgoing. I was always dancing, singing or acting (participant crossed out shyness in CBYCC and high anxiety level).

Teacher 39: Somewhat, I can remember being concerned with others’ expectations and wanting to do things “by the book”. I do not recall having many opportunities to be creative in my elementary experience. I believe that it was not until high school that creativity was encouraged [...].

### **Seeking awards and recognition**

Teacher 7: [...] Has experienced frustration at home when presenting alternatives to the “normal, accepted” ways of relating to materials or other people, may act stiff, seek continual praise [...].

Teacher 7: Could be creative suffering from perfectionism, needs adult support.

Teacher 8: Ummm, some children are very goal oriented, and I think a lot of that depends on their upbringing, on their parents, parents pushing their kids, “You’ve got to be the best in the class! You’ve got to get the prize! You’ve got to come in first!” Some parents are like that. I’ve seen it in the arts, and through dealing with children. Some parents feel that is the ultimate goal, getting that scholarship, winning first place in the science fair. Some children are always driven to get that top goal or prize because they feel they have to, that is the environment they are brought up in, they have to win.

Teacher 8: Not always. It depends how they go about getting that prize. Take the school science fair. You follow the rules, this is a proven winner in the science fair every year, some kid builds a solar system, so you follow the formula; you build scale models, blah, blah, blah. Then there is the kid who tries to win the prize by doing something completely different, something that nobody has ever done before, or they do a solar system too, but the planets are not all to scale, or they are all different colors, or shapes. There is a way of going about achieving the prize. If they want



to win the prize by following the rules because they have to, I don't think that would be demonstrating creative ability, they are not doing it because they want to, or because they are trying to do something as well as it can be done. They are simply doing the best they can do because they have to. Now if a child tries to get the prize because they are doing it differently, they want the prize for doing it differently, like making the earth square, they may not win the prize, they may strive for it, "I'm going to win first prize because this is different," that is showing creativity. So it is how they go about getting the prize, if they find another way to bend the rules and still get the prize, that I think would exhibit creativity. But I have seen the opposite so often, "You have to get the prize because Mom or Dad said so".

Teacher 8: Seeking prizes, awards, or recognition in itself does not exhibit creativity but how the child goes about seeking the prizes, etc. can show it.

Teacher 12: I think creative children, and kids who love what they are doing do it because they love it, not because they want to be standing on a stage with a certificate and be the first one or be the best. I think they just do things because they enjoy what they are doing, not because they seek [...].

Teacher 24: I don't know. I can see them being a little more creative because they are striving to receive something, so if they know they are going to get recognition if they can write their name, or perform a certain task, or maybe in gymnastics if they can do a certain move, that may encourage them to try harder or work harder at a certain skill, but I don't see that as reflecting creativity.

Teacher 25: I think all children like to be praised. Somebody who is creative would want recognition for their art, almost all children do.

### **Nail Biting**

Teacher 24: When I'm under stress, when I'm taking a test, there go my fingers toward my mouth, I'm like, "Get those fingers out of your mouth!" I don't know. I never really thought about nail biting and creativity.

Teacher 24: I personally do not think it's related, I think it is more related to your self esteem, and your ability...I don't know, I really don't know, because growing up I did bite my nails, but I always thought it was a problem I had because of being one of ten kids, and we had a really difficult childhood, my parents were wonderful, but financially, we really struggled, so there were times when I was embarrassed because I didn't have the best clothes, and I got a lot of hand-me-downs, a lot of things from my cousins, and I'd go to school, and my cousin would say, "Oh, that was my dress." So I felt kind of inferior to my peers, and I was very shy, not outgoing at all, and I think that was just my way of comforting myself, biting my nails. Of course as you get older you realize that's not a very healthy thing to do, so you really try to break that habit, and I don't see too many children in our classroom biting their nails. It's very rare to see that

*happening. In my particular room. But I think it's more a feeling of, a lack of self esteem, than a lack of creativity.*

*Teacher 25: Is it nervous kids we are also interested in. I don't find a lot of correlation between that and creative behavior [...].*

*Expert 26: [...] #51 (nail biting) I think could be a characteristic of a creative child if he/she is being forced to fit the "normal" mold [...]*

### ***Unclear or hesitant speech in certain situations?***

*Teacher 13: Thinking too quickly/too much for words.*

*Teacher 25: Yes, we have had some potentially very creative people. Some kids we've had have gone on, they are exploring different things trying origami, and continuing to pursue different things, and ways of expressing their art, and some of those children have a variety of issues, I think one boy had Asperger's Syndrome, and that was his way of expressing himself, through art.*

*Teacher 25: That's the little boy with Asperger's, he had a lot of issues with social situations, but he was very talented, he showed it through drawing.*

### ***Uncertainty***

*Teacher 7: Could be a creative child in a restrictive environment-home or school.*

### ***Surpass other peers***

*Teacher 8: How the child goes about surpassing may show creativity, but not if a child simply duplicates yet improves another's performance.*

### ***Difficulty in making friends***

*Teacher 24: [...] We have one little girl in there, she does not have the verbal skills, so she has been going up and grabbing the kids and pinching them. She is very young, and she also has some other developmental delays. And the children at first were scared of her, and they were all wanting to stay away from her and did not want to be her friend. And we all had to work together and teach her, "You need to use your words and tell them, because you are scaring them away from you by hurting them when you grab and pinch. And slowly this little girl has been able to start to express herself, because she loves being with a particular group of other girls, older girls in our room, and so we have been able to work together and say, "If you don't like what she is doing, you need to tell her, "Please don't do that." But you need to also say,*

“What do you want?” Because she wants something. So they have been working together, and it’s wonderful to see her progressing and being able to use some words, and have that dialogue with the other kids, instead of the grabbing and pinching.

Teacher 25: Again, that’s the little boy with Asperger’s. That’s one of the main issues with Asperger’s it’s social, difficulty making social connections.

Teacher 25: They don’t know why, most children with Asperger’s have this problem. They are unable to understand the social connections and social connotations that people engage in. They don’t understand what is going on when kids are talking to each other. They are confused by non-verbal communication, they don’t understand that. If someone stands back when you talk to them, you and I would understand that maybe they need a little more space, but this boy would not understand that. He would not recognize those social cues.

Teacher 25: Not all of them do, some are very social, and have no trouble at all, and are very creative. But I have seen this boy have a lot of trouble with friendships and social skills, even though he is very talented.

Expert 32: [...] A very shy child may not be able to create new friendships and build new relationships easily, but they may create a painting [...].

### **Uncommon questions or ideas**

Expert 13: [...] A vast number of items (in CBYCC) found me saying to myself “it all depends”. I need more information on circumstances and factors so that I can exclude psychotic behavior (like in #1-Uncommon questions or ideas), etc. [...].

### **Problematic behavior**

Expert 25: It seems that many of the characteristic described in the survey could relate to kids who are ADHD. These kids/many times are very creative but also can be quite disruptive.

Expert 27: [...] But sorry I have knew thousands of children as teachers and the teachers often complain of just such behaviors as you have listed-they may be very creative children-but may not. That would be specific to them but all of your criteria could be someone’s sign or view into their creativity.

Expert 31: [...] It is difficult to say is a child is a discipline problem or using his creativity.

### **Making mistakes**

Teacher 25: I don’t know why I crossed that out. (Pauses to think). Oh yes, because I disagreed with it. “Makes errors in computation or sequential tasks,” I think I was confused by that one.

*Some of these sounded like they were making correlations between children that had abilities in math, and saying that if you had abilities in math, then you weren't a creative person. That's how I was reading that, I don't know why I read it like that. Because I think children with good math skills are potentially very creative.*

*Teacher 25: Yeah, that could happen.*

*Teacher 25: I guess if they aren't focusing on the task at hand, if they are thinking about anything else, you can make mistakes if you're distracted. I guess I don't understand that question [...].*

*Teacher 25: (Studies the question for a moment) So this is saying, if you have a lot of errors in math skills, then you are not creative? (She laughs) Or that if you have a lot of errors in math skills, then you are creative? I don't know that it makes any difference [...].*

*Teacher 25: I'm trying to interpret it. If you make errors in math....I guess it could go either way, so I guess it doesn't make any difference. I've known a lot of people who are really bad in math who are very creative.*

### ***Perceived as crazy***

*Teacher 24: Yes, I've become more free, with my own children and the children in my classroom, and myself, to be able to express myself in different ways, and not really worry so much about how other people are interpreting me, or evaluating me, it's how I feel and what I believe.*

*Teacher 25: I don't see a lot of kids do that actually. I don't know that pre-school kids do that.*

*Teacher 25: Yeah, I guess I was confused about that one too. I don't know what to say about that one, because I don't see it a lot [...].*

*Teacher 25: I suspect that when you get into adolescence, and people are actually starting to do this, feel very insecure about themselves, I would bet that a lot of those kids would find expression through art for some of their negative feelings. I could see that happening very easily.*

*Teacher 25: Yeah. If I remember correctly, the young woman who shot the students at Penn State was also very creative artistically, and did some of the murals on the walls of some local buildings. I think she was working out a lot of stuff, emotionally, and that she expressed it with her art. And some of her paintings were very distressing. Yes, I can see art being an expression of those feelings.*

### ***Shyness***

*Teacher 8: Well, I was a shy kid, and I never tied my shyness into creativity at all. But I considered myself very creative.*

*Teacher 8: I think if creativity was encouraged, it would help shyness. And I think shyness is almost a state of mind for kids. They can get intimidated very easily, and I think creativity can help overcome shyness. It did for me.*

*Teacher 8: Dancing a little bit, because it put me in an environment with a bunch of other people who were doing the same thing. Shyness, a lot of time, can stem from differences. I was always the tiny kid, small for my age, skinny, bleached-blond hair, I looked different from the other kids, so that tended to make me kind of quiet, I stayed to myself so as not to attract attention, because I was different. And I think the creative aspect that I was thrown into with the dancing and the writing, I found other people who liked to write too, and play music, and when you are given a creative outlet, it allows you to join up with other people who share that sameness. So you are not always the outsider, you are not always the one on the fringe.*

*Teacher 18: Probably not (not creative) as much as I would like to think because of a shy personality (participant crossed out shyness in CBYCC).*

*Teacher 24: Shyness with regard to creativity? That's difficult to see, because if a child is shy they may not feel comfortable expressing themselves. So they may not get involved in some of the creative activities that we have in our class, I'm thinking of dancing and using the scarves, and music, and some of those activities. I don't think that definitely means they are not creative, it's just that they are uncomfortable expressing that. So first you need to try to get the child to overcome that shyness, in whatever fashion you can use, not that I would want to set them up on a pedestal and say, "Everybody, check out what she just did," because that's putting them on the spot, and that is not a healthy way of working out that shyness, and I don't really think that shyness is a disability, everybody has their own personality and behaviors, and that's okay, now there probably will be times as they grow up where they're going to need to, especially in elementary school or high school, where they're going to be doing speeches in front of groups or whatever, so I think they do need to learn how to be more comfortable around a group, but I don't think it's really our place in a pre-school setting to try to coerce them into not being shy. I think it's important that we look at each individual as an individual, and that they have their own style. Now, you may want to work with them, start slow, maybe just doing a lot of teacher one-on-one interactions with them, maybe try to get them into some small group activities, and eventually getting them to participate in some of the larger group activities, because eventually they will need to try to be a little more outgoing, either to meet their own needs and get what they want, or to be successful in school, but I think it is important for us, when they are this early age, to just accept them the way they are, and try to slowly work with them. You don't want them to feel that they are not as good as anyone else because they are shy. They are probably just as creative.*

*Teacher 25: I think there are some kids that are kind of shy, not real extroverts, who really like doing artwork, they come in and tend towards the quieter activities such as reading or art.*

*Teacher 28: Yes (I was a creative youngster), when I felt comfortable I was creative. I was a little shy and did not like to take the lead. But I started dancing and realized how much I loved it and my insecurities seemed to go away. My love for dance expanded my horizons and made me*

more creative and outgoing. I was always dancing, singing or acting. (participant crossed out shyness in CBYCC)).

Teacher 35: Many behaviors are personality-some creative children are very outgoing, some are shy. Some are leaders and problem solvers. Some have no interest in leading and prefer to be left alone to pursue interests [...]

Expert 32: [...] A very shy child may not be able to create new friendships and build new relationships easily, but they may create a painting [...].

Expert 2: A creative child might shy away from specific instructions as to how to complete a task. But so might an ADD child or a child with insufficient ability etc. what I am trying to say is that many of these items could have multiple connections/root causes.

### **Sadness**

Teacher 25: I guess I didn't find a correlation one way or the other, sometimes kids are sad, but I don't think we have had a child who has been sad all the time, or depressed, you just don't see a lot of that at this age. No correlation in general.

### **Making unstructured or artless drawing**

Teacher 3: Artless according to who's opinion? What is the age and capacity of the child? Is it abstract impression or lack of skill?

Expert 32: [...] I still ran into stumbling blocks when I looked at an item such as "makes unstructured or artless drawings". Is something "unstructured" considered "artless"? Is it possible that a creative child might exhibit any of these behaviors? The answer I came up with was, "Yes". Therefore I would have to check every single item on the list as possibly relating to creativity [...].

### **Misbehavior**

Teacher 7: Could be a frustrated creative child.

Teacher 8: Only if misbehavior is connected to frustration would creativity be suggested.

Teacher 8: Yes, I think if the misbehavior is linked to frustration, that shows creativity. But some children misbehave just to get attention, They don't like where they are, they don't want to be in school, they don't like the material being taught, some kids like reading but not math, so they misbehave during math class, because they don't like the material. So if the behavior is linked to the child not being able to express their creativity, that I would understand, because the kid doesn't have an outlet and is getting frustrated, and that is why they are misbehaving [...].

*Teacher 24: Sure! Children are always thinking, and sometimes they test us to find out what are the limitations, and they may think of creative ways to get around those limitations, let me think of a situation, for instance, if we are outside, and we have fenced-off areas, and there is a certain grassy area that we are not really allowed to play on because it is not a safe area for us. I have had children who will take a toy and purposely throw it over into that fenced-off area so that they can go get it. I think that is being creative, to come up with a new way to get what they want. Another situation may be that they will come up to me and say, "Miss ..., can I do something?" And I'll say, "No, unfortunately you can't do that now, we are getting cleaned up," or whatever the situation may be, then the same child will go to another teacher and creatively ask that teacher, "Hey, can I do this?" and if that teacher does not know that I already gave a response, she may give a different response, and again, that child is going to end up getting what they want. Some people may say that is being sneaky or defiant, I think it is also being a little creative on their part, they are kind of brainstorming, doing some divergent thinking on what are some other ways that I can accomplish my needs or my wants? Unfortunately, sometimes it may be a behavior that is not safe. I have one little guy in my class who is an awesome climber, and if we happen to have something up high that he wants, he will become very creative in finding a way to climb up, whether he is climbing up on a table and then onto a shelf and then on top of something else to get that object! He'll do whatever he can to meet his objective [...].*

*Expert 25: It seems that many of the characteristic described in the survey could relate to kids who are ADHD. These kids/many times are very creative but also can be quite disruptive. In the classroom a balance must be reached to maximize participation for all the kids. If a kid is derailing the activity for the group, his behavior can't be tolerated. I think creative kids who have behavior issues can learn to interact with their peers and still express their creativity [...].*

### ***Sympathetic behavior***

*Teacher 7: Not a criteria for creativity; socialization criteria.*

### ***Skills of manipulating numbers***

*Teacher 8: Analytical skills are different than creative skills.*

### ***Trouble making:***

*Teacher 3: You have to take into account the child's overall personality style to know if the "trouble making" is intentional, disruptive, attention-seeking, a means of distraction, or a side effect of creativity.*

*Teacher 12: [...] As far as trouble-makers, maybe kids who are doing their own thing and not paying attention to what the teacher is saying would be considered trouble-makers. Or that they were interrupting or causing a problem.*

Teacher 12: [...] They are creative in the way they cause a ruckus!

### **Dislike of school**

Teacher 7: It depends on school.

Teacher 8: [...] I wouldn't say that not wanting to go to school is creative or not creative, it's the motivation behind what is making them not want to go to school.

Teacher 8: [...] Some kids feel, "Oh, if I didn't have to go to school, I would sit on my butt and watch TV all day." But if a kid said, "I don't want to go to school because I want to hang out at the library and read all the books," some days I wanted to do that, go to the library instead of going to school and sitting through math and science, or maybe just go to dance class, instead of social studies and history. It's hard for kids to want to do something that they are not interested in. And I think a lot of times, if you're going to school and you are not interested in the material, or you feel like you are not getting anything out of it, then they are not going to want to go. If they feel school is doing nothing for them, they'll hate it [...].

Teacher 8: This may depend on what the child would rather be doing instead (i. e. playing video games vs. learning on own).

Expert 4: Also true of uncreative (item #59 Lack of interest of attending school).

Expert 25: [...] We do not want to promote anti-social behavior under the banner of "creativity", and neither do we want to squelch individuality. The key, in my opinion is to strike a balance between encouragement of creative ideas and classroom management [...].

### **Refusal to join group activity**

Teacher 8: Shyness, a lot of time, can stem from differences. I was always the tiny kid, small for my age, skinny, bleached-blond hair, I looked different from the other kids, so that tended to make me kind of quiet, I stayed to myself so as not to attract attention, because I was different. And I think the creative aspect that I was thrown into with the dancing and the writing, I found other people who liked to write too, and play music, and when you are given a creative outlet, it allows you to join up with other people who share that sameness. So you are not always the outsider, you are not always the one on the fringe [...].

Teacher 24: Shyness with regard to creativity? That's difficult to see, because if a child is shy they may not feel comfortable expressing themselves. So they may not get involved in some of the creative activities that we have in our class, ...So first you need to try to get the child to overcome that shyness, in whatever fashion you can use, , everybody has their own personality and behaviors, and that's okay, now there probably will be times as they grow up where they're going to need to, especially in elementary school or high school, where they're going to be doing



speeches in front of groups or whatever, so I think they do need to learn how to be more comfortable around a group, but I don't think it's really our place in a pre-school setting to try to coerce them into not being shy. I think it's important that we look at each individual as an individual, and that they have their own style. Now, you may want to work with them, start slow, maybe just doing a lot of teacher one-on-one interactions with them, maybe try to get them into some small group activities, and eventually getting them to participate in some of the larger group activities, because eventually they will need to try to be a little more outgoing, either to meet their own needs and get what they want, or to be successful in school [...].

### **Left alone**

Teacher 35: [...] Some have no interest in leading and prefer to be left alone to pursue interests [...].

### **Regressive behavior**

Teacher 8: Regressive behavior, I would say, could be done just to get attention. A child could exhibit regressive behavior because they don't like the situation they are in. I have had 6-year-old children just sit down on the floor and start bawling because they did not like the exercise we were doing. "I want my mommy," I mean you would expect a 6-year-old to be out of that stage. I would expect a child of 3 or 4 to do that, but sometimes an older child will do it just because they don't like the task at hand, they're bored, they're not doing what they expected to be doing [...].

Teacher 8: Creative if the regressed behavior is expanded, being used to accomplish a task or taking a different view of a situation.

Teacher 25: Let me think of examples. Ummm, sometimes kids will go through regressive behaviors when something is going on at home, or for a variety of reasons, they just had a new sibling, so they'll regress, but I don't think that correlates with creativity one way or the other. That is just an attribute of certain children [...].

Teacher 25: If a child has a new sibling who is getting his diaper changed all the time, they might start peeing in their pants again, that's a regressive behavior. But that doesn't necessarily have anything to do with their creative abilities one way or another. It's just something that happens.

Teacher 25: Usually there is something causing it though. Kids don't go straight up (to behavior like that), they get there gradually, so I guess in some ways they are always periodically regressing, unless you are talking about children with developmental delays.

Teacher 25: That's because there is no option to say. I don't think it matters, I could only answer yes or no. So yes, kids, when they are doing this, can be creative, but I don't think it affects their creativity one way or the other.

*Teacher 24: Yes. Yes. I think there are different reasons for children to regress, for instance, we have a couple of children who just recently, their parents, the mother had a baby, and we have seen them reverting to, regressing back to sucking their thumb, or using a pacifier that they have not used in two years, silly things like that. I think, maturity-wise, children, especially the 3 to 5 level, are still, they want to be independent, they want to be a grown-up and be able to do their thing, but emotionally, they are not there yet, so they still want to have that comfort of an adult or a caregiver or someone there to meet those needs, so I can see them kind of going back and forth and regressing in some areas, and showing strength in other areas, so I think that particular age is a tricky one, because they do want to be independent, and they do want to feel that they have control, but they also want somebody to be there for them, and someone else to be in control. They do want those limits there. But it is quite common for children to regress back to old behaviors, whether they are not feeling well, or there have been major changes, parents getting divorced, or they are moving, different situations taking place in their homes, or even in our schools, with new children or new teachers coming in, they are not comfortable and they regress back to an old behavior.*

### ***Frequent imitation of others' behaviors***

*Teacher 13: Room for innovation*

### ***Wrong starts in performance***

*Teacher 13: Could lead to something new and different*

### ***Preference of silence***

*Teacher 13: Taking in the environment*

*Expert 31: I feel there is not one description of a creative student. It could be the quiet one by themselves [...].*

### ***Touching things he/ she are supposed not to touch***

*Teacher 13: Interest*

### ***Ownership and privacy***

*Teacher 23: Raised in a farm-played outside a lot. Had a playhouse to pretend. Parents let us set up "play art" and role play for days. Had to be creative because did not have everything! Made a lot of things art, food, etc. [...].*

## **Leadership**

*Teacher 12: They're leaders. They don't just follow, they'll sit down and say, "Hey you guys, let's do this or that today," or they'll go to the color and cut table and be the first ones to start an art project and get the other kids into making something for the mural. They are always most interested first in what is going on in the room, and they will draw the other children into what they are doing.*

*Teacher 12: I don't think it's only that. I think they have leadership ability in the classroom, they were always open to new ideas, if we were switching themes, they always got excited about what was going to happen next, especially if it interested them. There are a lot of things that can be indicators. These kids are very observant, always paying attention to what is going on around them, these are the kids who will be reading this year. They take in all the information they can.*

*Teacher 28: Yes (I was a creative youngster), when I felt comfortable I was creative. I was a little shy and did not like to take the lead. But I started dancing and realized how much I loved it and my insecurities seemed to go away. Teacher 35: [...] Some have no interest in leading and prefer to be left alone to pursue interests [...].*

*Teacher 35: [...] Some are leaders and problem solvers. Some have no interest in leading and prefer to be left alone to pursue interests [...].*

*Expert 31: I feel there is not one description of a creative student. It could be the quiet one by themselves. It could be the one always in charge of his group [...].*

## **Inattention**

*Teacher 35: [...] In attention and /or difficulty with repetition could be the creative child's mind working on something else of instead, or bored with the task. Or it could be both.*

## **Burning interest in machines**

*Expert 11: It depends on area of creativity*

## **Exhibits teasing behavior**

*Expert 15: Some do/some don't*

## **Showing illness during certain activities**

*Expert 15: If having difficulties/confusions*

**Verbalize self –feedback aloud**

Expert 15: Depends on if verbal or visual /spatial

**Exploring with sensory impressions**

Expert 15: Some

**Thumb sucking**

Teacher 24: Yes. Yes. I think there are different reasons for children to regress, for instance, we have a couple of children who just recently, their parents, the mother had a baby, and we have seen them reverting to, regressing back to sucking their thumb, or using a pacifier that they have not used in two years, silly things like that. I think, maturity-wise, children, especially the 3 to 5 level, are still, they want to be independent, they want to be a grown-up and be able to do their thing, but emotionally, they are not there yet, so they still want to have that comfort of an adult or a caregiver or someone there to meet those needs [...].

### **Research Question 3:**

**Are teachers able to recognize indicator behaviors of creativity in children? And what are the creative behaviors that were recognized most, least, or not recognized among experts and teachers?**

By examining the qualitative data collected from participants; this researcher found a generally satisfactory picture of experts' and teachers' abilities to recognize creativity, although this recognition was limited in scope. At the same time, there are clearly confusions and inconsistent reports related to defining and identifying some of the creative behaviors by many participants, especially in the following areas related to recognizing many creative behaviors: factors that influence creativity; the creative process; misconceptions about creativity; implementation of creativity in different domains; and understanding how to efficiently nurture creativity in children. These conclusions have been reached by analyzing data from participants' reports. There is a great lack of assurance and lack of knowledge and experiences of creativity, as reflected in participants' frequent statements, such as stating the following: "I do not know", "I guess", "I am not sure", "why did I crossed that out", "Probably", "Possibly", "Let me think", "I cannot remember what I have said". Many of the creative behaviors reported through the qualitative data were mentioned indirectly by participants when giving examples or telling stories without direct recognition that the behavior was considered as a creative behavior. On very few occasions, participants reported confident or assertive responses, such as: "definitely", "absolutely", "Oh sure", "exactly". In addition, the qualitative data may differ significantly from the data collected quantitatively through the "Creative Behaviors in Young Children Checklist". In the following sections, more detailed information about the qualitative and qualitative responses of participants in relation to their

recognition level of recognition creative behaviors in children is provided. For the quantitative data, tables illustrate the percentages of recognition for each creative behavior and by each participant teacher. To review the recognition level for creative behaviors in young children by each participant expert, see the Appendix. For the qualitative data, the summary of quotes that reflect the level of recognition is presented in the next section.

### ***Degree of Recognition of Creativity including Creative Behaviors***

*Teacher 1: Sometimes yes and sometimes no [...].*

*Teacher 8: I think it's a process. Because it definitely takes a while to kind of nurture it, it's not something you just wake up and have. Everybody has creativity to a point, but not everybody knows how to express it, it's the expressing and the using of it that needs to be nurture, brought out, allowed to develop. So it is a process, actually it's probably a little bit of both, process and product, because it comes partly from the environment they are in, if they are allowed to do it, to have creativity, but I would say it's more of a process, because it is something that has to be developed.*

*Teacher 8: Absolutely [...] (stated 2 times)*

*Teacher 8: Ummm [...] (stated 3 times)*

*Teacher 8: Definitely [...] (stated 3 times)*

*Teacher 8: I do not know [...] (stated 3 times)*

*Teacher 8: To a point, but not really. I always thought it was very creative of my brother to take apart toys, because he always knew how to put them back together again. To be able to take them apart to see how they worked, I thought that was very creative on his part, so his outlet for his creativity was, how can he take it apart, put it back together, and maybe make it more efficient? He would take apart a toy where the arm only went this far, and he would put it back together so the arm went all the way around. I think that mechanical side, that shows creativity too. And Dad builds buildings. He takes that mechanical aspect of things, but he also has to use creativity in a way to make the mechanical stuff work. He has to figure out where the ductwork goes. He works with guys in the field, and if there is a labor dispute, he has to figure out how to resolve that so that it satisfies everybody, and keep the building construction going. It's a different outlet, but still creative.*

*Teacher 8: Probably [...]*

*Teacher 8: [...] if they are exhibiting a lot of creative abilities [...]*

Teacher 11: Somewhat I enjoyed working on craft ideas but I would not have considered the activities to be real creative.

Teacher 12: [...] It's the process, not the product.

Teacher 12: [...] I guess I should change one of my previous answers [...]

Teacher 12: I just hope that I have the right idea about what creativity is. I'm not sure I understand [...].

Teacher 12: [...] I think some people are more creative than others, definitely.

Teacher 12: I don't know [...] (stated 6 times)

Teacher 12: Hang on, let me think [...]

Teacher 12: I can't remember what I said [...]

Teacher 12: Oh, sure! (stated 5 times)

Teacher 12: Oh boy! [...] (stated 2 times)

Teacher 12: Hmmm [...] (stated five times)

Teacher 12: Wow [...]

Teacher 12: Oh my gosh! [...]

Teacher 12: I don't know, I think that one just jumped out at me [...]

Teacher 12: [...] Let me think [...]

Teacher 12: Pause (3 times)

Teacher 12: definitely [...]

Teacher 12: I hope so [...]

Teacher 12: [...] I'm not sure why I wrote that one down.

Teacher 12: [...] Why did I cross that out?

Teacher 12: 1: As a parent, and having a child at the age where I can see all these things developing, and he's learning, and going to school, I would say 75% of that checklist I could relate to my personal experience. Other times I was thinking about kids in my class.

Teacher 12: Oh boy! Some of that reminded me of me when I was little, or me in what I do now [...].

Teacher 12: Maybe it was an accident, but I found myself thinking about him more than myself. As a parent, my son is six, so it is still new to me, some of the questions brought back memories, "Oh, I remember doing that when I was little," but I can't remember all my childhood.

Teacher 12: Sure, they both are [...]

Teacher 12: Sure, I was fortune to have a very artistic/ creative mother [...].

Teacher 18: Probably not (not creative) as much as I would like to think because of a shy personality.

Teacher 24: [...] Now, me as a parent, I anticipated that, but I don't think I really connected my own growing up and upbringing.

Teacher 24: I do not know (stated 10 times)

Teacher 24: [...] I'm not sure I could come up with a measurement tool that would show, because again I think some children are creative and are just not able to express it. I don't know how much creativity is in their mind, but they are thinking, they are just not able to express it.

Teacher 24: Yes and no [...]

Teacher 24: I'm not sure, because once the kids leave me, I don't really get to see how they are performing [...]

Teacher 24: No. No. Other than the parents' recognition [...]

Teacher 24: Oh, no. I do feel there are different levels of creativity [...]

Teacher 24: It's got to come from somewhere! So I don't know if it's something children just, I've never really researched creativity, so I don't know if some children are born creative, for some reason I don't think that's the case [...]

Teacher 24: Sure! [...]

Teacher 24: Exactly [...] (stated more than 2 times)

Teacher 24: Yes. Yes [...]

Teacher 24: Shyness with regard to creativity? That's difficult to see [...]

Teacher 24: (She laughs) Well, you know [...]



Teacher 24: I personally do not think it's related, I think it is more related to your self esteem, and your ability...I don't know, I really don't know, because growing up I did bite my nails [...]

Teacher 24: [...] I don't know if children today would be able to do that, if they did not have the real object in their hand, I don't know how many of them would be able to come up with another symbol or another way of representing that object [...]

Teacher 24: Wow [...]

Teacher 24: [...] And I don't even know how I would rate my children on the degree of creativity in a child. I'm not sure I could come up with a measurement tool that would show, because again I think some children are creative and are just not able to express it. I don't know how much creativity is in their mind, but they are thinking, they are just not able to express it [...].

Teacher 25: Art in general, you mean? [...]

Teacher 25: I think there is a great deal of potential; I think all children are creative [...].

Teacher 25: Not really. I have seen children with high aptitudes in math that were not that interested in art. But often they do have an aptitude for music. So I don't know if you can pinpoint one aptitude and say, "This is the attribute that means this child is very creative." I have observed children of all types, across the board [...].

Teacher 25: Not really. I can't think of an attribute that would be consistent in that way. We have had a variety of children who are still going on and doing art now, but I can't say that they have had one attribute in common.

Teacher 25: Umm hmmm. (stated 2 times)

Teacher 25: I can't think of anything off hand. I can't say I came from a particularly creative school....

Teacher 25: Oh, I don't know that I was supported much by school or family [...].

Teacher 25: I don't know if it is taught or encouraged [...].

Teacher 25: [...] The product is not necessarily the goal, the process is more important.

Teacher 25: [...] I am not sure how to answer that.

Teacher 25: That's one of the big ones, I think. (She pauses to think) I can't think of any off hand.

Teacher 25: I haven't really run into anyone like that, someone who always feels guilty.

Teacher 25: Some kids go off on a tangent, and some tangents are very logical, but I don't know that logical thoughts make a difference in creativity one way or another. Kids who jump from one thing to another without any apparent logic can be very creative.

Teacher 25: I don't know, I haven't followed any of them through to adulthood. The jury is still out on that one.

Teacher 25: Is it nervous kids we are also interested in. I don't find a lot of correlation between that and creative behavior [...].

Teacher 25: [...] But I did not find many children I would consider to be totally non-creative.

Teacher 25: Let me think of examples. Ummm, sometimes kids will go through regressive behaviors when [...]

Teacher 25: That's because there is no option to say. I don't think it matters, I could only answer yes or no [...].

Teacher 25: I don't know why I crossed that out. (Pauses to think). Oh yes, because I disagreed with it. [...].

Teacher 25: I don't know why I read it like that [...].

Teacher 25: [...] I guess I don't understand that question [...].

Teacher 25: [...] I don't know that it makes any difference [...].

Teacher 25: I'm trying to interpret it. [...]

Teacher 25: I guess [...] (stated 6 times)

Teacher 25: I don't know how I interpreted that (Laughs) [...].

Teacher 25: I don't see a lot of kids do that actually. I don't know that pre-school kids do that.

Teacher 25: Yeah, I guess I was confused about that one too. I don't know what to say about that one, because I don't see it a lot [...].

Teacher 25: I Suspect [...]

Teacher 25: Oh, a process, for sure, very process oriented. We are coming from a school that is process oriented, not product oriented. Process is everything.

Teacher 25: In my opinion, all children are creative [...].

Teacher 25: It can be something as simple as finding a different solution to a problem, that is creative, but that is more socially creative than artistically creative. I am not sure how to answer that.

Teacher 27: [...] All children can grow in creativity by participating in chosen art and dramatic play given a flexible time frame, access to good materials and open ended art activities [...].

Teacher 27: It is important to value the process of color selections child made shapes rather than emphasizing the end product [...].

Teacher 31: She (my daughter) is 3 yrs old and it is difficult to judge creativity at this age. She is highly intelligent and plays well by herself. She speaks with her animals/dolls, she draws, sings and writes her own songs. For her age, these are probably creative signs.

Teacher 39: Somewhat, I can remember being concerned with others' expectations and wanting to do things "by the book" [...].

Teacher 41: I believe that every one, young and old, have some kind of creative side to them. You just have to look for it.

Expert 2: Many of these items (e.g. # 19-fails to follow directions) could signal creativity as well as a host of other attributes or issues. A creative child might shy away from specific instructions as to how to complete a task. But so might an ADD child or a child with insufficient ability etc. what I am trying to say is that many of these items could have multiple connections/root causes. See also especially items #14 (Rules breaking), 29 (Being very ambitious), 33 (Illogical thoughts), 59 (Lack of interest of attending school, 60 (Ignorance of safety rules), 64 (Expression of own feeling), 76 (Authentic preparation and planning), 77 (Nervous habits), 91 (Moving from one activity to another), 92 (Refusing to do assignments), 100 (Difficulty in making or keep friends), 103 (Interrupting the current activity), 106 (Stubborn behavior), 104 (Sadness), 118 (Delay in any aspect of development), etc. As I filled out the checklist, I gave a check to any item that might (at least in some cases) signal creativity. Of course many of these items might be used to describe highly intelligent or even OCD (obsessive compulsive children) or even emotionally disturbed children.

Expert 4: Also true of uncreative (item #59 Lack of interest of attending school). An "X" sometimes means there is no relationship with creativity, not it indicates "uncreative".

Expert 6: I wonder about the use of very, in everything, frequently, many, highly, no, prefers, strong in the indicators. It was really hard not to mark them all Yes! [...].

Expert 11: Possibly (items # 92 Refusing to do assignments, # 107 Acting out from memory, #117, Working effectively on an individual basis, # 118 Delay in any aspect of development, # 141 Joking about teachers or peers, #142 Finding new functions for useless things, # 144. Slow pace in acquiring information, #148. Identification with media figures, #159. Classifying unrelated things, #164. Low achievement level, #170. Advanced vocabulary use, #179. Teasing

behaviors, #187. Questions unrelated to present context, #190. Dramatic play at inappropriate times, #197. Being the first to respond, #203. Drawing the same object from different perspectives, #213. Manipulation or mastering of materials, #214. Exploring using sensory impressions, #218. Preferring to play with younger or older ones, #227. Responding greatly to music).

Expert 11: Not sure (item # 145. Being very proud of his/her performance)

Expert 11: Many of these (creative behaviors) depend on the child's particular domains of gifts and talents.

Expert 13: [...] In my mind, some items indicate creativity (finds a new function), some are precursors to it (must be present if one is to be creative...for example, "inquisitiveness"), and some might be outcomes of being a creative person [...].

Expert 13: [...] A vast number of items found me saying to myself "it all depends". I need more information on circumstances and factors so that I can exclude psychotic behavior (like in #1- Uncommon questions or ideas), etc. I wonder too, if my own area of expertise/study (kids with emotional and behavioral disorders) influenced my reading and understanding of the items [...].

Expert 13: I sometimes wished that there was a "sometimes" choice, but I realize that research often involves the forced choice, either-or format [...].

Expert 13: [...] I found myself thinking that non-creative kids might sometimes display traits that I considered to be creative.

Expert 15: Sometimes (for items: Prefers to play alone, Exhibits advanced vocabulary use)

Expert 15: By word yes/usually writing no (for item: Elaboration)

Expert 18: Many of these behaviors could be checked either way [...].

Expert 19: Depends on context (Some of these behaviors)

Expert 20: [...] Too many factors and emotions are being questioned (in this checklist). Some children with emotional and cognitive disorders are creative, others may not be.

Expert 23: A lot of your points (items on the checklist) could relate to creativity but could also be related to other causes such as problematic family situations [...]

Expert 25: It seems that many of the characteristic described in the survey could relate to kids who are ADHD. These kids/many times are very creative but also can be quite disruptive [...].

Expert 26: [...] I found myself referring to people/children I know to be creative in order to answer the questions [...].

*Expert 27: I began to just read to see if there were particularly any I would say no to. I have realized I am looking at each of these as a characteristic of a child and that any could be parts of or signs of a child's individual creative self [...].*

*Expert 27: [...] But sorry I have knew thousands of children as teachers and the teachers often complain of just such behaviors as you have listed-they may be very creative children-but may not. That would be specific to them but all of your criteria could be someone's sign or view into their creativity.*

*Expert 31: I feel there is not one description of a creative student [...].*

*Expert 32: [...] I attempted to make a start on the checklist on the checklist on two spate occasions and found that I couldn't honestly check any of the items given as true determinants of creative behaviors in young children-or not. None of the items could be checked in isolation and I felt that a creative child might very well exhibit some of the behaviors or perhaps not show evidence of the behavior at all [...].*

*Expert 32: [...] I really gave the checklist another try and responded from the view point of looking at the traits as those that may relate to creativity in young children. I still ran into stumbling blocks when I looked at an item such as "makes unstructured or artless drawings". Is something "unstructured" considered "artless"? Is it possible that a creative child might exhibit any of these behaviors? The answer I came up with was, "Yes". Therefore I would have to check every single item on the list as possibly relating to creativity [...].*

**Table 4: Recognition Level For Creative Behavior**

The following table, Table (4), represents the recognition level for creative behavior, illustrated in percentages, to compare teachers' and experts' responses in order of how behaviors are represented in the Creative Behavior in Young Children Checklist.

<i><b>Creative Behavior</b></i>	<i><b>Percentages of recognition by experts</b></i>	<i><b>Percentages of recognition by teachers</b></i>
1. Uncommon questions or ideas	94.1	95.1
2. Seeking recognition or prizes	23.5	29.3
3. Frequent imitation	38.2	52.5
4. Wrong starts in performance	64.7	65.0
5. Uncertainty in many cases	38.2	29.3
6. Misbehavior	44.1	65.0
7. Artless drawing	70.6	85.4
8. Sympathetic behaviors	61.8	55.0
9. Unique analytic ability	93.9	87.5
10. Unexpected frustration or anger	44.1	41.5
11. Excessive guilt feeling	9.1	17.1
12. Number manipulation skills	67.6	75.0
13. Refusing to join group	35.3	32.5
14. Rule breaking	47.1	65.9
15. Mental risk taking	91.2	92.7
16. Loving to be surprised	72.7	82.9
17. Falling asleep during activity	8.8	19.5
18. Great identification with adult characters	64.7	82.9
19. Failure to follow directions	41.2	61.0

20. Cheating	23.5	27.5
21. Distinguished verbal fluency	79.4	82.9
22. Description of things that do not exist	97.0	97.6
23. Over-activity	45.5	61.0
24. Sensitivity to criticism	44.1	53.7
25. Help, co-operation, and sharing	44.1	61.0
26. Clowning behavior	75.8	90.2
27. Magnification of certain experiences	90.9	95.0
28. Independence	85.3	90.2
29. Being very ambitious	62.5	73.2
30. The desire to surpass	70.6	70.7
31. Devising new games	97.1	100.0
32. Uncommon uses of everyday items	97.1	100.0
33. Illogical thoughts	55.9	85.0
34. Favorite ways of learning	51.5	65.8
35. Acting in a heroic manner	33.3	52.5
36. More interest in physical play	36.4	42.5
37. Fault-finding	8.8	31.7
38. Easily bored	64.7	61.0
39. Unpredictability	73.5	82.9
40. Self-reinforcement behaviors	61.8	64.1
41. Aesthetic sense	87.9	92.7
42. Lying	31.3	57.9
43. Alertness	61.8	71.8
44. Single-mindedness	42.4	37.5
45. Reading unusual books	81.8	82.5
46. Quick mood changes	41.2	42.5
47. Omission of toys' parts	66.7	72.5
48. Interest in problem solving	97.1	100.0
49. Wonder and surprise at things	91.2	97.6
50. Frustration when being unappreciated	44.1	47.5
51. Nail-biting	14.7	19.5
52. Telling fantastic stories	85.3	97.5

53. Preference of silence	67.6	73.2
54. Seeing hidden relationships	90.9	94.9
55. Effective engagement in groups	53.1	63.4
56. No accepting of failure	41.2	51.2
57. Pride of ownership and enjoyment of values	58.8	68.3
58. Fast or unclear or hesitant speech	40.6	52.5
59. Lack of interest of attending school	38.2	32.5
60. Ignorance of safety rules	36.4	35.9
61. Making unusual comparisons	91.2	97.5
62. Questions about existence	88.2	92.3
63. Becoming pre-occupied	64.7	70.7
64. Expression of own feeling	36.4	51.4
65. Interest in magic activities	79.4	95.1
66. Questioning authority, rules, or evaluation criteria	79.4	75.6
67. Attention to unusual details	96.9	97.6
68. Touching things	51.5	58.5
69. Burning interest in machines	78.8	92.5
70. Daydreaming	97.1	90.0
71. Repetitive play or practice	47.1	51.3
72. Drawing divergent emotions	81.8	82.1
73. Aggression	9.1	25.0
74. Learning blocks or disabilities	26.5	27.5
75. Loving of adventures	100.0	95.1
76. Authentic preparation and planning	70.6	87.8
77. Nervous habits	17.6	22.0
78. Physically risk taking	44.1	63.4



79. Being easily upset	32.4	41.5
80. Unique observations or comments	91.2	97.6
81. Influential decision-making skills	67.6	78.0
82. Strong memorization ability	58.8	61.0
83. Preference for playing alone	57.6	56.1
84. Taking things or toys apart	87.9	87.8
85. Self-criticism	41.2	53.7
86. Doing things his/her own way	52.9	65.9
87. Tricky behavior	44.1	62.5
88. Frequent requests for advice or support	50.0	61.0
89. Acts as a character	85.3	95.1
90. Devising unconventional solutions	94.1	97.6
91. Moving from one activity to another	55.9	57.5
92. Refusing to do assignments	29.4	22.0
93. Organization and mess	60.6	68.3
94. Hard time adjusting to change	27.3	19.5
95. Desire to control toys and activities	32.4	46.2
96. Unconventional formats when cutting materials	88.2	97.5
97. Devising new rules for common games	97.1	100.0
98. Jealousy	12.1	14.6
99. "why", "how", or "what if" questions	100	92.7
100. Difficulty in making or keeping friends	25.0	12.5
101. Seeking affection or appreciation	24.2	36.6
102. Engagement in real-life experimentation	100	100.0
103. Interrupting the current activity	26.5	27.5

104. Sadness	29.4	24.4
105. Sensitivity to responsibility	27.3	28.2
106. Stubborn behavior	35.3	42.5
107. Acting out from memory	85.3	97.5
108. Reversing of toys' parts	82.4	85.4
109. Devising workable ideas	79.4	90.2
110. Tiredness in certain situations	29.4	30.0
111. Expression of reactions with sounds	54.5	70.7
112. Exaggerating perceptions of others' responses	48.5	55.0
113. Engagement in more than one activity	78.8	78.0
114. Awareness to missing or unknown information	73.5	80.5
115. Acting in a very protective way	32.4	36.6
116. Future orientation	50.0	68.3
117. Working effectively on an individual basis	63.6	58.5
118. Delay in any aspect of development	26.5	17.5
119. Self-descriptive behaviors	51.6	56.1
120. Loving of being challenged	59.4	68.3
121. Unusual curiosity	93.9	100.0
122. Interest in directing others	55.9	78.0
123. Impulsive behavior	47.1	61.0
124. Sensitivity to lack of fairness	50.0	48.8
125. Interest in leadership	61.8	73.2
126. Involvement in long-term goals	73.5	85.4
127. Regressive behavior	14.7	22.0
128. Unusual concerns about others	47.1	31.7
129. Off-limit behaviors	51.5	56.1

130. Unusual thinking style	73.5	70.7
131. Suggestions of different activities other than current	85.3	95.1
132. Short attention span	55.9	65.9
133. Continuing play after time limit ends	50.0	58.5
134. Body movements or gestures during communication	63.6	90.0
135. Acting as initiator of change	72.7	87.8
136. Unusual drawing for age group	88.2	95.1
137. Striving for perfection	36.4	45.0
138. Unusual interests	73.5	89.7
139. Verbal recalling of adult's directions	33.3	46.3
140. Sharing opinions or making judgments	61.8	68.3
141. Joking about teachers or peers	26.5	87.8
142. Finding new functions for useless things	94.1	97.6
143. Easygoing when engaged in what interests him/her	58.8	61.0
144. Slow pace in acquiring information	39.4	31.7
145. Being very proud of his/her performance	55.9	65.9
146. Setting own rules for play	82.4	87.8
147. Refusing to get help	35.3	36.6
148. Identification with media figures	36.4	56.1
149. Being defensive and ready to fight	26.5	36.6
150. Fond of making up surprises	85.3	90.2
151. Being intuitive	94.1	97.6
152. Unexpected responses to certain questions	94.1	92.7
153. Involvement with imaginary playmate	88.2	90.2

154. Self-focus	35.3	45.0
155. Unexpected mistakes	36.4	31.7
156. Little or no interest in others' opinions	11.8	39.0
157. Frustration when assigned repetitious tasks	58.8	58.5
158. Unusual ability to form figures	88.2	95.1
159. Classifying unrelated things	85.3	95.1
160. Depression when recognizing failure	39.4	27.5
161. Playing with natural materials	78.8	87.8
162. Solving a problem with limited information	94.1	90.2
163. Self-motivated behavior	72.7	72.5
164. Low achievement level	21.9	19.5
165. Critiquing others' behaviors	29.4	48.8
166. Being lost in certain contexts	26.5	17.5
167. Thump-sucking	8.8	12.2
168. Thinking of impossible ideas	84.8	85.4
169. Unusual play or use of toys	91.2	97.6
170. Advanced vocabulary use	73.5	80.0
171. Making atypical constructions	88.2	97.6
172. Burning interest or deep love of something	76.5	61.0
173. Ignoring what is happening around	50.0	51.2
174. Meta-cognition and self-correction skills	67.6	61.0
175. Repeating the whole thing when interrupted	23.5	34.1
176. Concerns of being perceived as crazy	26.5	19.5
177. Playing back experiences	32.4	41.5
178. Valuing privacy	50.0	29.3

179. Teasing behaviors	26.5	29.3
180. Viewing traditional things in uncommon ways	91.2	90.0
181. The belief in the value of his/her play	55.9	58.5
182. Inconsistency in ideas or emotions	41.2	45.0
183. Deep involvement in play	64.7	70.7
184. Forming new relationships	88.2	92.5
185. Producing many ideas related to one thing	94.1	97.6
186. Changing a known story	97.1	100.0
187. Questions unrelated to present context	61.8	62.5
188. Being responsive to art activities	79.4	87.8
189. Showing illness	23.5	17.1
190. Dramatic play at inappropriate times	70.6	78.0
191. Dislike of doing certain tasks	37.3	34.2
192. Transformation of toys	88.2	95.1
193. Using symbols to demonstrate ideas	91.2	95.1
194. Observable weaknesses	20.6	25.0
195. Verbalization of self-feedback aloud	35.3	46.3
196. Preference for harder tasks	55.9	70.7
197. Being the first to respond	52.9	65.9
198. Shyness	18.8	25.0
199. Obsessive engagement	52.9	55.0
200. Experimentation with his/her imagination	100.0	97.6
201. Having own evaluation criteria	66.7	80.5
202. Unconsciously forgetting	88.2	75.6
203. Drawing the same	76.5	97.6

object from different perspectives		
204. Unusual awareness of others' characteristics	70.6	82.9
205. Uncommon ability to elaborate	84.8	85.4
206. Tolerance of missing or incorrect things	72.7	80.5
207. Laziness and slow pace	29.4	27.5
208. Acting as if a story character is alive	84.4	87.8
209. Combining parts to form novel wholes	85.3	87.8
210. High anxiety level	21.2	30.0
211. Intervention to solve problems	55.9	56.1
212. Powerful logical thinking	61.8	53.7
213. Manipulation or mastering of materials	73.5	75.6
214. Exploring using sensory impressions	82.4	90.2
215. Asking unconnected questions	63.6	73.2
216. Trouble-making	20.6	41.0
217. Playing at unexpected times	73.5	68.3
218. Preferring to play with younger or older ones	55.9	53.7
219. Skills in making guesses or hypotheses	85.3	82.9
220. Acting different than expected for sex norms	67.6	51.2
221. Recalling early years' experiences	48.5	48.8
222. Enjoying being in charge	52.9	51.2
223. Forming new organizational patterns	85.3	95.0
224. Being ready to stand alone	67.6	58.5
225. Adding parts to a toy	85.3	90.0
226. Strong need to feel welcomed	38.2	31.7
227. Responding greatly to	82.4	92.7

music		
228. Self-centered perspective	79.4	90.2
229. Expanding the set goal	26.5	40.0
230. High spirits and dedication	76.5	70.7
231. Writing longer stories	78.1	85.4
232. Rich imagination	100.0	97.6
233. Loving of rearranging or change	85.3	89.7
234. Primitive behavior	14.7	19.5
235. Unusual interaction with toys	82.4	87.8
236. Having difficulty working in groups	38.2	22.5
237. Generalization of ideas from specific information	73.5	72.5
238. Persistent trial and error practice	61.8	75.6
239. Substitution or displacement of parts of a toy	91.2	95.0
240. Awareness of or seeking problems	76.5	75.0
241. Instant, spontaneous verbal or non-verbal expression	44.1	48.8
242. Confidence of his/her abilities	50.0	51.2
243. Acting very determined	55.9	68.3
244. Relaxing or becoming distracted	41.2	46.3
245. Playing during the delivery of instructions	47.1	48.8
246. Engagement actively in own play	67.6	78.0
247. Strong ability to concentrate	76.5	65.0
248. Not paying attention to the set order	61.8	65.9
249. Self-direction	82.4	80.5
250. Producing different designs or products	97.1	100.0

251. Performing impressively in time-limitless activities		70.7
252. Impoliteness		19.5
253. Ability to read others' emotions and attitudes		73.2
254. Valuing social relationships		48.8
255. Acting uncooperative		43.9
256. Problems with possessions		24.4
257. Difficulty focusing on fine points		29.3
258. Cleverness in reading maps		70.7
259. Being excitable at times		70.0
260. Learning complicated concepts effortlessly		46.3
261. Weakness in activities involve listening skills		36.6
262. Rejecting conformity		75.6
263. Prominent compositional skills		65.9
264. Fears of losing loved ones		26.8
265. Spending long time in life activities		78.0



#### **Research Question 4:**

#### **(4) What are some of the misconceptions that teachers believe regarding how creativity is manifested in young children?**

Through examining data collected in this research study, many misconceptions have been commonly noted among participants' beliefs about creativity. Also, participants have reported there to be widespread misconceptions about creativity in people in general and in experts and teachers specifically.

These misconceptions are as follows: creativity is limited to art; there are uncreative persons; creativity is a bad thing because it takes kids off task; it is bad because it makes them think differently or veer from the status quo; it is fearful for some people because if you pursue it sometimes you will be outside the rules, which puts you at risk of making mistakes and doing things the wrong way; it is not the safest way to do some things; creativity is not applicable or cannot be involved in all cognitive skills or all domains--for example, mathematic skills as well as science are different than creativity skills; creativity is limited to certain abilities, skills, and domains; creativity can applied more in science more than in math; creativity is connected to only one side of the brain; persons who are creative in certain areas are not creative in the other areas; there are some creativity skills that involve certain types of creativity and not others, for example, finding a solution to a problem is more related to social creativity than artistic creativity; creativity can't change the proven or established or known facts; creativity is not teachable because it is inherent, so creative children want to do things on their own according to their inborn nature; non-creative kids might sometimes display traits that considered to be creative; some persons perceive creativity as a product rather than as a process; creativity in art

needs more imagination than in any other fields; there is no correlation between sadness, and depression with creativity in general; the best way to nurture children's creativity is to provide them with different materials to do experiments; when children are building with blocks, they just play and do not create because creativity is not involved in building blocks; sympathetic behavior is not a criteria for creativity, it is criteria for socialization; physical skills can't be included in creativity; self reinforcement behaviors are not related criteria for creativity; feeling lazy and bored means that you are not creative; acting as a hero is just attention seeking behavior and not related to creativity; analytic skills are different than creative skills; playing video games is not a learning activity; creativity is just connected to leadership, good analytical skills, initiative, ability to focus, and independence; creativity is just crafts; creativity is only risk taking or going beyond the norm; high anxiety or feeling insecure, uncomfortable or shy all are not connected with creativity; creative skills means cognitive skills; older children's creative skills or behaviors are different than the younger ones; lack of interest in joining school might be a true behavior of uncreative children; children can't learn through play; creative children are not the brightest ones; advantaged children by interventions are not the creative gifted ones.

Reasons beyond these misconceptions as reported by participants include: Creativity is misunderstood; teachers' attitudes, beliefs, and background, including their personal experiences such as family experiences, how they have been raised, and their professional experiences; personality styles; and thinking styles.

### **Misconceptions of creativity**

*Teacher 1: [...] No, (I am not creative) when I was lazy and bored.*

*Teacher 3: All the time-that's attention seeking and not being true to one's own identity. (for item: Acts in a heroic manner)*

Teacher 7: Not a criteria for creativity; socialization criteria (for item: sympathetic behavior)

Teacher 7: Can't physical creativity be included in "creativity" (More interests in physical activities)

Teacher 7: not related to criteria (for item: Self-reinforcement behaviors)

Teacher 8: Analytical skills are different than creative skills. (for item: skills of manipulating numbers)

Teacher 8: this may depend on what the child would rather be doing instead (i. e: playing video games vs. learning on own) (for item: lack of interest in school)

Teacher 8: They just may not like that creativity takes them away from the status quo. It makes them think differently, outside the rules [...].

Teacher 8: Exactly. Some people, this is the way things are, this is the way material works. And it's dangerous to some people when they find other people who think outside the box, outside the rules. It could be fear that suddenly the rules won't apply anymore, or that something might go wrong because they are not doing things the way they have always been done, they are coming up with a different way of doing things, and it may not be what is considered the safest or most effective way of doing things. And that is just their opinion, because maybe the creative way is a better way of doing things, but another person thinks that the way it is always been done is the best way to do it. So creativity can be misunderstood, and that can go back to the teacher's experience, if the teacher was brought up in a creative environment, then they understand the benefits of creativity. If the teacher was brought up very strict, very rigid, this is the way you have to do things, then they are less likely to allow for creativity in their students, because they don't want to wander from the status quo that they have been raised with.

Teacher 8: Definitely, mathematical skills are very different (from creativity) [...].

Teacher 8: Math is very finite. One plus one equals two. And no matter how many different ways you look at it, it's not going to change. One plus one equals two. That's the way it is. And I think creativity is considering, "One plus one might not equal two". I think it is very difficult to say that the two (types of thinking) are the same. First of all, there are two sides to the brain, and usually people who are skilled in one area have difficulty with the other. If you are very creative, you often have trouble with math and science. I consider math and science analytical, in my definition they are very structured and rule-oriented. This is how things are. One plus one equals two, there is no way that is going to change. You can look at it a different way, but it is very difficult to say that math and science have a lot of creativity behind them. They are fact-oriented, and creativity is "What if?"

Teacher 8: [...] But again, it's taking the analytical and saying, "What if?" It's adding something to it. Math is very difficult. Science lends itself a little bit more to creativity, because you can take... I just think creativity helps science more than it would help math. I think creativity does have a slight bit of the analytical to it, it can help turn the direction of the creativity, but no

amount of creativity is going to change the fact that water helps things grow. Or that DNA is put together a certain way. No amount of creativity is going to change the way our DNA is put together. Those are facts. There are some things creativity cannot alter. Creativity can help you look at things in different ways, or learn about things from a new perspective, but it won't change the facts.

Teacher 8: I think it is, because teachers often tend to think that creativity is a bad thing because it takes kids off task. And sometimes teachers have a hard enough time keeping kids on task and get the material covered. They think creativity might be bad because it takes them away from the material they need to be learning at that time.

Teacher 10: [...] many of them (creative behaviors in the checklist) I would consider good, healthy and worthy of encouragement, but just not fitting under my definition of creativity-more like leadership, good analytical skills, initiative ability to focus, independence, etc.-so I marked those with an "x".

Teacher 10: [...] It is a struggle to nurture that and at the same time structure curriculum with specific lessons we think they should learn that they can't learn from play. For every neuron pathway cemented by mastery of a skill, another deteriorates from disuse-or so it seems.. So it is always a delicate balance.

Teacher 11: Somewhat I enjoyed working on craft ideas but I would not have considered the activities to be real creative.

Teacher 12: [...] I could see where an uncreative person, like my mother-in-law, might not understand, or maybe she is just a little jealous, how we can do things better than her, "How can you do that? I can't believe you came up with that!" It is a little sad that she is not able to come up with ideas on her own. I guess it is hard for her when she is around creative people.

Teacher 15: No I was not a risk taker and we were not encouraged to go away from the norm.

Teacher 18: Probably not (not creative) as much as I would like to think because of a shy personality.

Teacher 22: No (I do not considered myself as have been a creative youngster).

Teacher 24: [...] Well, I think teachers may only look at creativity only as (something) in the arts, and I feel that creativity can be found in everything the kids do. Some teachers may feel that kids are not being creative, they are just building. And maybe for them they feel that creativity is only expressed through the arts, or music or drama, and again, I feel they are being creative all the time, in their interactions with other children, not just in the classroom, but outside class too. Some of the games they may create when they are playing with their peers, some of the tools they may use, they'll come up with a stick and say, "This is my cane," or "This is my kite," or whatever they want to use that for, so that they can use different materials to represent different objects. So I think teachers may limit themselves in thinking about what creativity is.

Teacher 25: Art in general, you mean? [...]

Teacher 25: Well, for instance, it seems that children who are musically inclined tend to also be good in math. I think there are some correlations between aptitudes, and the ways that a child can become creative I also think there are associations between art and math, geometry, I think that is a necessary part of art. Some of those behaviors have always been associated.

Teacher 25: [...] finding a different solution to a problem, that is creative, but that is more socially creative than artistically creative [...].

Teacher 25: I think sometimes adults look too much for the product and not enough at the process that went into it. If the child is at a young age, I think you have to look at the process. Some parents will look for that product, "What have you drawn for us today?" Meanwhile this child may have tried ten different things and not like the way they turned out, thrown them away, and not have anything to show at the end of the day.

Teacher 25: Yes, art needs more imagination.

Teacher 25: There was a statement in there, something about math not being an indicator of artistic creativity, and I disagreed with that, because I think children who are talented in math can be very creative.

Teacher 25: I guess I didn't find a correlation one way or the other, sometimes kids are sad, but I don't think we have had a child who has been sad all the time, or depressed, you just don't see a lot of that at this age. No correlation in general.

Teacher 25: I can't think of anything offhand, those would be my two big recommendations, to get rid of cookie-cutter art and coloring books as much as possible, and give kids a lot of different materials and a blank slate, to experiment with. I'd like to see more of that.

Teacher 25: I still ran into stumbling blocks when I looked at an item such as "makes unstructured or artless drawings". Is something "unstructured" considered "artless"? Is it possible that a creative child might exhibit any of these behaviors? The answer I came up with was, "Yes". Therefore I would have to check every single item on the list as possibly relating to creativity [...].

Teacher 28: Yes (I was a creative youngster), when I felt comfortable I was creative. I was a little shy and did not like to take the lead. But I started dancing and realized how much I loved it and my insecurities seemed to go away. My love for dance expanded my horizons and made me more creative and outgoing. I was always dancing, singing or acting.

Teacher 32: Many of the Xs are because the statement –for me-indicates an older child's cognitive or creative skills.

Expert 4: Also true of uncreative (item #59 Lack of interest of attending school).

*Expert 8: Nearly impossible to teach due to (apparently inborn) need to do things his/her own way.*

*Expert 13: [...] I found myself thinking that non-creative kids might sometimes display traits that I considered to be creative.*

*Expert 31: I feel there is not one description of a creative student. It could be the quiet one by themselves. It could be the one always in charge of his group. It could be the most intelligent one in the class. But often is not the brighter one. Even a student with a learning disability could be very creative in other areas. When working with pre-school and primary it is difficult to determine what student is gifted or is he just “advantaged” by interventions. It is difficult to say is a child is a discipline problem or using his creativity.*

## **Research Question 5:**

### **(5) What are the factors and conditions that influence children’s creativity?**

Factors and circumstances that influence the expression of creative behavior expression in young children are a critical issue. Factors such as heredity, inborn traits, the environment, and the interactions between them are commonly considered to strongly influence creativity. Some participants believed more in the inborn factor alone when considering creativity, which lead them to have one major misconception about creativity, which is that a teacher cannot teach it because one does not have an influence since creativity is inherited--it is a special gift for certain persons. Other participants believed more in the environment influence and the necessity for nurturing creativity beginning at a very early age. Others believe in the interaction between both of them; heredity and the environment are both significant.

## **Heredity**

Regarding heredity; some of participants’ responses stated that if any of the parents or

family members were creative, the child would be creative, and that all human beings are creative by nature.

## **Environment**

The environment has been examined into two major contexts: the home environment and the school environment. In general, some participants believe that very early experiences since birth greatly influence creativity manifestations in the classroom. Adults' roles in providing both appropriate and supporting physical and psychological environments are a very significant factor for fully nurturing children's creative potentials. Other environmental factors include how rigid is the authority of the environment and how much importance the child's environment places on the goal of creativity. If children's creativity is nurtured or stifled; if children are raised up to be creative or doing things by the book; and how much opportunity the child gets to explore are important aspects when investigating children's environments in relation to promoting creativity. Teachers' and parents' roles have great influence--more than any other adults--in the development of children's creativity. This influence is illustrated by their support and sensitivity to the child's creative needs and interests, and their thorough investigation of the child's environment and their efforts to improve it to enhance children's creative abilities and development.

## **Home environment**

Regarding creativity and the influence of home environment; the following are areas of influence according to participants: parents' support and providing a home environment that meets children's needs and fully supports their creative development;

providing facilities, materials, and resources that give opportunities to nurture creative play; tolerance for creative play outcomes such as taking toys and things apart and drawing on the walls, etc.; encouraging children to read a variety of books and making them available in the home; storytelling and reading aloud to the child; real life experiences; being involved in problems solving situations; educating about resources for information including books or persons, or places; and having the freedom to open up everything is a magic key that helps everyone to be creative. Parents' hobbies, positions, jobs, and interests strongly influence nurturing children's creativity beginning in their early years of life. Parents' attitudes, beliefs, educational backgrounds, and experiences in relation to creativity are definitely critical factors for supporting creative behavior expressions in the home context. Parents' authority and a high level of control of children's creative behavior expression stifles creativity in children beginning at a very early age. Too many rules, a very structured environment, or too many restrictions kill creativity in the child and turn him/her into a "by the book" child who is scared to go beyond rules and expectations. This can be reflected in all of his/her personality traits, which can negatively influence his/her lifelong creativity. Parents' lack of knowledge, experiences, and exposure to a variety of creative expression outlets influences the way they bring up their children and how significantly they will value nurturing their children's creative expansion. Creating fun activities for children at home; going the extra mile to help children to find fun ways of learning, teaching them in a fun way; helping children to create things with the stuff available at home; being involved in children's play, and working with them on creative projects are other factors that influence children's creativity in home environment. Creative kitchen activities; outdoor activities; enjoying and creating extra-curricular activities; letting the children pursuing their own interests; being patient, loving, caring, open minded, and secure are



significant personality characteristics of parents that greatly empower creativity in children. Travelling a lot, seeing new things, enjoying knowing people, and visiting other family members are other important factors as reported by participants. Children's creativity becoming the focus and life goal of their parents, as well as encouraging children and praising them for the things they have accomplished are also important factors in the home. Experiencing frustration and problematic family situations at home may stifle children's creativity and may lead them to manifest problematic behaviors in other contexts such as school, which may influence their relationships with teachers and peers. Parents who allow freedom and who also act as role models of creativity by being creative themselves and by being effectively able to enhance their children's creative expression by acting as guides to their creativity are additional keys for children's creativity. So creative parenting, being sensitive to and appreciative of children's needs and expressions; keen observation and investigation of children's creative behavior, development, and play; learning from their creativity; facilities at home such as T. V., books, a farm, nature, or useless stuff; having many siblings to share and create play; appropriate child rearing approaches and positive parents' attitudes; listening to children's needs and letting them feel comfortable to request or express what they want; efforts to provide to them; being open to children's ideas and creating with them solutions to their problems; offering them suggestions and supporting them during play so they can reach their goals; encouraging children to think creatively; sharing diversity and thinking with them; encouraging them to use their imagination to solve problems or finish projects; parental expectations of children in relation to creativity greatly influences children's creative self images; necessity and hardship as a source of creativity development; how parents handle hardship, conflicts, problems in the family such as divorce, death, etc.; size of the family; birth order; gender; and gender of siblings. All of these

factors are powerful in influencing children's creativity, according to participants in this research.

## **School Environment**

The school environment is one of the most significant contexts, in addition to the home context, that affects children's inspired expression and growth. As participants in this study believed, the following practices have significant effects on creativity in children: reading stories imaginatively to a child, acting out these stories with children, free exploration with variety of materials, freely experimenting, free opportunities to use children's powerful imaginations and children creating and designing their own projects with few rules or patterns to follow. In addition, the creative aspects of the teacher as a creative person strongly influence their creative performance in the classroom. Rich previous teaching experiences in a teacher's pre-services years and in-services years are an excellent background for generating creative and fun activities. Today's current curriculum, however, still misses a lot of fun in learning, and there is also a lack of good innovative ideas coming into the classroom. Fun and innovation make learning interesting from a child's point of view, and this is a critical aspect of educational process: creating new ways or methods to do traditional things, or having diverse perspectives for viewing or presenting things. Inserting teachers' creativity into the teaching process is very important and essential for creative learning, because creative teachers can prompt students with thinking outside the box and applying creativity in all domains. How school is presented to children influences them greatly, and whether children go to school because they have to like everybody else, or because they are eager to learn and enjoy learning in school will affect how they realize the long term benefits and the value of learning across their lives. Teachers are the

most important element in school environment. They provide a variety of materials and tools that help expand children's creative expressions, and they create opportunities for creativity through play. As noted by several participants, the current curriculum does not have room for creative teaching with children or room for children's creative expressions, and balancing between the curriculum and creativity can be very hard, disappointing, and frustrating. It is a great struggle balance between the present curriculum requirements and creativity needs. Being concerned about others' expectations and judgments, especially teacher and peers and doing things "by the book", can negatively influence the opportunities for creative expression. Recognizing and nurturing creativity should be initiated in the very early years of a child's life. Teachers' attitudes, beliefs, and background, experiences have a great influence on their views, perspectives, and recognition level of creativity and creative behaviors manifestations, especially in young children. For example, to one teacher a strong-willed child is a discipline problem, while to another teacher they are a creative child who tries to express his/her creativity. Many uncreative persons are working as teachers, and this is one of the most serious problems. Teachers need to adjust their curriculum and consider the age level of their children when presenting subjects and materials in creative ways. By being open, friendly and nice with students, they can help children to relax and feel safe to ask the teacher a question or request help when it is needed. Teachers' sensitivity to children's behaviors and needs is important, along with their willingness to understand why children do certain behaviors before judging them as misbehaving or abnormal. Parents of creative children who raise their concerns about their children's creativity development and expression may have conflicts if they have an uncreative teacher who is not able to recognize creative behaviors when manifested by their children. Whether a child hates some areas or is strong in some subjects can depend on the teacher. Some

uncreative teachers stress the perfection of performance rather than creativity, which may stifle creativity during the learning process. Teachers need to encourage students to learn new things and find different uses of materials. Teachers need to further their own education by going back to school, professional development, and involving in research; teachers can learn about themselves as creative persons and their role as a teacher. According to participants' reports, the following practices and qualities are important for being a teacher who helps promote children's creativity in understanding their children's needs and behaviors: being an observant teacher and actively being involved in children's play; listening to children's dialogues; being smart about choosing when to be involved in their children's play; asking children open questions about their play, activities, projects, and needs; watching children and what they are doing and how they explore; viewing things from children's perspectives; having a background or a degree in early childhood education, human development, or any related field to children; having rich experience with children in the classroom; a teacher's own upbringing experiences, personality traits, teaching styles; and a teacher's own child rearing approaches. Recognizing that all children are creative and supporting each child to find his/her own means of creativity expression are fundamental roles that all teachers should be aware of. The pace of the learning environment, especially when it is slower than a child's abilities or expectations, puts children's creativity at risk. The physical, mental, and psychological learning environment and educational structure; the curriculum, any restrictions, and the level of accessibility to materials are other decisive factors that influence children's creativity in the school context. The classroom environment should allow a lot of messy and unstructured free play, as well as a lot of options and choices to open children's creative minds and enhance their personality's traits. Respecting children's own interests and what they want to do requires teachers being flexible and not rigid.

Teachers must think thoroughly and spend time to understand what is going in children's little minds. The limitations of time however can kill children's creativity; teachers face the problem of not having extra time to recognize and nurture children's creativity. With the present curriculum requirements, there is no extra time: children are not allowed to have extra time for activities or projects, or even to master skills or express their creativity. This can lead them to experience frustration or feel disappointed and depressed and choose to suppress their creativity. Schools stress achievement rather than recess and free play, which have been decreased or even eliminated in some school recently; diverse teaching strategies and styles and the appreciation of different learning styles; being visual/spatial learners and being misunderstood in school system; What we are after is not copies of adults' concepts, but the child's own concepts of the world. Multiage groupings sometimes benefit children's creative development.

Mislabeling is the most serious problem that creative children face. Today's society emphasizes using medication with creative children. Attention deficit disorder and learning disabilities are common labels that creative children are diagnosed with for their creativity. Teachers need to understand to let children do and create their own work, and not to do the whole creative work for them as teachers without giving them the opportunity to be actively involving. Behavior management and the fear of creative children acting out of control is one of the most common problems that both teachers and children face in a school environment. Practicing inappropriate behavior management techniques lead children to experience frustration and psychological problems, so they may suppress their creative potential, suffer conflicts and may harm themselves by choosing to be isolated and refusing to join group activities. Other reactions include nail biting, thumb sucking, etc. or expressing their creativity in negative ways such as being aggressive, lying, cheating, etc. Many creative behaviors in children

are often misunderstood and considered by teachers to be discipline problems. It is important for teachers to accept all types of children's behaviors and performance even if it is not perfect.

Punishment or emotional stress can be determining factors for children's creativity. There can be conflicts between expressions of creativity, anti social behaviors, and the ethics of creative expression.

One of the most common mistakes teachers make when dealing with children's behaviors is treating the symptoms and not the causes. Teachers do not try to understand the "whys" behind the behaviors. There is a serious issue of using medication as the easiest solution for disciplining creative children. It is important to justify the limitations for children and let children themselves judge the limitations and understand the reasons behind them. Teachers need to remain calm and objective when they react to children's behavior, even the problematic ones. Teachers should open conversations with children and discuss their problematic behaviors with them. Time out is not an effective solution to handle problems that children cause and should not be used as a way to manage children's behaviors. When observing children's play, teachers should note the behaviors that occurred before problems happened so teachers can prevent them from happening again and use redirection strategies as effective techniques for behavior management. The teacher to student ratio and teacher availability plays an important role in the process of behavior management. Teachers can express love, care, and warm feelings for their children and help them feel better. Teachers need to be aware of the fact that creative children are at risk when they are tuned out, shut off, or are turned down by their teachers. Teachers and creative children face conflicts between creativity and the limitations of time, safety, teaching responsibilities, and classroom performance expectations, all issues that influence behavior management. Teachers' pre-judgments of children's behaviors are misleading and ineffective. The class size, educational

policies, learning expectations, and evaluation techniques greatly influence practice in the classroom in relation to children creativity. Emphasizing achievement and learning standards rather than creativity can mean a focus on test grades and mastering some skills or domains rather than others, such as stressing cognitive skills and paying less attention to emotional or social growth and creativity skills. All of these concerns increase the stress and pressure on children, which puts their creative development at risk. Research greatly influences educational practices. The following areas need to be considered: age; developmental stage; grade level; readiness level for learning; a maturity; having a special needs, social pressure and influence of others' responses and feedback; the relationship between creativity and IQ; motivation, interest, and personality styles; and self image and esteem are all significant factors that need to be examined and highly valued in considering children's creativity in the classroom.

### **Factors that can influence children's creativity**

*Expert 13: [...] A vast number of items found me saying to myself "it all depends". I need more information on circumstances and factors so that I can exclude psychotic behavior (like in #1-Uncommon questions or ideas), etc. [...].*

### **Heredity**

*Teacher 3: [...] I come from a family of artists [...].*

*Teacher 3: [...] My inquisitive nature only lead me to a greater thirst for knowledge, and that knowledge allowed for the expansion and elaboration of stories and images created by my imagination [...].*

*Teacher 5: Yes. I believe that human intelligence predisposes creative problem solving and thinking. I believe that all humans have this tendency.*

*Teacher 5: My understanding is that human tendency is inherently creative. Children routinely find creative solutions to problems including the problem of adults who interfere with their natural zestful exploration of the world around them [...].*

*Teacher 7: [...] I believe that each child has enormous creative potential [...].*

Teacher 7: [...] I think that each child starts out with a great deal of creativity, naturally! [...].

Teacher 10: [...] I do think kids are inherently creative [...].

Teacher 12: [...] I think it has a lot to do with the parents, are they creative, what kinds of things do they do in their home [...].

Teacher 12: [...] My husband is a creative person, and his father is very artsy and creative, they draw a lot, and are always coming up with ideas for things, and my mother is like that, she is very talented, she makes up stuff for my kids, neat projects for them to do [...].

Teacher 12: Sure, they both are (creative). Myself, my husband, my brother, and my father-in-law are artistically talented.

Teacher 24: It's got to come from somewhere! So I don't know if it's something children just, I've never really researched creativity, so I don't know if some children are born creative, for some reason I don't think that's the case, now I don't know if their parents may have had a knack for creativity and that is somehow genetically put into a child, or I really feel that home environment, and outside environment really has a greater impact, the teacher's role and the parent's role probably has a greater impact on how a child expresses himself, and how you see that creativity, than any genetic factor.

Teacher 25: In some sense, yes [...].

Expert 8: Nearly impossible to teach due to (apparently inborn) need to do things his/her own way.

## **Environment**

Teacher 7: [...] What has happened to him or her in the past and what is happening to him or her in my room has a strong cause and effect relationships to what I see daily as far as the "creativity" that he or she may demonstrate [...].

Teacher 7: [...] It is up to us-the adults who supply his environment, both physical and psychological environment, to be sure that this creativity is nurtured to its fullest.

Teacher 8: [...] Depending on their environment or their upbringing. Creativity is either encouraged or stifled. Some children are encouraged to be creative, others are encouraged to do things by the book. That doesn't leave a lot of room for extra thought.

Teacher 8: It depends how rigid the authority is, and how much importance the child's environment places on the goal. (stifling creativity)



Teacher 10: [...] It is a struggle to nurture that and at the same time structure curriculum with specific lessons we think they should learn that they can't learn from play. For every neuron pathway cemented by mastery of a skill, another deteriorates from disuse-or so it seems.. So it is always a delicate balance.

Teacher 24: I really feel that home environment, and outside environment really has a greater impact, the teacher's role and the parent's role probably has a greater impact on how a child expresses himself, and how you see that creativity, than any genetic factor.

Teacher 25: I think part of it is opportunity, being given the opportunity to explore, I think if you hand a child a page from a coloring book, it stunts their creativity, I think it is better for them to have a blank page, and be given the materials to draw or whatever, those are the factors that encourage creativity [...].

Expert 19: Depends on context (Some of these behaviors)

Expert 32: [...] It is the environment and the support of others to respond to children's interests and to investigate that environment that enhances each child's ability to create through play [...].

### **Home environment**

Teacher 7: [...] In other words, a child born with a heavy "does" of creative potential who has experienced frustration at home when presenting alternatives to the "normal, accepted" ways of relating to materials or other people, may act stiff, seek continual praise, be envious of other children, etc. by the time I see him or her[...].

Teacher 8: Well, my parents were supportive, my mother was into music, she's a choir director, and an organist, and my dad, as I said, builds buildings. They were very encouraging of pretty much anything my siblings and I wanted to do, no matter what it was. My brother wanted to take apart cars, they would encourage him to do that, they would send him down to the junk yard to take apart cars. Or they would send him on parts errands, like if a headlight broke on our car, they would tell him, "Go to the junk yard and find one of these headlights." They encouraged all of us. They had a gazillion books in the house, so we were encouraged to read different things, and my mother had a big thing about that, we would have nightly story times, well into my teens, we would all sit at the foot of somebody's bed, and she would read a story. A chapter a night, and always different stuff, fiction, non-fiction, fantasy, to open our minds up to as much as possible. To gain as much knowledge as possible. And that allowed us to develop creativity, all my family is very creative. My dad is now the president of the South Jersey Performing Arts Council, he dances with my old company, he is the president of that dance company, my mother is a choir director and organist, one brother is a graphic designer, my other brother works on Web pages and takes apart planes, my sister is an actress, so everybody is creative in some way. I think being able to have the freedom to just open up to everything has helped us all.

Teacher 8: He started dancing, the company that I danced with in high school, it was a children's company, so they used the parents of the children in adult roles, like the parents in the Nutcracker, and they didn't have enough men one year, so the story goes that I came home one day and begged Daddy to help out, so he got into it, and now that is his creative outlet. He is stuck in a boardroom six days a week, and on the seventh day he puts on a pair of ballet slippers and does character roles.

Teacher 8: [...] That encourages creativity, I think. Like some parents won't let their kids draw on the walls. I'm not saying that's a good thing, but it is an expression of creativity. They are going from paper to a different medium, the wall. Granted, that is not usually encouraged, and I am not saying that if you don't allow kids to do that you are stifling creativity. I used to be a nanny, and one girl I worked for, she was only allowed to color in coloring books. She had to stay in the lines, her mother would only hang pictures on the refrigerator in which she had stayed in the lines. If she got messy, or if she colored a flower purple instead of pink, for example, or got out of the lines, that picture would not be hung on the fridge. And she never had any blank paper. One day I couldn't find any of her books, so I gave her a grocery bag and told her, "Just color that!" And she would say, "No, I have to color in a coloring book". And I think the kid was missing something there. I think it showed in other facets of her personality too [...].

Teacher 8: Too many restrictions. Like "you are only allowed to read nature books, or non-fiction books, not being allowed to color outside the lines," so to speak. I know a lot of parents, if the parents were not exposed to art, or the parents have a very analytical point of view, or are very scientific, oftentimes that will get passed on to their kids. "Oh well, I don't think that way, so you don't need to be exposed to that." And I am in the arts, so I have seen that from an artistic standpoint, I know a lot of people who have said, "Oh, I'd never let my kid play an instrument," or "I'd never let my kid dance, or sing," that is not something that is important to them. And I think non-exposure to the arts, or non-exposure to anything, some people won't let their kids play sports[...].

Teacher 8: My father is in construction. He builds very big buildings. My brother works on cars and jet planes, he is in the Air Force, he takes apart fighter jets. Both of my brothers are into computers, my one brother can take apart computers and put them back together blindfolded [...].

Teacher 12: I'm thinking of a little child who has a very artistic mother, she is very talented in her work and what she does, and that child in my classroom this year showed me leaps and bounds, his mind was turning in different ways than other children's minds were turning, I think it the environment that you grow up in [...].

Teacher 12: [...] So having that experience of having my parents do fun things with us when I was a child, I can relate to that, and try to do some of those things with my children at home.

Teacher 12: I think it helped that she was artsy, and that we always did fun, cool projects outside of school. When I was a little girl in third grade, we had to do a report on salmon. Everybody got assigned a fish, and I got salmon. I researched, I did my report, I knew what I wanted to say, and she said, "Why don't you take some salmon in for everybody to eat?" So she got me the salmon,

wrapped it up, and allowed me to go around the room and let the kids taste it. I think she just went the extra mile to help me find fun ways of learning, and teaching us in a fun way.

Teacher 12: Yeah, just all the experiences we had with her when we were little, like the salmon example, and other things throughout childhood, we always made our own Halloween costumes, design them, she would let us do what we wanted, and now it has helped me with my own children. Just to see what we can do with stuff at home, and getting them involved in projects, every parent wants to do well with their kids and have fun with them, but I think I had an advantage of having an artistic parent.

Teacher 12: I was interested in art and drawing, and I took art lessons with a lady in my neighborhood, my mom let me do that, and we baked a lot, I've always had a love for food, and my mom always let us help in the kitchen, make meals, cook and bake at home, and right out of college I got a job at a deli, and learned some very creative ways to display food, make it look nice, being creative with recipes, making up stuff or your own, creating sandwiches for people that one person might not like, but other people loved [...].

Teacher 12: I think I am. I have a little of that. And my husband has a lot of it.

Teacher 12: Yeah, when I'm struggling to help my son with his homework, helping him with a problem or whatever, my husband can come in and say, "Why don't we do it this way or that way," shed a new light on finding a solution to the problem, and he makes it fun for the kids to do that. And it shows in his work, all the different things he juggles in his job. And it shows in their extracurricular activities, their interests outside of work, the love of the outdoors, and having fun.

Teacher 12: Aside from the artistic standpoint, my husband is a lot more patient than I am. I don't know if patience plays a role or not. I think it's just providing your kids with activities and good life experiences, we travel a lot, go places and see new things, we spend a lot of time with family, and outside.

Teacher 12: Yes, now. My kids are my focus. I try to do creative things with them, and involve them, and my hobby is scrap booking, and I like to design pages of photos, make them look cool, and that relies on a small level of creativity, but it is hard for me to find the time to sit down and do that.

Teacher 12: Sure, I was fortune to have a very artistic/ creative mother. She helped bring out the creative side of me.

Teacher 25: Well, my husband is a musician [...].

Teacher 25: Art is important in my life, my son and my husband are musicians [...].

Teacher 25: I encouraged him to play, and gave him positive reinforcement when he did, lots of praise when he accomplished something.

*Teacher 25: Oh yes, my husband taught him to play, my husband plays fiddle and taught my son to play, then my son went on and picked up the guitar by himself and continued to play on his own.*

*Teacher 39: [...] I can recall my parents encouraging and allowing me to express my creativity.*

*Expert 23: A lot of your points (items on the checklist) could relate to creativity but could also be related to other causes such as problematic family situations [...].*

### ***Freedom practices***

*Teacher 8: [...] My other family members were often more mechanically inclined, and I often found myself trying to take the things they took apart and use them differently.*

*Teacher 10: Yes, as creative as any normal child, I remember making up dance routines, maps of the house, loving to pretend in playing house, jungle safari...without prompting from an adult.*

*Teacher 12: Yeah, just all the experiences we had with her when we were little, like the salmon example, and other things throughout childhood, we always made our own Halloween costumes, design them, she would let us do what we wanted, and now it has helped me with my own children. Just to see what we can do with stuff at home, and getting them involved in projects, every parent wants to do well with their kids and have fun with them, but I think I had an advantage of having an artistic parent.*

*Teacher 21: Yes, (I was a creative youngster) I feel that during my young days I was creative. I can recall experiences in elementary school thru high school that reflect my creative being. I was given opportunities to express and explore my environment.*

*Teacher 23: Yes, (I consider myself as a creative youngster) raised in a farm-played outside a lot. Had a playhouse to pretend. Parents let us set up "play art" and role play for days [...].*

*Teacher 24: They gave us a lot of freedom to do things on our own. My dad was seldom home year-round, so my mother was very busy, she could not always entertain us. I think today children expect a lot more from their parents. "Sit down and read to me or play with me," so it was nice that I had brothers and sisters and other playmates, my mom would say, "You guys come up with your own things to do, play in the yard, do whatever you want," there were limitations, but she really let us come up with our own activities and ideas. My mom was one of my role models. She was always a very caring person, so if we had an idea or we wanted to do something, I always felt comfortable coming to her and saying, "Mom, can I do this, how should I do it, will it work?" and she would guide me and my brothers and sisters.*

*Teacher 24: In some sense, yes. My dad not so much. He was very rigid and strict, did everything by the book, he was very organized, and not real flexible. He may have been creative, but I did not see that side of him. And again, he wasn't around that much, unfortunately. But I do see my mother as very creative, with her cooking, we didn't have a lot of money so she would come up*

with many ways of serving the same thing in different ways. She would do a lot of sewing, making dresses for us, and doll clothes, so I do feel she was a creative person. I don't know if that has helped us or not.

Teacher 24: [...] They know that we expect them to do well in school, and perform at home, on the other hand they do have a lot of freedom [...].

Teacher 39: [...] I can recall my parents encouraging and allowing me to express my creativity.

### ***Respecting children's creative needs and expressions, and creative parenting to nurture creative children***

Teacher 7: When I was growing up, our family had no t. v. until I was in 5<sup>th</sup> grade. My fondest memories are of "creative" activities: making sewn tiny doll clothes with my grandma-or toys for my baby brother; finger painting, outside on our side porch; pounding weeds and green growing vegetation between two rocks and moving it to jars, mixing it with brook water and blossoms to change the color, etc. all fun.

Teacher 12: I think it helped that she was artsy, and that we always did fun, cool projects outside of school. When I was a little girl in third grade, we had to do a report on salmon. Everybody got assigned a fish, and I got salmon. I researched, I did my report, I knew what I wanted to say, and she said, "Why don't you take some salmon in for everybody to eat?" So she got me the salmon, wrapped it up, and allowed me to go around the room and let the kids taste it. I think she just went the extra mile to help me find fun ways of learning, and teaching us in a fun way.

Teacher 23: Yes, (I consider myself as a creative youngster) raised in a farm-played outside a lot. Had a playhouse to pretend. Parents let us set up "play art" and role play for days [...].

Teacher 24: Yes, I feel that they have. And again, I think my boys are very creative, and I don't know if it is just because I get to see them daily, to see them growing and developing, to see their interests, and their hobbies, so it is a different point of view than me personally, to be able to witness this. But some of the things they come up with are very unique, and they are very manipulative, they love to construct, they love to do the Legos and the drawings, and playing with blocks, now of course they are older and don't do that, now they are more into sports. But I think that they have taught me to slow down, sit back, and just do some observations, think about what is going to happen, and just letting them express themselves in ways that they want. Because I could always just jump in and say, "That's not the way you do that," or "That doesn't look like a robot to me!" But if they want that to be a robot made out of Legos, that's fine, that is their own personalized robot. So yes, they have taught me a lot.

Teacher 25: Oh, I don't know that I was supported much by school or family, I mean my parents took me to band rehearsal, and make sure I got where I needed to go, but that was it. I think I have actually grown more creative as an adult.

*Teacher 27: I was a creative youngster. I had a large variety of experiences with nature, insects, animals, and people of all ages. Rich childhood, loving parental care. I danced as a child, drew pictures, wrote stories, loved books, and horses, sang in children's choir, loved play acting and dramatic play.*

### ***Benefiting from facilities at home***

*Teacher 8: [...] I would invent characters to add to my favorite stories and T. V. shows. [...].*

*Teacher 23: Raised in a farm-played outside a lot. Had a playhouse to pretend. Parents let us set up "play art" and role play for days. Had to be creative because did not have everything! Made a lot of things art, food, etc. [...].*

*Teacher 24: [...] When I was growing up, and I did not go to pre-school or kindergarten, my mom did what she could with us at home [...].*

*Teacher 24: Yes, while growing up with nine other siblings we really did not have much extra money to spend on toys, games, etc. therefore; it was up to each of us to come up with different games using materials found around the house/yard. I spent a lot of time making up outside games. Also, inside we'd play house with dolls and using different props!*

*Teacher 24: Well, as I had written down, and as I just indicated to you, financially our family really struggled, and a lot of the materials we had were just things that I would find around the house [...]*

*Teacher 24: [...] Again, having a lot of brothers and sisters, we used to play "dogs and cats" all the time, and just crawl around on the floor, and use our makeshift houses, whatever.*

*Teacher 24: [...] They know that we expect them to do well in school, and perform at home, on the other hand they do have a lot of freedom, luckily we live in a wonderful neighborhood, there is room to run and play and ride their dirt bikes, so there are a lot of ways for them to express their creativity. I think they have a pretty good balance. I'm proud of all of them.*

*Teacher 27: I was a creative youngster. I had a large variety of experiences with nature, insects, animals, and people of all ages. Rich childhood, loving parental care. I danced as a child, drew pictures, wrote stories, loved books, and horses, sang in children's choir, loved play acting and dramatic play.*

*Teacher 41: Yes, (I consider myself as have been a creative youngster), because I grew up on a dairy farm and my family did not have many luxuries. So my brother, my sister, and I had to use our imagination to play with what we could find. My sister and I also made up silly games to make our chores more fun.*

### ***Child rearing approaches and parents' attitudes***

Teacher 8: [...] Depending on their environment or their upbringing. Creativity is either encouraged or stifled. Some children are encouraged to be creative, others are encouraged to do things by the book. That doesn't leave a lot of room for extra thought.

Teacher 8: It depends how rigid the authority is, and how much importance the child's environment places on the goal. (stifling creativity)

Teacher 12: [...] So having that experience of having my parents do fun things with us when I was a child, I can relate to that, and try to do some of those things with my children at home.

Teacher 12: Aside from the artistic standpoint, my husband is a lot more patient than I am. I don't know if patience plays a role or not. I think it's just providing your kids with activities and good life experiences, we travel a lot, go places and see new things, we spend a lot of time with family, and outside.

Teacher 24: That's a tricky question, I don't know if I can pinpoint anything particular that they did or did not do, but one thing that was a common theme, first of all they did make sure we were comfortable talking with them, expressing our ideas, and having limits, but not so severe and not so structured, so we were pretty much able to do what we wanted to do. And I think I have taken that to heart and brought that to my own family. My husband and I kind of opposites when it comes to child rearing. Unfortunately, I think I married my dad! He is very structured, very organized, and I am one who is much more open to ideas, really taking the time to listen to my kids and let them express what they want to do or say, or the activity in which they want to be involved, so I really have tried to create the kind of atmosphere in my home that my mother did, to be open with them, and have them feel comfortable expressing that, and be creative with their ideas. Because sometimes they come up with, "Can we do...." And I'll say "What? You want to tie a string around a tree and do what?" My husband would be the one to say, "no, no, no," but I might say, "Let's try it and see if it works! If it doesn't, we'll come up with a new idea".

Teacher 24: Oh yes, depending on what they want or need, they usually will come to me first and bounce the idea off me, and depending on what I have to say, they will either pursue it or go to dad, or we'll say, "I think you need to come up with another creative way of doing this, because that is not going to fly!" So yes, I think the idea affects which one of us they consult with.

Teacher 24: They take after their father, he is a perfectionist [...].

Teacher 24: [...] When I was growing up, and I did not go to pre-school or kindergarten, my mom did what she could with us at home [...].

Teacher 24: [...] I think I have also become more open minded, like my three sons, and I am thinking about some of the discussions and dialogues I have with my three sons, and there are times when I have to bite my tongue so I am not coming up and trying, I want them to learn through their own experiences, and there are times when I want to jump right in and say "Don't do that!" I mean, for safety reasons I would do that, but there are other times when I tell myself,

“Oh, just step back and let them explore that on their own, let them come up with their own conclusions.” [...].

### **Parents' expectations**

Teacher 15: No I was not a risk taker and we were not encouraged to go away from the norm.

Teacher 19: No (my children are not creative)

Teacher 22: Yes. My son is very good of drawing detailed pictures. He has been drawing since about 3 or 4 years old. He is 8 now. He is very good at sculpting things with clay also. He is very visual.

Teacher 24: [...] They know that we expect them to do well in school, and perform at home, on the other hand they do have a lot of freedom, luckily we live in a wonderful neighborhood, there is room to run and play and ride their dirt bikes, so there are a lot of ways for them to express their creativity. I think they have a pretty good balance. I'm proud of all of them.

Teacher 28: Yes, they (my children) are both very creative and imaginative. They both (3 and 7 years old) love to make crafts, dance, sing, read and listen to music among other things. All children are creative if you find a way to bring out and nurture their creativity.

Teacher 31: She (my daughter) is 3 yrs old and it is difficult to judge creativity at this age. She is highly intelligent and plays well by herself [...].

Teacher 32: First (child of my own) is a good writer.

### **How parents handle conflicts and problems that children might face in relation to creativity in young children**

#### **Hardship**

Teacher 3: [...] When I was in 10<sup>th</sup> grade I even got accepted into a writing college (\$ prevented that one). I did not get to go, but I never stop dreaming and creating. [...].

Teacher 7: When I was growing up, our family had no T.V. until I was 5<sup>th</sup> grade. My fondest memories are of “creative” activities [...].

Teacher 17: Yes, I had to create certain toys and environments when I was young. I did not see this as an obstacle. In fact, I enjoyed these times.

Teacher 23: [...] Had to be creative because did not have everything! Made a lot of things art, food, etc. [...].



*Teacher 24: Yes, while growing up with nine other siblings we really did not have much extra money to spend on toys, games, etc. [...].*

*Teacher 24: Well, as I had written down, and as I just indicated to you, financially our family really struggled, and a lot of the materials we had were just things that I would find around the house. And one vivid play theme that I recall was with my younger sister, and we had Barbie dolls, but they weren't Barbie dolls, they were a cheap version of a Barbie doll, and my older brother had bought them for us for Christmas one year, and we were just thrilled with these dolls. They didn't have anything that went with them, so my mother, who would sew, she made a lot of our clothes and a lot of our doll clothes, and my dad was an insurance salesman, and he had tons and tons of binders, the folding kind, and we would take those binders and make houses with them, and we would have them dividing into rooms and things like that, and then we would just go through our house and find furniture. We would use an empty Kleenex box for a bed, or a little soap dish for a bathtub. And some of the things we came up with to use, I don't know if children today would be able to do that, if they did not have the real object in their hand, I don't know how many of them would be able to come up with another symbol or another way of representing that object. Same thing with outdoor play, we used to come up with some really different, crazy games to do. We spent a lot of time outside, and it's funny because back then, I'm not really that old, but back then there was not that fear in the community about your children not being safe, or something terrible is going to happen to them. We used to roam the neighborhood, and all the neighbors would take care of everybody and kind of look out for everybody. And we would come up with some of the goofiest things to do, using a stick and a stone, or using a garbage bag to come up with some things. So I think that kind of creativity actually stems from the lack of actually having those objects, but wanting to, feeling a need to have that thing, we had to come up with some different ways to use things. We did a lot of pretend play [...].*

*Teacher 30: I think I was pretty creative, I did not really have a lot of kids my age to play with so I spent a lot of time pretending and making things to occupy my time.*

*Teacher 41: Yes, (I consider myself as have been a creative youngster), because I grew up on a dairy farm and my family did not have many luxuries. So my brother, my sister, and I had to use our imagination to play with what we could find. My sister and I also made up silly games to make our chores more fun.*

### ***Conditions and conflicts inside the family: divorce, death, etc.***

*Expert 23: A lot of your points (items on the checklist) could relate to creativity but could also be related to other causes such as problematic family situations [...].*

### ***Size of the family***

*Teacher 24: Yes, while growing up with nine other siblings we really did not have much extra money to spend on toys, games, etc. Therefore, it was up to each of us to come up with different*

games using materials found around the house/yard. I spent a lot of time making up outside games. Also, inside we'd play house with dolls and using different props!

Teacher 24: [...] Again, having a lot of brothers and sisters, we used to play "dogs and cats" all the time, and just crawl around on the floor, and use our makeshift houses, whatever.

Teacher 24: I think that they all have their own specialties, some of my sisters are very creative in home interior type things, they'll paint a room, and I'll be like, "Wow! I would never have thought to use that color, it's very unusual," or they'll do some kind of display in their houses, very unique. I don't know if it was from our upbringing, that we really had to rely on our own creativity or our own imagination to come up with these ways of playing and behaving, that has helped what I do, but I do feel that they, I don't know about everybody, but especially my sisters, I feel that they are very creative, very crafty, like a lot of them will do floral arrangements and things like that.

Teacher 41: Yes, (I consider myself as have been a creative youngster), because I grew up on a dairy farm and my family did not have many luxuries. So my brother, my sister, and I had to use our imagination to play with what we could find. My sister and I also made up silly games to make our chores more fun.

### **Birth order**

Teacher 24: I am seventh. So I have six older brothers and sisters, then I have a younger brother and a younger sister. Ages ranged, my younger brother was born when I was 14, and then my oldest sister is 11 years older than I, so there is quite a few years between everybody.

### **Gender**

Teacher 8: [...] When I was growing up there were boys toys and girls toys. I always went for the boys toys more than my own, just because I was convinced you could make any toy go either way [...].

Teacher 8: [...] It is funny that they are all boys, but all so different [...].

Teacher 12: [...] But it's also a boy/girl thing. I always say she is going to be my athlete and he is going to be my artist. She likes to color and draw, but on a simple level. He comes up with these....

Teacher 12: [...] I mean he (my son) was a boy, and socially not a go-getter, he was a little shy, not terribly timid, but he was not always the leader in the class [...].

Teacher 12: She (my daughter) is much more laid back than he (my son) is, she has a calmer personality, her wheels are turning, but not as fast as his are. That is perfectly fine, they are two different kids. But I see more artistic and creative abilities with him than I do with her.

*Teacher 12: I think so. And I don't mean to stereotype them (my children), but he is a boy and she is a girl, so they do play differently, sort of, she has more interest in dolls and mothering things, but he will act out scenes with his little trains on a train track that he watched in a video or read in a book. She will just play with toys. He puts a lot more thought and energy into what he does. I don't know if it is their ages, but when he was her age, he was very busy making stuff up.*

*Teacher 24: I think that they all have their own specialties, some of my sisters are very creative in home interior type things [...]*

### **Gender of siblings**

*Teacher 8: [...] It is funny that they are all boys, but all so different [...].*

*Teacher 8: [...] When I was growing up there were boys toys and girls toys. I always went for the boys toys more than my own, just because I was convinced you could make any toy go either way [...].*

*Teacher 41: Yes, (I consider myself as have been a creative youngster), because I grew up on a dairy farm and my family did not have many luxuries. So my brother, my sister, and I had to use our imagination to play with what we could find. My sister and I also made up silly games to make our chores more fun.*

### **School environment**

*Teacher 8: [...] I feel like I am taking everything, the music, the steps, and how can that be put together in what I think is an interesting way? What I think is interesting may not be what someone else thinks is interesting. I don't know, I guess taking things outside the norm is what I try to do. Like I'll have them dance to classic rock songs instead of the traditional classical music. I think that's an interesting way to go, and a different way of looking at things. So that is inserting my creativity, but a lot of people don't like that, they say, "No, ballet needs to be classical music and long skirts, and so on. A, B, C, let's follow the structure". I like to think outside the structure. I think the point classes I teach, I have only done one piece to classical music, and it was recently, and people were so happy to finally see it, because I had done so many other pieces to weird stuff [...].*

*Teacher 8: It depends a lot on the environment, and how school is presented. Are they going to school because they have to? Or are they going because they are learning, and they realize the importance of what they will be learning? [...].*

*Teacher 8: [...] But I think the most important thing the teacher has to do is have a variety of ways of expression available, have Play-Doh out sometimes, or paints [...].*

Teacher 10: [...] It is a struggle to nurture that and at the same time structure curriculum with specific lessons we think they should learn that they can't learn from play. For every neuron pathway cemented by mastery of a skill, another deteriorates from disuse-or so it seems... So it is always a delicate balance.

Teacher 12: [...] For instance, in my class we read stories every day, but I often just tell stories, and get out puppets, and we act out stories instead of just reading to a child all the time, there are different ways of doing that. I provide them with materials on a table and don't tell them what the project is, just let them "have at it," let them go and see what they can come up with. Maybe we're working on a theme of outer space. I gave my kids some blocks of wood and some nails and hammers, and they made their own space stations, and there wasn't any kind of rules or patterns that I wanted them to follow [...].

Teacher 12: I just feel strongly that being artistic and being creative are related. Just allowing my kids, in our basement we have a craft box, with paper, scissors, glue, and we just let them experiment, do what they like, create art projects.

Teacher 12: [...] We have a curriculum at school, but a lot of times I just have to think back to when I was a student teacher, or when I was teaching at a different school, and make up some things, because I'm not finding good ideas in all the books. You just have to make it up or devise a new plan of something fun to do.

Teacher 39: Somewhat, I can remember being concerned with others' expectations and wanting to do things "by the book". I do not recall having many opportunities to be creative in my elementary experience. I believe that it was not until high school that creativity was encouraged [...].

### **Who is the teacher? (Teacher beliefs, experience, background)**

Teacher 7: [...] As a classroom teacher of very young child, I must take each child as he or she comes to me and educate, love, fulfill the needs for him to the best of my ability.

Teacher 8: [...] Ballet training is very strict, very structured. Especially depending on the teacher, and the school you're in. I studied with some very strict people, I don't want this to sound bad, but she was an old Russian woman. She was just, if you didn't look a certain way, hold your head a certain way, if you let your stomach hang out after a long day, and you were tired, if your feet didn't touch toe to heel, toe to heel, and your knees weren't straight the whole time, then you weren't worth her time. No matter how many turns you could do, no matter how high you could jump, no matter how gorgeous you looked on stage, it didn't matter, if you didn't have the right feet, the right hips, whatever, then you were not a ballerina, no matter how hard you worked. But at the same time, that's just the learning of it. Once you get out there to perform it's a little bit different, because you insert who you are into your performance. That's ballet, that's the training of it, but once you get into choreography, and that's one of the reasons I got into choreography, so that I could use my creativity, and I don't train my students the way I was trained! I think I learned from that experience.

Teacher 8: She was from a different school of thought, she was from an era where that was the norm. The norm was, "It's the hard road or no road." This is the strictest discipline, this is the way to do things. And that's pretty much the excuse the school used when anyone complained about her or her techniques, "Oh she's from the old school, that's the way she does things." She was a professional, she was a star in her country at that time. That's what she was trained to do. She was paid to do this, it was her job.

Teacher 8: No, not really. She was an excellent trainer, an excellent coach, but as far as creativity, she had very little. Any creativity was really only in the expression, when you're dancing, like you can do the steps, but there are certain little things in ballet, the look on your face, or the way you hold your chest, or the way you use your arms, tiny little things that make the performance more than just the steps. That's about the only creativity you were allowed.

Teacher 8: A little bit, yeah. (hating ballet)

Teacher 12: [...] What if a strong-willed child, to one teacher is a discipline problem, but to another teacher, that child is just trying to find an outlet for creativity and artistic ability, maybe they are just an active kid who needs to play in a different way. If I am a creative person and another person is not, they may not understand where kids come up with stuff or how to allow them to be themselves [...].

Teacher 12: [...] Most of the teachers in my school are creative, they think of ways to do things with children, they take curriculum that is age-appropriate for a four-year-old, and they will bump it down to teach two-year-olds the same information. So they are creative in the way that they present the material and teach the concepts they want to get across. There are not many uncreative people working as teachers. I think most teachers need to have some twang of creativity in them somewhere, to some degree.

Teacher 12: Well, there could be some problems there! As I said earlier, sometimes he gets frustrated with himself because he can't do something he wants to do, and it takes a person who understands how he is processing things to understand why he is acting the way he does.

Teacher 12: He (my son) has been in preschool with me since he was 5 months old. So he was in pre-school for several years before kindergarten.

Teacher 12: Well, when he was going into kindergarten I was worried, because he has always been creative, he was always asking me what letters were, and his reading readiness was apparent before he entered kindergarten, but I didn't work with him on anything cognitive, because I was afraid that for his teacher, not knowing who she was, that he would be a discipline problem, he would be bored, or get done too soon and find something else to do, and not pay attention to what the teacher was saying.

Teacher 12: [...] I think creative people are creative to an extent and in different areas, some people have to work a lot harder than others to do well in school. Math was not my strong

subject, I liked the Earth sciences, like Botany, Environmental Biology. It depends on the teacher.

Teacher 12: [...] Some of my best classes in high school, and some of the things I did the best were because the teachers were excited to be there with the kids. The teachers made it fun to learn.

Teacher 12: [...] You're not afraid to ask that teacher for help if you don't understand something, because they are so open and nice.

Teacher 24: I think education. Just from going back to school and learning more about children and development, learning more about myself and my role as a teacher in the classroom, yeah, I really would blame it on furthering my education, and on the books and the research I have read.

Teacher 24: Well, I was going to say something about teachers' philosophy, their personal beliefs, I think that impacts creativity as well. What I may see as creative in a child, another teacher may not. So I think that is very subjective, so it is not only your environment, but the teacher's philosophy as well.

Teacher 24: Well, I don't know, and this may just be from experience, from me going back to school, but as I watch these children, and I have become more observant, I have become involved in their play, where I can sit back and listen and do observations, and I am trying to be very objective about what they are doing, and I can see the tiniest thing really blossom, and I really try to listen to the children's dialogues, to see what, I'm thinking of another boy who loves our block area, and I have sat there, and I'll get involved if he wants me to become involved, otherwise I'll just sit back and maybe ask some open-ended questions. But, his imagination! I don't know if there is really a difference between imaginative play and creative play. To me they are the same thing, maybe they're not. He can come up with these really elaborate buildings and structures, and the stories that go along with it! And I'll hear other teachers say, "Did you see what he just did?" And I'll say, "Oh yeah, he just built this castle." Or, "Did you hear what he was talking about with his peers, did you see what he was thinking?" And they say "No." And I'll say, "You really need to take the time to sit down and watch these guys, and see what they're doing and how they are exploring" [...].

Teacher 24: [...] I really think there are different ways that teachers look at things. One teacher may look at a picture and say, "Oh that's really nice, that's a flower," but maybe to the child that wasn't even a flower, that was something else that they created [...].

Teacher 24: Unfortunately, and again, I don't think it is so much here at our Center, first of all, everybody here is degreed in some type of early childhood or human development field, so I think the staff here does have a better understanding of children and their development. I worked at a community center for 15 years before I came here. I loved it, I was a director for 12 years, I had worked with pre-schoolers for three or four years, wonderful, wonderful experiences for me, but it was also very stressful, due to the fact that my teachers were not all degreed. There were only a few teachers who had a college degree and really understood childhood development, so

they did their best to run their classroom, but a lot of times you have teachers coming in who have just graduated from high school, with maybe a couple of years' experience doing summer camps or babysitting or something, and unfortunately, those would probably be the ones who would be quick to say, "Oh, jump up, you're okay, your knee is fine," or kind of ignoring some of the needs of the kids.

Teacher 24: Exactly. I think experience is really key. For me going back to school after having all these years of experience, the better to understand the theories, and why we do what we do, but I think if I would have read the books first and then experienced it, I don't know if I would have gained as much. I think it's more meaningful for me, especially since I do both at the same time. Working full time and taking these classes, I am able to really, probably not to the best of my ability, but I feel I have a better understanding of what is going on in the classroom.

Teacher 24: Pretty much. At least I've tried to, or even if I'm not really able to fulfill all the things that I want, at least in my mind I am aware of it. I may not be able to display it or demonstrate it right away, but I am taking that knowledge, and it is sitting in the back of my head somewhere, and I am aware of it, and I think it makes me a better teacher.

Teacher 24: [...] I think there are other factors as well, I think there is a lot involved with your own personal upbringing, how you were raised, your own personality, your own traits, things that you believe in, I think really are important for a teacher, and everybody has their own teaching style, some people feel more comfortable expressing themselves in one way, others do it another way. I think there are a lot of things that play into that.

Teacher 24: [...] I am a firm believer about emerging literacy in the pre-school classroom, so I think it's really important that in all the areas you have books, and writing materials, and paper. And it's really neat, because a lot of times I'll see the children go into a different area, and they will take their paper and pencil and they will make signs, or draw pictures, or add that to the area they are playing in, which I think is a great way of being creative for them [...].

Teacher 25: I guess just by making these things available to children, and encouraging them to try new things, and to think of different ways to do things, and find different ways to use materials.

Teacher 25: [...] The task, as I see it, is for the teacher to recognize that all children are creative and it is up to the teacher to help each child find his/her means of expression.

Teacher 28: [...] All children are creative if you find a way to bring out and nurture their creativity [...].

Teacher 41: I believe that every one, young and old, have some kind of creative side to them. You just have to look for it.

Expert 8: Nearly impossible to teach due to (apparently inborn) need to do things his/her own way.

*Expert 13: [...] In my mind, some items indicate creativity (finds a new function), some are precursors to it (must be present if one is to be creative...for example, "inquisitiveness"), and some might be outcomes of being a creative person [...].*

*Expert 13: [...] I wonder too, if my own area of expertise/study (kids with emotional and behavioral disorders) influenced my reading and understanding of the items [...].*

*Expert 26: [...] I found myself referring to people/children I know to be creative in order to answer the questions [...].*

*Expert 27: I began to just read to see if there were particularly any I would say no to. I have realized I am looking at each of these as a characteristic of a child and that any could be parts of or signs of a child's individual creative self [...].*

*Expert 31: I feel there is not one description of a creative student. It could be the quiet one by themselves. It could be the one always in charge of his group. It could be the most intelligent one in the class. But often is not the brighter one. Even a student with a learning disability could be very creative in other areas. When working with pre-school and primary it is difficult to determine what student is gifted or is he just "advantaged" by interventions. It is difficult to say is a child is a discipline problem or using his creativity.*

*Expert 32: [...] I suppose the crux of my dilemma lies in the fact that I believe that, just as there are multiple intelligences there are multiple ways that creativity evidences itself in human beings, young and old. If the very definition of creativity is "to bring something new into existence" be it an idea, a structure, a work of art, a text, a recipe, a role [...].*

### ***Pace of learning environment***

*Teacher 12: [...] I was fearful that if he finished before the other children, he might act up or be bored, and I could see that somebody could perceive that as misbehavior. It wasn't that way, I'm glad, they kept him busy. It was an all-day program, that's what worried me, I wondered how the teacher was going to do with the kids all day [...].*

### ***Learning environment, structure, restrictions, accessibility to materials, and curriculum***

*Teacher 3: [...] These lower shelves, the children can come in here and get things out when they want. They can come in here and get paper, markers, they always have those things available to draw with and to use. On request we will get out Play-Doh for them to do sculptures. Most of it is just having materials available for the children when they're ready, and to provide a variety of means for children to express themselves through art.*

*Teacher 3: A daycare center and a home are so similar, I think you can do a lot of the same things. We tend to get messier here than kids can get at home sometimes, because we have a room that is dedicated just to art, so it doesn't matter if paint gets spilled on the floor, we'll wipe*



*it up, and that's okay. But we can expose children here to a lot of things they might not be able to do at home. They can do some things at home, and as far as music, at home kids can play as much music as they can, and different kinds of music, so that children are exposed to a lot of different influences and possibilities.*

*Teacher 7: [...] My job is to establish an environment that can help free up that creativity to live strong again [...].*

*Teacher 8: [...] A child's environment could have an effect, like if they are in a really strict environment, where they do not have a lot of options and there is no access to different experiences, I guess that could hurt them as well. They are not open to anything except what they are used to, or what they see around them.*

*Teacher 8: [...] They are very strict, very rigid, they don't allow a lot of personal creativity on the side of the dancer, they allow for expression, which is a slight bit of creativity, but it is very narrow, what you are allowed to do. And I found myself even then, when I was locked into something, "You have to do it this way or that way," I got interested at a very young age in choreography, making my own steps, taking all the rigid things I had been trained to do and making it my own, putting the steps in the order that I liked them, using the music I wanted to use, inserting my own likes and dislikes into the things I enjoyed doing.*

*Teacher 24: Pretty much the same thing that I do with my boys, with my family. First, I try to open up all the areas in the classroom. We have different areas, block play, art, dramatic play, manipulatory stuff, and of course, computers. So I always try to keep things available and open for the children to use, so that they are not limited to having one or two choices in the classroom. There may be days when they want to do block play, and other days when they don't want to do block play. But I want that to be available for them, so I think it's important for teachers to respect their own children's interests, and what they want to do. I try to let them utilize materials in different ways, like if they want to take something from the block area and put it into another area, maybe they'll take it into the dramatic play area, I try to be flexible with that. There are some teachers out there who are very rigid, this type of material stays in this area, and you really don't want to be bringing it back and forth, but I feel that is okay to do, as long as you consider safety. You want to make sure that no one gets hurt. I am a firm believer about emerging literacy in the pre-school classroom, so I think it's really important that in all the areas you have books, and writing materials, and paper. And it's really neat, because a lot of times I'll see the children go into a different area, and they will take their paper and pencil and they will make signs, or draw pictures, or add that to the area they are playing in, which I think is a great way of being creative for them. And again, I think it's important for teachers to be able to step back and see what is going on, more than just, they are playing and they seem happy. What is going on in their little minds? In what ways are they trying to express their wants or needs?*

*Teacher 27: Our center is dedicated to the idea that all children can grow in creativity by participating in chosen art and dramatic play given a flexible time frame, access to good materials and open ended art activities.*

*Teacher 39: Somewhat, I can remember being concerned with others' expectations and wanting to do things "by the book". I do not recall having many opportunities to be creative in my elementary experience. I believe that it was not until high school that creativity was encouraged [...].*

### ***Time limitations***

*Teacher 8: [...] I can see teachers getting frustrated with creativity in a way, because they need to get through a curriculum, you need to learn this amount of information in this amount of time. So I have known teachers who told their students, "You need to learn this, there's not a lot of time for extra stuff." So if kids want to take a different path, if they come up with a different way of looking at things, and you kind of go off on a tangent, and you don't cover the material you were supposed to cover. So I can almost see that teachers might think creativity is a bad thing, because it makes it hard to stay on task, hard to stay focused, especially the younger they are, you try hard to keep kids focused on what they have to learn that day, so it's difficult if they want to go off and explore something different, or come up with a different way of looking at things or thinking.*

*Teacher 24: [...] Unfortunately, I feel that does set limitations on the teachers ability to have extra time to let children express themselves in other ways. There is such a focus on "We need to learn this skill by this date" and unfortunately that takes away any extra time, and now they are even talking about taking away recess! I have heard talk that there are schools in some states that do not do recess anymore. Talk about stifling their creativity! [...].*

*Teacher 27: Our center is dedicated to the idea that all children can grow in creativity by participating in chosen art and dramatic play given a flexible time frame, access to good materials and open ended art activities.*

### ***Teaching strategies and appreciation of diverse learning styles***

*Teacher 8: I come up with different ways of making sure my students understand the material, there are different ways that materials get presented, I know just from my studies that not everybody learns the same way. There are visual learners, auditory learners, and kinesthetic learners. So I try to present my material so it is applicable to all three learning styles, so everybody in the room gets the most out of it. I don't just stand there and talk, because then I know I lose people. I don't just show things through movement, because that will lose some people. My creativity, I have to use it to come up with ways that I can reach everybody, and help those who might be a little slower to grasp concepts. Children and adults alike, sometimes you can say things fifty times, and they just don't get it, so you have to come up with a different way of saying it, or a different way of showing it, before they can understand what is going on. That's the one thing I don't like as a teacher, having somebody so stuck that they can't move forward. It disrupts me, I think, "I've got to get this person caught up before I can go on". So I don't like anybody getting stuck and not understanding things.*

*Teacher 8: I have worked with several learning disabled children, and it's sad to say, a lot of parents will come to me and say their child has ADD (Attention Deficit Disorder) or ADHD. And they tell me as a warning, "Watch out for this kid, you may have to discipline him more." And I don't discipline them more than I do any other child, really. I think a lot of times, in today's schools, and in our modern medicated society, I think a lot of kids that are labeled with a learning disability are just frustrated. They don't learn the same way that other people do. I was that way. If I were a child in today's society, I probably would have been told that I have ADD. One of my brothers, they said that he had a learning disability, but really he just sees things in a totally different way than everyone else sees them. He understood the material that was presented, but he didn't do his assignments the way everyone else did.*

*Teacher 8: [...] I think they just need a different outlet to learn, or they need to be taught in a different way. They could be, for example, a very strong kinesthetic learner, and the teacher may not be addressing that, they may not be teaching in a way that the kid can kinesthetically learn. So I think that gets translated into, "The kid is not learning well because he is not picking up the material, therefore he must have a learning disability." But really he is not learning disabled, he just doesn't understand the material in the way that it's being presented. So he needs to be presented the material in a way he understands [...].*

*Teacher 22: Yes. My son is very good of drawing detailed pictures. He has been drawing since about 3 or 4 years old. He is 8 now. He is very good at sculpting things with clay also. He is very visual.*

*Teacher 24: There is a lot of information out there that I know is important, a lot of factual knowledge that we are expected to learn, but I think that when teachers, and when I was growing up it was common for everyone to be sitting at a desk, everybody had the same book, and the teacher just rambled on and on. I think that turned me off. I got bored. I did a lot of daydreaming.. I'd look out the window, watch the squirrels, and think, "Oh, I wish I could be outside." So I think that may have stifled my creativity as far as wanting to learn [...].*

*Teacher 24: [...]Today I think teachers are trying to be a little more creative in the setup of their classrooms, so things are not so structured, with non-traditional seating arrangements, they may put the chairs in a different order, or let children sit where they want to sit instead of having assigned seats. This is what we do as pre-school teachers, we want children to learn through play and hands-on activities[...].*

*Teacher 24: [...] So I think it's important to not only watch them, but listen to them, ask them questions about what they are doing [...].*

*Teacher 25: [...] Is to do the exploration, to explore the materials, to learn something about the materials, to learn to do something in a new way with the materials you are given. Now these kids will do wonderful things with the blocks, but of course there is no product at the end of the day. We do try to document some things, with photos, we take pictures so the parents can see that their kids are doing something creative here during the day. Things like that are very process oriented, and then they're gone. We put the blocks away at the end of the day. Teachers*

have to be taught to let children do their own artwork, that is one thing I would like to see change, but I don't know if it will.

Teacher 25: [...] Just teachers in general, they'll have art period in kindergarten, I have seen a lot of kindergarten artwork go home, and they'll make paper-bag puppets, and the kids don't cut out the things for the puppets, the teacher cuts them out and the kids just paste them on, so it's really the teacher's work the child is taking home, and they are all exactly the same....

Teacher 25: And they are actively discouraged from putting three eyes on their work! They are all supposed to look the same. I think we have to get away from that.

Teacher 27: Our center is dedicated to the idea that all children can grow in creativity by participating in chosen art and dramatic play given a flexible time frame, access to good materials and open ended art activities. What we are after is not copies of adults concepts but the child's own concepts of the world. It is important to value the proceeds of color selections child made shapes rather than emphasizing the end product...(our center) has children ages two to five unsepartated in multi age grouping with many open activities, child chosen and developmentally appropriate practices.

Expert 15: [...] Visual/ spatial Learning style which results in some children being misunderstood [...].

Expert 23: [...] The thing is, I find most kids are creative and the point is how to bring it out of them. I do think that most curriculum activities stifle creativity in children.

### ***Behavior management and discipline techniques***

Teacher 8: I liked the discipline I got from her, I got a lot out of that. The one thing I remember from her that I try not to pass on to my students is that look of "perfection." I'll accept my students no matter what they look like. If their knees aren't perfect, if their hips aren't perfect, if they have a little belly bulge, I mean, I work with the discipline, you have to stand up straight, you have to point your toes, you have to stretch your knees, you have to turn out, you have to do the steps right. But I don't punish them, so to speak, if their leg doesn't touch their ear when they lift it up. If they don't kick their leg as high as the next person.

Teacher 8: It wasn't really punishment, more like emotional stress, "Oh, you're not good enough to do that," and I think that is detrimental to kids, it was detrimental to me, and I was in college at the time.

Teacher 8: She was from a different school of thought, she was from an era where that was the norm. The norm was, "It's the hard road or no road." This is the strictest discipline, this is the way to do things. And that's pretty much the excuse the school used when anyone complained about her or her techniques, "Oh she's from the old school, that's the way she does things." She

was a professional, she was a star in her country at that time. That's what she was trained to do. She was paid to do this, it was her job.

*Teacher 8: I have worked with several learning disabled children, and it's sad to say, a lot of parents will come to me and say their child has ADD (Attention Deficit Disorder) or ADHD. And they tell me as a warning, "Watch out for this kid, you may have to discipline him more." And I don't discipline them more than I do any other child, really. I think a lot of times, in today's schools, and in our modern medicated society, I think a lot of kids that are labeled with a learning disability are just frustrated. They don't learn the same way that other people do. I was that way. If I were a child in today's society, I probably would have been told that I have ADD. One of my brothers, they said that he had a learning disability, but really he just sees things in a totally different way than everyone else sees them. He understood the material that was presented, but he didn't do his assignments the way everyone else did.*

*Teacher 8: [...] Why are they having trouble? I think the "why" is taken out of a lot of things. The teacher treats the symptom, but not the cause, like much of Western medicine. Okay, you are acting out in class, or you are not picking up the material, therefore you must have a learning disability or a behavioral issue, we are going to put you in a slower class. Instead of treating the cause, which is that the child is not understanding the way the material is presented, or they are not being allowed the outlet that they need to understand the material, so we need to fix the cause and not the symptom, and I think that will help, because it focuses on the kid individually, and what their frustrations are.*

*Teacher 8: It depends on their outlet, I think. If a child is very creative and has an active mind, but no outlet, then possibly it could cause high anxiety for them. I am thinking of a friend of mine who has a child like this, and I'm thinking, "That's probably it!" He is very high anxiety, he has been tagged as a behavioral problem, they want to send him to special classes, or tutoring, and my friend was telling other teachers that the school wants to put her child on Ritalin, they want to suspend him from class and not let him come back until he is on medication. And she does not want to medicate her kid, so we've been telling her, "Get him into an art class! Or sculpting, music, sports, something!" And that should calm him down enough that maybe he won't have these issues.*

*Teacher 8: Well, my friend and her child have moved away because her husband got transferred with his job, but while they were here, she did not feel that the school district was doing enough for her child, to help him deal with his issues. She didn't think they were encouraging enough. Their solution was to put him on medication, don't bring him back to class until he is medicated, or home school him, because we don't want him in the school district if he is going to act this way, but they would not offer any solution except medication, and she was not happy with that.*

*Teacher 8: [...] Again, the teacher needs to treat the cause, not the symptom. What is causing the misbehavior?*

*Teacher 12: It went better than I ever expected. It was a great year. He (my son) had things in his mind that he wanted to do, and he wanted to talk to the class about things, and he'd take in*

*things he made, and she (his teacher) would say, "Okay, but you need to wait until this time." And she said sometimes he was so busy thinking about things he wanted to do that he wasn't paying attention to what she was talking about, and she had to pull him back in. But because I spoke with her about his hobbies and interests, she knew on certain days that he would not be as attentive because something exciting had happened in our lives. Or if he had something terribly exciting to share, she would understand.*

*Teacher 24: Exactly. And again, that is not a very safe way to do it, and I think it is important for teachers to express to children, "I understand what you want, " and sometimes I even say, "I really wish I could help you get that, but right now this is what we need to do, we really need to eat lunch now, Miss ... and Miss ... are going to get mad, because the dishes aren't going to get washed, and they are not going to get home!" I always can come up with a reason, and I think it is important to children that you justify why you have these limitations, why they can't do something, whether it is because of safety or a time frame, why they cannot do that.*

*Teacher 24: Again, making sure you explain why we have the rules we have in the classroom, why they cannot have or do what they want, and maybe children want to do cartwheels in our classroom, and maybe that is not a safe place to be doing cartwheels, so let's go outside and you guys can show me all the cartwheels you want. And I think too that it's a good idea to ask the child, "Do you really feel that this is a good thing to do?" And they may say, "Well, no I really shouldn't do this, but I want to." Well, what are some other things we can come up with then? What are some problem-solving solutions? There are some very creative ways of solving problems that children can come up with. And I think that teachers really need to be genuine, they really need to show the kids, "I care about you, I understand how you feel," and not just blow them off. "Oh, I see you're crying, but oh well, there's nothing I can do about it." I think it's important that teachers sit down and listen to these kids' words, and see their expressions and their feelings and be sincere with them.*

*Teacher 24: I feel that time out may be necessary for certain situations, there are other steps that I believe should be taken first, before the child is automatically given a time out. There are a lot of ways of redirecting a child, I think first of all that it's really important for all the teachers in a classroom to be very observant about what is going on in the room, and stopping problems before they happen. I think there is a way to intervene if you can see that someone is about to do something that isn't safe for themselves, or their environment, or their peers, you really should be there right away before it actually takes places. Now sometimes you can't, especially if you are the only one in the classroom, and there may be situations that happen that you are not able to prevent, or intervene right away, and in those types of situations I think it is really important, first of all, that there is that dialogue, a discussion: What happened? How did it happen? Why did it happen? And I think it is important for teachers to remain calm and be objective, because there have been times, and I have done this in the past, "I'll jump right in and say, "Why did you hit him?" And then I find out, that's not what happened. He didn't hit him, he bumped his elbow on the wall or something. So I think it'd important for us to really listen to what the children are doing and what happened before we automatically jump in with our own conclusions. And again, with regard to creativity, if children want to be expressing themselves and it's not in a safe way,*

then we need to ask them, “What are some other things that we could have done instead?”  
Making sure that people are not hurt.

Teacher 24: What we do in the classroom, we ask if they are not able to sit with us, or they are not able to meet our needs, whatever it might be, they need to take what we call a quiet time, walk away from what we are doing, if they are being disruptive or aggressive, they need to go away and think about what’s going on, and we will ask them to go to a quiet corner, and they can sit there, they may look at a book, they may do some drawing, but that is their time to calm down, and one thing that I used to stress with them, we want you be with us, and be part of our group, and then we’ll usually go over and discuss with them, “Hey, what’s going on? Why are you feeling the way you are? Why did you hit or bite? Why did you do what you did?”

Teacher 24: They usually stop. I think that once they understand, and you show that you are genuinely concerned about them and the other child, if another child got hurt, that it is not okay, it is important that we have limitations, you are not allowed to bite someone, or whatever, you make sure that they are safe and that their needs are being met, in whatever way that you can, but you are also responsible for everyone else in that room too, and that we need to work as a team, and they are part of our team and they need to help us out. I don’t think that creative children are more disruptive or have more misbehaviors, than other children. I don’t think that creativity is involved in that. I think it is a matter of, they are not comfortable with limitations.

Expert 25: It seems that many of the characteristic described in the survey could relate to kids who are ADHD. These kids/many times are very creative but also can be quite disruptive. In the classroom a balance must be reached to maximize participation for all the kids. If a kid is derailing the activity for the group, his behavior can’t be tolerated. I think creative kids who have behavior issues can learn to interact with their peers and still express their creativity. We do not want to promote anti-social behavior under the banner of “creativity”, and neither do we want to squelch individuality. The key, in my opinion is to strike a balance between encouragement of creative ideas and classroom management.

Expert 27: [...] But sorry I have knew thousands of children as teachers and the teachers often complain of just such behaviors as you have listed-they may be very creative children-but may not. That would be specific to them but all of your criteria could be someone’s sign or view into their creativity.

Expert 31: I feel there is not one description of a creative student. It could be the quiet one by themselves. It could be the one always in charge of his group. It could be the most intelligent one in the class. But often is not the brighter one. Even a student with a learning disability could be very creative in other areas. When working with pre-school and primary it is difficult to determine what student is gifted or is he just “advantaged” by interventions. It is difficult to say is a child is a disciple problem or using his creativity.

### **Type of activity**

*Teacher 3: Again-depends on personality and personal interests of the child. Some creative children will be drawn to those activities, while others will be more drawn to other forms of self-expression.*

*Teacher 8: [...] There are other forms of dance, I got out of ballet, I'm a modern dancer now, and that allows for way more creativity.*

*Teacher 8: [...] Like we used to have to write stories every week using our vocabulary words, using them in a story, and they used to have mini competitions, everybody would read their story, and the class would vote on their favorite one, and a lot of times I was up there with the top people. And I just took it for granted, I just liked this assignment, this was a fun assignment for me. I never really thought of it as anything special, but everyone seemed to love my story. So that's when I think I realized that this isn't normal, because it was always the same group of people who got nominated for the top stories in those competitions. And I thought, maybe it's not that I just like this assignment, maybe I'm really good at it.*

*Teacher 8: Well, I was good at the creative parts, so that encouraged me to continue looking for creative outlets, I think that's why I continued writing, and got into choreography.*

*Teacher 12: It just depends what they are doing. If it's something new to him he is more reserved until he is familiar with what is going on, and comfortable with the activity.*

*Teacher 24: [...] So yes, I think the idea affects which one of us(parents) they consult with.*

*Teacher 25: If anything I am now more creative, because I have branched out into a different kind of art than I was doing [...].*

*Teacher 25: I liked art and drawing, that's all. (As a child)*

*Teacher 25: They just continued to do their artwork, some of them aren't very long out of here, they have only been gone a little while, but they were doing a lot of drawing before they left, illustrating everything, very interested in drawing, and I suspect they will continue to do that as they get older.*

*Teacher 25: Yes, we have had some potentially very creative people. Some kids we've had have gone on, they are exploring different things trying origami, and continuing to pursue different things, and ways of expressing their art, and some of those children have a variety of issues, I think one boy had Aspergers Syndrome, and that was his way of expressing himself, through art.*

*Teacher 25: I would bet that a lot of those kids would find expression through art for some of their negative feelings.*

*Teacher 25: [...] If I remember correctly, the young woman who shot the students at Penn State was also very creative artistically, and did some of the murals on the walls of some local*



buildings. I think she was working out a lot of stuff, emotionally, and that she expressed it with her art. And some of her paintings were very distressing. Yes, I can see art being an expression of those feelings.

Teacher 28: Yes (I was a creative youngster), when I felt comfortable I was creative. I was a little shy and did not like to take the lead. But I started dancing and realized how much I loved it and my insecurities seemed to go away. My love for dance expanded my horizons and made me more creative and outgoing. I was always dancing, singing or acting.

### **Class size**

Teacher 12: [...] Depending on what the activity is, or what the problem is. I was amazed, it was a very small class because they had so many kids in kindergarten that year that they had to add an extra class, so that shrunk the class size down to 17 kids, which is really good in my opinion, but I was overwhelmed with how much kids can soak up in an environment like that, and how she (the teacher) found interesting, creative, and fun ways to teach math, with manipulatives and they did computer work, he (my son) enjoyed that.

Teacher 8: [...] So I think if a lot of teachers were more open to understanding that not all kids learn the same way, and that some kids need more attention, I think individualized attention has a lot to do with it, but when a teacher has 30 or 40 kids in a class, it's kind of hard to pick out the one kid who's having trouble [...].

Teacher 24: [...] Now sometimes you can't, especially if you are the only one in the classroom, and there may be situations that happen that you are not able to prevent, or intervene right away, and in those types of situations I think it is really important, first of all, that there is that dialogue, a discussion [...].

### **Educational policies, learning expectations and evaluation techniques**

Teacher 24: That's a very challenging question, because I understand, especially for elementary students and older kids, that they need to meet the academic requirements. Now we have this new act, the "No Child Left Behind Act", that really is impacting first, second, and third graders, but I can also see it affecting pre-schoolers, with what we are expecting children to be able to do, especially with math and literacy skills, prior to first grade, or prior to third grade, or whatever. Unfortunately, I feel that does set limitations on the teachers' ability to have extra time to let children express themselves in other ways. There is such a focus on "We need to learn this skill by this date" and unfortunately that takes away any extra time, and now they are even talking about taking away recess! I have heard talk that there are schools in some states that do not do recess anymore. Talk about stifling their creativity! Not only does it stifle their creativity, but it puts too much stress on kids when they are not allowed to have that down time to relax and be who they want to be without worrying about performance or grades. So yes I think it is important for teachers to be accountable for the children and their test scores, but I don't know if we really need to be as strict or as rigid as we are. It's kind of sad to see, and I'm hoping that it doesn't

start to impact expectations at the pre-school level. Because I think it is so important, the children's work is their play, this is how they learn, and social and emotional development is such a key important thing at this age. I don't want kindergarten teachers coming up to me and saying, "We want your children to know all of the alphabet, to write their letters inside, outside, upside down, to be able to count to this number....Yes you can have some expectations from us, but I don't think it should focus so much on academics and cognitive skills. Social and emotional growth is so important at this age. Make learning fun, that's what I try to do in my classroom. Yes, they are learning all the time, but we want to make it fun for them, and I want them to come up to me and say, "How does this work? Why does this happen?" "I don't know, let's check it out! What do you think?@ Instead of, "We are all going to sit down and learn this right now." That's not the way I feel teachers should be teaching.

Expert 13: I thought of one true test: give a kid a brick and ask him/her for some novel things one could do with it. "Build a wall" earns zero points, "hold open a door" gets one point, use it to help you sink to the bottom of a pool earns two points, and I can't go beyond that to a five pointer because I'm not very creative (crush it to make red color to use in white plaster?)

Expert 31: I feel there is not one description of a creative student. It could be the quiet one by themselves. It could be the one always in charge of his group. It could be the most intelligent one in the class. But often is not the brighter one. Even a student with a learning disability could be very creative in other areas. When working with pre-school and primary it is difficult to determine what student is gifted or is he just "advantaged" by interventions. It is difficult to say is a child is a disciple problem or using his creativity.

### **Research influence on education**

Teacher 24: [...] When I was growing up, and I did not go to pre-school or kindergarten, my mom did what she could with us at home. When I was growing up there was not a lot of thought given to how children are actually learning. I think we have learned a lot in the last few years about child development, brain structure, and what works and doesn't work in teaching kids, especially at the age I teach, preschool.

Teacher 24: I'm not sure, because once the kids leave me, I don't really get to see how they are performing in elementary school, or how they perform for the rest of their lives, so personally I am not able to say, "This or that has benefited." But the research we are doing now, a lot of it is long vital, we will be able to observe these children as they grow over the next ten years, and hopefully we will see better outcomes in the future. But I don't know if we have reached the point yet where we can say, "This is where we've changed, and here are the results of what we've done."

### **Age, developmental stage, maturity, grade or school level, and being ready to learn**

Teacher 2: Yes, he is two and half years old [...].

*Teacher 3: Artless according to who's opinion? What is the age and capacity of the child? Is it abstract impression or lack of skill?*

*Teacher 4: I consider myself more creative as a child than now. More opportunities to be creative when younger.*

*Teacher 8: [...] The younger they are, the harder it is to get them to focus on one thing. They are always all over the place. I just know from my own experience, I have tried to give them an exercise, something creative and general, like "Okay, I want you guys to move like a butterfly." And that is all I say, they are free to move like a big butterfly, a fast one, a slow one, whatever. I would think they are free to do whatever. Sometimes it works, sometimes it doesn't. I'll find myself, if I get a really specific idea, something specific that I want them to do that might be a harder concept, recently I was trying to give them the difference between heavy and light, moving heavy and moving light. Light they managed to get, I was able to describe moving like a leaf blowing in the wind, and they got that. Then I said "Move heavy. Move like an elephant," because an elephant is big and heavy, so eventually I've got all the kids stomping around the room going Rrrrrroooooowww! Making elephant noises, but that's not what I had in mind. That's how they interpreted it, but they weren't quite getting the concept of what I wanted, so I kept trying to narrow the parameters, no, move with a weight on your hand, like you've got a hundred-ton weight tied to your wrist. Pretend you've got rocks tied to your arms, so then they just curled up on the floor like boulders. And they just sat there, "I'm a rock, I don't move." So the more I narrowed the guidelines, the more I could sense their frustration, because I wasn't just letting them go, I was trying to get them to do something very specific, and they were in the mindset, "This is a free dance, let's just go." And I was giving them so many rules and so many guidelines, that they just stopped [...].*

*Teacher 8: I started when I was five, but I didn't really get serious about it until I was 12 or 13. And that is when I fell in with very strict people. And for a long time I thought that was the way to do it, if you wanted to be a dancer you had to follow the rules, you had to look a certain way, you had to do this, you had to do that [...].*

*Teacher 8: [...] It helped me a lot in school, dancing that young, and all through elementary school, high school, college, having dance as a part of my life helped me in school [...].*

*Teacher 8: Probably in my pre-teen years, ages 10-15 really, just little things that I would take for granted that other people would be impressed with [...].*

*Teacher 8: [...] May be not for the really young ones, ages four or five, you can't be too rigid with them [...].*

*Teacher 8: [...] I mean you would expect a 6-year-old to be out of that stage. I would expect a child of 3 or 4 to do that [...].*

*Teacher 12: I think it is age to some extent [...].*

*Teacher 12: I think as we grow older, and have more life experiences, we learn more from other people, and see creative parts of other people that we may not have, and I think that helps you develop more, so I would say I am probably a much more creative adult because, from learning from my mother and other people how to be creative, the salmon thing, it's "Wow, what can I do now as an adult to make learning about weather more interesting? Well, we could do an experiment...." I can draw from my own childhood experiences, you would think I would be more creative now that I am an adult. I don't have as much opportunity to be as creative as I want, that is a problem, finding the time to do the things you enjoy, being creative.*

*Teacher 21: Yes, (I was a creative youngster) I feel that during my young days I was creative. I can recall experiences in elementary school thru high school that reflect my creative being. I was given opportunities to express and explore my environment.*

*Teacher 22: Yes. My son is very good of drawing detailed pictures. He has been drawing since about 3 or 4 years old. He is 8 now. He is very good at sculpting things with clay also. He is very visual.*

*Teacher 24: They are all three very different. The oldest is 15, in 10th grade, the middle one is 12, in 7<sup>th</sup> grade, and the youngest is in 1<sup>st</sup> grade, he will soon be 7. All three are different, in what their interests are, what they like to do, who they hang out with [...].*

*Teacher 24: [...] Especially for elementary students and older kids, that they need to meet the academic requirements. Now we have this new act, the "No Child Left Behind Act", that really is impacting first, second, and third graders, but I can also see it affecting pre-schoolers, with what we are expecting children to be able to do, especially with math and literacy skills, prior to first grade, or prior to third grade, or whatever [...].*

*Teacher 24: [...] I'm hoping that it doesn't start to impact expectations at the pre-school level. Because I think it is so important, the children's work is their play, this is how they learn, and social and emotional development is such a key important thing at this age [...].*

*Teacher 24: [...] When I was growing up, and I did not go to pre-school or kindergarten, my mom did what she could with us at home. When I was growing up there was not a lot of thought given to how children are actually learning. I think we have learned a lot in the last few years about child development, brain structure, and what works and doesn't work in teaching kids, especially at the age I teach, preschool.*

*Teacher 24: [...] I don't really get to see how they are performing in elementary school, [...].*

*Teacher 24: [...] And for my particular age group, not to stressing so much about, "Wow, they haven't learned to write their name yet," or "They're not even potty-trained yet and they are almost three." That's okay, that will happen [...].*

*Teacher 24: [...] to be more accepting because they have been more aware as they grew up, that people have different thoughts [...].*

Teacher 24: [...] Ages ranged, my younger brother was born when I was 14, and then my oldest sister is 11 years older than I, so there is quite a few years between everybody [...].

Teacher 24: [...] One little girl we have in our classroom, some of the things I watch her do with some of the objects or materials in our classroom, I've never seen other children use before...I have seen this little girl taking some of the food objects that we have, and then taking some of the tools that a doctor would use, like a stethoscope, and putting it on an apple. I've never seen a child do that before. So I think that her creativity is definitely there, and she is coming up with some neat ways of using materials that are definitely different from what I have seen before. But again, she does lack some of the other creative skills, such as fine motor; she has poor fine-motor control, so she doesn't do a whole lot of drawing. She loves to paint, but it's more gross motor where she is using her whole arms to do, so she does not have fine-motor skills yet. I think she does lack that creativity in some areas, but she definitely expresses it in other ways.

Teacher 25: I think sometimes adults look too much for the product and not enough at the process that went into it. If the child is at a young age, I think you have to look at the process. Some parents will look for that product, "What have you drawn for us today?" Meanwhile this child may have tried ten different things and not like the way they turned out, thrown them away, and not have anything to show at the end of the day.

Teacher 25: [...] The children who are 2 or 3 tend not to gravitate toward the art room much, but by the time they reach four or five, almost all of them are interested in coming in here and drawing stories, and putting words to their pictures, and working in general at art. So some of it is developmental, how old they are [...].

Teacher 25: He is very talented in music, he is 25 [...].

Teacher 25: [...] I think I have actually grown more creative as an adult.

Teacher 25: When children get older you can teach things like perspective, and you can start that when they are younger [...].

Teacher 25: [...] You need to find something, sincerely, about every piece of art that a child brings to you to look at, to notice, and to compliment. And I think that is the most important role of the teacher for pre-school children.

Teacher 25: [...] If the child is at a young age, I think you have to look at the process [...].

Teacher 25: [...] Just teachers in general, they'll have art period in kindergarten, I have seen a lot of kindergarten artwork go home, and they'll make paper-bag puppets, and the kids don't cut out the things for the puppets [...].

Teacher 25: Yes, I have had some people, I don't know if you can call them cheaters at the pre-school age, but they might hide other people's things and not tell them where they are, and deny it when they are asked.

Teacher 25: [...] I don't know that pre-school kids do that.

Teacher 25: I suspect that when you get into adolescence, and people are actually starting to do this, feel very insecure about themselves [...].

Teacher 25: Yes. (as a creative youngster) I liked to draw and played clarinet through high school.

Teacher 27: [...] (our center) has children ages two to five unsepartated in multi age grouping with many open activities, child chosen and developmentally appropriate practices.

Teacher 28: Yes, they (my children) are both very creative and imaginative. They both (3 and 7 years old) love to make crafts, dance, sing, read and listen to music among other things [...].

Teacher 31: She (my daughter) is 3 yrs old and it is difficult to judge creativity at this age. She is highly intelligent and plays well by herself. She speaks with her animals/dolls, she draws, sings and writes her own songs. For her age, these are probably creative signs.

Teacher 39: Somewhat, I can remember being concerned with others' expectations and wanting to do things "by the book". I do not recall having many opportunities to be creative in my elementary experience. I believe that it was not until high school that creativity was encouraged [...].

Expert 32: [...] I believe that, just as there are multiple intelligences there are multiple ways that creativity evidences itself in human beings, young and old [...].

Expert 31: I feel there is not one description of a creative student. It could be the quiet one by themselves. It could be the one always in charge of his group. It could be the most intelligent one in the class. But often is not the brighter one. Even a student with a learning disability could be very creative in other areas. When working with pre-school and primary it is difficult to determine what student is gifted or is he just "advantaged" by interventions. It is difficult to say is a child is a disciple problem or using his creativity.

### **Motivation, interest, and personality style**

Teacher 3: Could go either way-depends on motivation. (for item: failure to follow directions)

Teacher 3: You have to take into account the child's overall personality style to know if the "trouble making" is intentional, disruptive, attention-seeking, a means of distraction, or a side effect of creativity.

Teacher 3: Again-depends on personality and personal interests of the child. Some creative children will be drawn to those activities, while others will be more drawn to other forms of self-expression.

*Teacher 8: [...] So I think that was another thing that kind of drove me toward more creative outlets, I was never the best dancer in the class, and my life was dance, I was like an athlete in training, but I was never the best one, I always had things to work on. For some people, those things came naturally, but I had to work. I never had the highest kick, or the lowest split, the best turns, the highest jumps, whatever. So I think what drove me to the creative things, I seemed to be good at creative stuff, crafts, music, writing. I was good at the stuff I made up, it may not have looked the greatest, but people liked the way I put stuff together in dancing. And I think that's what drove me, that I was actually good at something and didn't have to work so hard at it, because I was working so hard at being good at dancing, it was so nice to have something that I was good at, that people actually enjoyed, and didn't give me a hard time about. I think that pushed my creative side a lot.*

*Teacher 8: [...] It also depends what they would be doing if they were not in school. Are you going to be reading and studying on your own, focusing on the things you want to learn, do you not want to go to school because you don't want to learn math and science? Okay, if you don't go to school will you be reading up on literature, reading about art, are you doing the things you want to do, or just ignoring the things you don't like about school? Or are you not going to school just because you're lazy and don't think you're going to get anything out of it? So it's a question of the motivation behind it [...].*

*Teacher 25: [...] How interested they are [...].*

*Teacher 25: He is very talented in music, he is 25, and he has just applied for a new job, he is trying to work theater into his music, he has applied for a job to do backup on a play, so he is continuing to use music, he wasn't sure he wanted to be a musician, because it is not an easy life, but he stuck with it.*

*Teacher 25: Well, music of course, I have always loved music, so that has been a continuing factor throughout my life....*

*Teacher 35: Many behaviors are personality-some creative children are very outgoing, some are shy. Some are leaders and problem solvers. Some have no interest in leading and prefer to be left alone to pursue interests [...].*

### ***Social Pressure; feedback and others' responses***

*Teacher 3: Artless according to who's opinion? [...]*

*Teacher 8: Yes, in a lot of other things, I did. It was sad because the one thing I wanted recognition in, I wasn't getting, the dancing. So I think that is why I went to other creative things, and tried hard to excel in areas that I felt I was good at, because I was getting good feedback.*

*Teacher 25: I encouraged him to play, and gave him positive reinforcement when he did, lots of praise when he accomplished something [...].*

*Teacher 25: [...] But I think mostly it is looking at their art and encouraging them, finding something that is good about each piece of work that a child does, even just saying, “Oh, I like the way you put those two colors together” I think that is what a teacher needs to do to encourage, not to say, “Oh no, that doesn’t look like...” but, “Oh, I like the way you did that!” You need to find something, sincerely, about every piece of art that a child brings to you to look at, to notice, and to compliment. And I think that is the most important role of the teacher for pre-school children.*

*Teacher 25: I suspect that when you get into adolescence, and people are actually starting to do this, feel very insecure about themselves [...].*

*Teacher 39: Somewhat, (I consider myself as a creative youngster), I can remember being concerned with others’ expectations and wanting to do things “by the book”. I do not recall having many opportunities to be creative in my elementary experience. I believe that it was not until high school that creativity was encouraged. I can recall my parents encouraging and allowing me to express my creativity.*

*Expert 26: [...] #51 (nail biting) I think could be a characteristic of a creative child if he/she is being forced to fit the “normal” mold [...].*

*Expert 32: [...] It is the environment and the support of others to respond to children’s interests and to investigate that environment that enhances each child’s ability to create through play [...].*

### ***Self-concept, image, and esteem***

*Teacher 1: Sometimes yes and sometimes no. yes, because I played outdoors a lot making forts and hiding places. I relied on my imagination a fair bit. No, when I was lazy and bored. (as a creative youngster)*

*Teacher 4: I consider myself more creative as a child than now. More opportunities to be creative when younger.*

*Teacher 8: [...] I considered myself very creative.*

*Teacher 11: Somewhat I enjoyed working on craft ideas but I would not have considered the activities to be real creative.*

*Teacher 15: No I was not a risk taker and we were not encouraged to go away from the norm.*

*Teacher 16: Yes (I consider myself as a creative youngster)*



Teacher 17: Yes, I had to create certain toys and environments when I was young. I did not see this as an obstacle. In fact, I enjoyed these times.

Teacher 18: Probably not (not creative) as much as I would like to think because of a shy personality.

Teacher 19: No (I am not a creative person or teacher or parent or was not a creative youngster).

Teacher 21: Yes, (I was a creative youngster) I feel that during my young days I was creative. I can recall experiences in elementary school thru high school that reflect my creative being. I was given opportunities to express and explore my environment.

Teacher 24: Yes. I feel that the key thing is for children to build that self esteem, to be proud of who they are, and then they'll want to venture out and do other things and express themselves in other ways, and feel confident.

Teacher 24: No. No. Other than the parents' recognition, and the parents being proud of them, and may be that will boost their esteem a little bit, but I don't think that is going to take place overall throughout the whole classroom environment.

Teacher 24: Again, I feel to some degree that I am not a real creative person, but I come up with these visions of things I want to see or things I want to do, but I have a real hard time actually putting it down on paper, whether it's a research paper or reading an article, that I feel that I have grown to be able to do that better [...].

Teacher 24: I personally do not think it's related, I think it is more related to your self esteem, and your ability...I don't know, I really don't know, because growing up I did bite my nails, but I always thought it was a problem I had because of being one of ten kids, and we had a really difficult childhood [...].

Teacher 24: [...] But I think it's more a feeling of, a lack of self esteem, than a lack of creativity.

Teacher 25: Umm hmmm. (when asked you consider yourself as creative person, and parent).

Teacher 25: Yes, I enjoyed the arts as a child, and I played clarinet in the high-school band, and sang, so music was probably the thing I was most involved in.

Teacher 25: If anything I am now more creative, because I have branched out into a different kind of art than I was doing, and I am still exploring different things, trying new things.

Teacher 27: I was a creative youngster. I had a large variety of experiences with nature, insects, animals, and people of all ages. Rich childhood, loving parental care. I danced as a child, drew pictures, wrote stories, loved books, and horses, sang in children's choir, loved play acting and dramatic play.

Teacher 28: Yes (I was a creative youngster), when I felt comfortable I was creative. I was a little shy and did not like to take the lead. But I started dancing and realized how much I loved it and my insecurities seemed to go away. My love for dance expanded my horizons and made me more creative and outgoing. I was always dancing, singing or acting.

Teacher 32: Not really (I do not consider myself as have been creative youngster).

Teacher 33: No (I do not consider myself have been as a creative youngster)

Teacher 34: Yes, imaginative as a child

Teacher 38: No (I do not consider myself as have been a creative youngster)-I developed more and enjoyed more as a teacher. I found that I loved science and open ended questions. Also, weaving art into our stories.

Expert 13: I thought of one true test: give a kid a brick and ask him/her for some novel things one could do with it. "Build a wall" earns zero points, "hold open a door" gets one point, use it to help you sink to the bottom of a pool earns two points, and I can't go beyond that to a five pointer because I'm not very creative (crush it to make red color to use in white plaster?)

Expert 27: I began to just read to see if there were particularly any I would say no to. I have realized I am looking at each of these as a characteristic of a child and that any could be parts of or signs of a child's individual creative self. I may need to be eliminated as a bad sample [...].

### **Having special needs**

Teacher 8: I have worked with several learning disabled children, and it's sad to say, a lot of parents will come to me and say their child has ADD (Attention Deficit Disorder) or ADHD. And they tell me as a warning, "Watch out for this kid, you may have to discipline him more." And I don't discipline them more than I do any other child, really. I think a lot of times, in today's schools, and in our modern medicated society, I think a lot of kids that are labeled with a learning disability are just frustrated. They don't learn the same way that other people do. I was that way. If I were a child in today's society, I probably would have been told that I have ADD. One of my brothers, they said that he had a learning disability, but really he just sees things in a totally different way than everyone else sees them. He understood the material that was presented, but he didn't do his assignments the way everyone else did.

Teacher 24: I probably would say that if they are a special-needs child, or they have lack of language abilities or cognitive abilities, that would probably interfere with their creativity, their brain is not able to connect for them to express themselves, if it is a motor skill, they may not have the motor movement or the ability to dance, or to do whatever it is we do with our bodies to express creativity. I think that sometimes they can come up with some really different things to do, again, one little girl we have in our classroom, some of the things I watch her do with some of the objects or materials in our classroom, I've never seen other children use before. And I'm thinking of our dramatic-play area, where we have a lot of dress-up things, and doctor kits, we

have just started a new theme on our bodies and our bones, and I have seen this little girl taking some of the food objects that we have, and then taking some of the tools that a doctor would use, like a stethoscope, and putting it on an apple. I've never seen a child do that before. So I think that her creativity is definitely there, and she is coming up with some neat ways of using materials that are definitely different from what I have seen before. But again, she does lack some of the other creative skills, such as fine motor; she has poor fine-motor control, so she doesn't do a whole lot of drawing. She loves to paint, but it's more gross motor where she is using her whole arms to do, so she does not have fine-motor skills yet. I think she does lack that creativity in some areas, but she definitely expresses it in other ways.

Teacher 25: That's the little boy with Asperger's, he had a lot of issues with social situations, but he was very talented, he showed it through drawing.

Teacher 25: They don't know why, most children with Asperger's have this problem. They are unable to understand the social connections and social connotations that people engage in. They don't understand what is going on when kids are talking to each other. They are confused by non-verbal communication, they don't understand that. If someone stands back when you talk to them, you and I would understand that maybe they need a little more space, but this boy would not understand that. He would not recognize those social cues.

Expert 15: Some of these behaviors could be because of creativity-some may be because of confusions from processing information in a different way and not having confusions resolved; therefore I have marked some √ and X because it could be a result of either.

Expert 20: [...] Too many factors and emotions are being questioned (in this checklist). Some children with emotional and cognitive disorders are creative, others may not be.

Expert 25: It seems that many of the characteristic described in the survey could relate to kids who are ADHD. These kids/many times are very creative but also can be quite disruptive [...].

Expert 25: It seems that many of the characteristic described in the survey could relate to kids who are ADHD. These kids/many times are very creative but also can be quite disruptive.

Expert 31: I feel there is not one description of a creative student. It could be the quiet one by themselves. It could be the one always in charge of his group. It could be the most intelligent one in the class. But often is not the brighter one. Even a student with a learning disability could be very creative in other areas. When working with pre-school and primary it is difficult to determine what student is gifted or is he just "advantaged" by interventions. It is difficult to say is a child is a discipline problem or using his creativity.

## **Creativity and IQ**

Teacher 5: Yes, I believe that human intelligence predisposes creative problem solving and thinking. I believe that all humans have this tendency.

*Teacher 24: [...] I don't know if it is fair to say that if you are not intelligent, if you don't score well on standardized tests, then you are not creative [...].*

*Expert 31: I feel there is not one description of a creative student. It could be the quiet one by themselves. It could be the one always in charge of his group. It could be the most intelligent one in the class. But often is not the brighter one. Even a student with a learning disability could be very creative in other areas. When working with pre-school and primary it is difficult to determine what student is gifted or is he just "advantaged" by interventions. It is difficult to say is a child is a discipline problem or using his creativity.*

*Expert 32: [...] I suppose the crux of my dilemma lies in the fact that I believe that, just as there are multiple intelligences there are multiple ways that creativity evidences itself in human beings, young and old. If the very definition of creativity is "to bring something new into existence" be it an idea, a structure, a work of art, a text, a recipe [...].*

## **Research Question 6:**

### **(6) What are the relationships between teachers' backgrounds, perceptions, and their level of recognizing creative behaviors in young children?**

This section investigates the relationships between demographic variables and teachers' perceptions and recognition levels of creative behaviors in young children. Chi square analysis has been used to examine the association between the recognition levels of creative behaviors and selected teachers' characteristics such as: teachers' perceptions of themselves as a creative persons; teachers and having children of their own; teachers' perceptions of their own children as creative children; teachers' perceptions of themselves as a creative parents; teachers' perceptions of themselves as a creative teachers; teachers' perceptions of themselves as having been creative youngsters; highest education level of teachers; positions held; years of formal experience teaching young children; and years of informal experience teaching young children.

The following tables (Tables 4, 5, and 6) summarize the relationship of these selected demographic factors with creative behaviors classified by percentages of (yes) responses given to

indicate teachers' approval to consider this behavior as a creative behavior or as related to or reflecting creativity. According to these percentages of approval responses, the behaviors have been classified into three major groups of behaviors that reflect three levels of recognition: behaviors that received 75% or more of (yes) or approval responses by participant teachers, which are represented in Table 4; behaviors that received 50-74 % of approval, which are represented in Table 5, and behaviors that received less than 50 % of teachers' approval.

Table 4 represents the examined relationship between the selected demographic factors in addition to teachers' perceptions and creative behaviors for which 75% or more of the respondent teachers indicated that the behavior may be a precursor or sign of creativity.

Out of 106 behaviors that checked were by 75% or more of participant teachers, 19 behaviors (19/106) were found to have a significant relationship with teachers' self perceptions as being creative parents and creative teachers and (16/106) behaviors were found to have an important relationship with their years of formal teaching experiences of young children. These three demographic characteristics of participant teachers, their perceptions of themselves as creative parents and teachers, and their years of formal teaching experience with young children, were found to be the background factors most frequently influencing whether the participant teacher indicated that behavior related to creativity. Conversely, the least correlated characteristics with whether the behavior was a reflection of creativity were the position held by teachers (3/106), whether teachers perceived their own child as creative (3/106), and the education level of teachers (4/106).

On the other hand, of a total number of 10 background factors, behaviors that received 75% or more of approval and were associated significantly with a high number of these 10 factors were: loving to be surprised (5 demographic characteristics out of 10, 5/10) fond of

making up surprises (5/10), drawing divergent emotions (4/10) and classifying unrelated things (4/10). Most of the demographic characteristics which exceedingly shaped teachers' recognition of these 4 behaviors fell under teachers' perceptions of themselves as a creative parent, person, teacher, and youngster. Quite the reverse, behaviors such as mental risk taking (0/10), and distinguished verbal fluency (0/10) were the behaviors influenced least by any of the 10 demographic characteristics.











262	Rejecting conformity				X	X					
265	Spending long time in life activities				X	X				X	

Table 6 demonstrates the observed connection between the selected demographic factors besides teachers' perceptions and creative behaviors which 50-74% of the respondent teachers indicated may be a precursor or sign of creativity. Out of 81 behaviors that were checked by 50-74% of participant teachers, 29 behaviors (29/81) were found to have a noteworthy relationship with their years of formal teaching experience of young children, and (18/81) were found to have a considerable relationship with teachers' self perceptions as being creative parent. These two demographic characteristics of participant teachers, years of formal teaching experience of young children and teachers' perceptions of themselves as creative parents, were found to be the background factors most frequently influencing teachers' recognition level of creative behaviors.

On the contrary, the slightest correlation with whether the behavior was a creative behavior or may be related to creativity was if teachers had a child of their own (4/81) and teachers' perceptions as having been a creative youngster (3/81). Alternatively, behaviors that received 50-74% of approval and were associated significantly with a high number of these 10 factors were: acting differently than expected for sex norms (5/10), lying (4/10), love of being challenged (4/10), and performing impressively in time-limitless activities (4/10). Most of the demographic characteristics which had an effect on teachers' recognition of these 4 behaviors were teachers' perceptions of their self, particularly, their perception of the self as a creative parent, person, and youngster; teachers' perceptions of their own children as creative, position held by teachers and years of experience of formal teaching of young children.

**Table 6: Relationship summary of demographic factors with creative behaviors checked by 50-74% of participant teachers**

Code #	Behavior Label	Creative Person	Have Own Children	Was Creative Child	Creative Parent	Creative Teacher	Have a Creative Youngster	Education Level	Position Held	Years Informal Teaching	Years Formal Teaching
3	Frequent imitation										X
4	Wrong starts in performance										
6	Misbehavior										
8	Sympathetic behaviors	X			X	X					
14	Rules breaking							X			
19	Failure to follow directions										
23	Over-activity				X						
24	Sensitivity to criticism										
25	Help, co-operation, and sharing				X						
29	Being very ambitious								X		
30	The desire to surpass			X							
34	Favorite ways of learning							X			
35	Acting in a heroic manner										
38	Easily bored					X					
40	Self reinforcement behaviors										
42	Lying	X	X		X				X		
43	Alertness										
47	Omission of toys' parts				X						X
53	Preference of silence				X					X	
55	Effective engagement in groups				X						X
56	Not accepting failure										
57	Pride of ownership and enjoyment of values				X						X





237	Generalization of ideas from specific information										
242	Confidence in his/her abilities										
243	Acting very determined										X
247	Strong ability to concentrate				X						X
248	Not paying attention to the set order										X
251	Performing impressively in time-limitless activities			X			X	X			X
253	Ability to read others' emotions and attitudes										
258	Cleverness in reading maps										
259	Being excitable at times									X	
263	Prominent compositional skills				X	X					

Table 7 displays the observed relation between the chosen demographic features and teachers' perceptions of creative behaviors for which less than 50% of the respondent teachers indicated that the behavior may be a precursor or sign of creativity. Out of 78 behaviors that were checked by less than 50 % of participant teachers, 34 behaviors (34/78) were found to have a remarkable association with their years of formal teaching experience of young children, (16/78) were found to have a considerable relationship with the position held by teachers, and (15/78) were found to be connected with teachers' self perceptions as being a creative person. These three demographic characteristics of participant teachers, years of formal teaching experience of young children, position held by teachers, and teachers' perceptions of the self as a creative person, were found to be the main background factors that mostly affect teachers' level of recognition of creative behaviors.

Quite the opposite, the smallest correspondence with whether the behavior was viewed as a creative behavior or related to creativity were teachers' self perceptions as having been a creative youngster (4/78), the education level for teachers (3/78), and teacher's perceptions of their child as creative (0/78).

Of a total number of 10 background dynamics, behaviors that received 50-74% or more of approval and were linked appreciably with a high number of these 10 aspects were: sensitivity to responsibility (6/10), more interest in physical play (4/10), single-mindedness (4/10), seeking affection or appreciation (4/10), verbal recalling of adult's directions (4/10), being defensive and ready to fight (4/10), and verbalization of self-feedback aloud (4/10).

Most of the demographic characteristics which highly controlled teachers' recognition of these 7 behaviors were teachers' perceptions of self, predominantly their perception of the self as a creative parent, the position held by teachers, and their years of experience of formal teaching of young children.









256	Problems with possessions		X							X	X
257	Difficulty focusing on fine points				X	X					X
248	Not paying attention to the set order										
260	Learning complicated concepts effortlessly										X
261	Weakness in activities related to listening skills									X	
264	Fears of losing loved ones				X				X		X

### Research Question 7:

#### (7) What are the best ways to help children fully express their creative potentials?

Many suggestions, recommendations, and ways about how to successfully help children to develop and enhance their creativity so they can fully express their creative potential, have been reported by participants. Some of these recommendations include: the significance of reviewing and analyzing how teachers choose and design activities for children in the classroom; examining whether teachers adapt creative skills and model creativity through classroom activities; the free time, space, choices, opportunities, and exposure that we offer to children for unrestricted play; the variety of materials that we present; the way teachers handle conflicts and frustration when they occur in children; how emphasizing the emotional aspects can be important for enhancing creativity; how teachers become a creative problem solvers for issues coming up in the classroom; how to relax students and help them to express themselves all the time with different activities; considering children's mood changes and emotional status; emphasizing the creative process as the product; supporting free thinking and experimentation;

reducing the restrictions and limitations as much as possible because they strongly stifle creativity; rewarding creative behavior; providing guidelines; taking advantage of children's multi-dimensional thinking; giving children freedom to go beyond guidelines; the significance of increasing the level of awareness of the wrong practices in the classroom that stifle creativity; how to take advantage of children's creative abilities; how to emphasize children-centered learning activities; how to help children who tend to suppress their imaginative expressions to express them through creativity; avoiding rigid teaching and facilitating learning activities that allow more flexibility; valuing freedom practices in building children's self-confidence and stimulating their motivation and interest to learn; how teachers can be creative in balancing between reaching target goals and accomplishing creativity at the same time; avoiding using creative materials in uncreative ways; staying away from using coloring books; tolerating the lack of perfectionism in children's work; reinforcing children's creative work even if they did something different than the requested or expected goals; leave details in the learning process to be created by children, not all set by teachers; keen observation of children's work and positive comments about their work are vital dynamics to enhance creativity; facilitating children's learning environment to enhance their abilities to express their creativity in different ways and outlets; hands on activities are the best activities for children to stimulate their creativity and facilitate their learning; the choice of hands on activities should be highly relevant to children's interests; the value of using sensory abilities in children's learning outcomes; diversity and learning as teachers how to accept differences in others including children; the acceptance of children's diverse approaches to reach the same goal; teaching children also to feel accepted when they think or do things differently than other children to reach the same goals; trying to limit sources of pressure on children, accept them as they are children, and appreciate their

uniqueness even if they are late bloomers in some abilities or having special needs; not letting children become stressed by the high level of learning expectations that set by parents or teachers, including expectations for children's to be copies of adults and how they perceive the world; providing comfort in the environment, including the home or classroom is a key for creative development and expression; open dialogue, listening to children's ideas and watching what they are doing and why they are doing it in certain ways. All children are creative by nature, but the real challenge for teachers, parents, and other adults is how to help children to fully express what they have already been gifted by nature. The unfortunate situation of the majority of current curriculum activities presents the significant need for curriculum reforms. Teachers using creativity in reaching the balance between children's self-expression and classroom behavior management and goals is a serious issue to be addressed in order to enhance creative expressions in the school system.

### **Best ways to nurture children's creativity**

*Teacher 8: I think encouragement of free thought is important, encourage meant to be exposed to lots of different areas, reading a lot of books, or something as simple as just giving them a box of crayons and a blank sheet of paper[...].*

*Teacher 8: [...] But just letting them experience more. Some kids are not allowed to read fairy tales; they are only allowed to read science or nature. I think kids need to be exposed to a wide variety of things, and let that wide variety influence how they think.*

*Teacher 8: [...] So any kind of stifling or over-restriction, like when kids are not allowed to do something, that stifles creativity in some way.*

*Teacher 8: [...] With children, children can come up with anything if you give them a little bit of leeway, they'll come up with some very interesting stuff. So I think as a teacher, they need to encourage creativity, they need to just give kids a few guidelines and then let them go, maybe not hold them into the guidelines too strictly. But at the same time, if you do try to hold them into the guidelines too strictly, that can suppress some of the creativity that they have at that time. Kids are always going in a million directions at once, they are never just set on one thing, especially if they are young [...].*

*Teacher 8: [...] I think a teacher can unknowingly suppress creativity; they can do it without knowing it. By imposing restrictive guidelines and not letting them go outside those guidelines.*

*Teacher 8: Well, if they are exhibiting a lot of creative abilities, I try to let them work with their creativity, I make the guidelines a little bit looser, I tell them exactly what I want, but I leave out some details so they can kind of figure it out themselves, and see how they figure it out. Maybe not for the really young ones, ages four or five, you can't be too rigid with them, but with kids eleven and twelve, I might give them a movement phrase, but leave out the head, or how they move their arms, I will give them a framework, then let them figure out what they need to do within that, and that will give them the structure they need to learn the steps, but at the same time it's giving them a little bit of freedom to figure out stuff on their own, how would they like it to look, how do they feel the arm would work best, or how do they think the head works best? And likewise, I also have students who do not exhibit creative behavior, and I have to give them a little more direction, "Okay, move your head this way, move your arm that way." Or I'll tell them something, but I'll also try to give them a follow-up, if I see the student kind of struggling with the creative side of it, "Okay, move your arm here, but how do you think it should move after that?" I'll give them a little piece of something to start with, but then I try to encourage them to take it on their own, because I don't like "teaching rigid" the way my old teacher used to do. I try to give them the instruction they need, but I also like to have them, let them be a little more flexible, insert a little of themselves into what they are learning, because I think that helps them learn too [...].*

*Teacher 8: [...] So I like to give them a little more freedom, because it gives them more self confidence, and also the desire to learn more.*

*Teacher 8: Yeah. I mean that's the trick, being able to help them achieve the final goal, but nurturing the creativity at the same time. I think as a teacher the trick is not to let the creativity totally overwhelm what you are trying to accomplish. It's important not to stifle it, but you don't want it to take over, because as a teacher you do have a goal, teaching them the material, getting a certain amount of material introduced to them, and having them retain that information, but it's a very fine line of being able to get them to learn that material and still keep the creativity going.*

*Teacher 8: [...] I think just being given a lot of opportunities to explore different ways helps children to be creative.*

*Teacher 12: I think there are a lot of ways we can nurture creativity, in the classroom, we have different stations around the room, sometimes at the art table we'll just put stuff out, there is an easel open all the time, one day the kids will be building things with blocks, another day they'll be making a garden, so you can nurture creativity through the kinds of activities you plan for the kids.*

*Teacher 12: Give them the benefit of the doubt. If you think they are having a bad day, or having trouble in school, or acting out, talk to them, take the time to see what is on their minds, maybe it*

was something that happened at home that would seem trivial to an adult, but would be very important to a child, their baby brother knocked over the cool castle they built with their blocks.

Teacher 12: It should provide the kids with some open-ended activities, and again, it's the process, not the product. I always put things on a table, and just see that the kids have some outlets, I always try to leave the easel open, so the kids can paint or draw, there is chalk available, and a large area for them to work.

Teacher 24: I think there's got to be a nice balance. There's got to be enough free time for the children, through recess, and through study halls, and whatever they can do, so that children have that time to be who they want to be, and do what they want to do. One key thing that I think, when we are doing structured activities, it's got to be hands on. It's got to be things that let the children use their senses. They need to be able to taste it, smell it, feel it, hear it, touch it, whatever the instructor can do to make it hands on. And it needs to be taught in a variety of ways, it can't be just a teacher standing up reading a book or showing an overhead. It's got to be done through use of different movements, or maybe peer teaching, or group activities where you have a group of children working on a certain project, there's got to be a few different methods to get across the same point. And it definitely has to be hands on, and that's what I try to do in my classroom. Hands on is the way to go to for them to be interested in learning. And it's got to be things that they want to learn about.

Teacher 24: Oh, number one, I think if children, as adults, are more considerate about people thinking other ways, just having a better view that it's okay for everybody to have different ideas on how to live, their beliefs or lifestyle, to be more accepting because they have been more aware as they grew up, that people have different thoughts, and it's okay to have different ideas about how to reach the same goal in the end [...].

Teacher 24: I think it's important that we let children be children, first. Don't put so many pressures on kids today. They're competing in all aspects of life, financial, emotional, we always want them to be the best, and I think it's okay for them to know that it's good for them to be who they want to be, and they should feel good and proud about who they are, and if they want to come up with these crazy ideas about different ways to do things, it's okay to express yourself with that, and not to feel so pressured into learning and expectations, and again, I'm looking at my group, and thinking, it's okay to have fun, to take time out and enjoy life, and for my particular age group, not to stressing so much about, "Wow, they haven't learned to write their name yet," or "They're not even potty-trained yet and they are almost three." That's okay, that will happen. I just think that as a society we need to slow down and take a breath and appreciate who we are.

Teacher 24: First of all, they need to feel comfortable in our room. Or for a parent, they need to feel comfortable coming up to a parent and talking to them. I think that is probably the basic need that needs to be taken care of first, that general concern, and feeling comfortable, and making sure that we are not stopping their creativity, or interrupting them, or not giving them the freedom to express themselves. Because I know there are people out there who would say, "I know what you want, let me just get it for you," and they don't really take the time to listen to their words. So the kids are not able to, they are probably thinking some other thoughts, but we



are stopping them, so they are not able to express that, so I think it is important that we have that type of open dialogue in the classroom, or at home, for a parent. I know parents tend to, I'm a parent too, and I know how busy we tend to be, and it's not that we don't want to take the time to sit down and really listen to our kids, but there are other things that are prioritized, we've got to go here or there, get this or that done, but again I think it is important for parents and teachers to let kids feel comfortable talking and expressing themselves, making themselves open to that.

Teacher 25: Throw away all the coloring books! That's the main thing I would do. I see a lot of stuff coming out of schools that I would call cookie-cutter art, where the teacher cuts out all the shapes, and the kids have to paste it all together in a certain way, and I think we ought to get away from that, let the kids cut out their own work, even if it isn't perfect, at least it is their work rather than somebody else's. I think those are the things we have to do encourage more creativity in kids.

Teacher 25: One thing you could do is walk up to the child and say, "Oh, look what you've done, you've put three eyes on here, tell me about this creature you've made!" And let the child verbally expand on this, rather than trying to discourage them from doing it.

Teacher 25: The biggest thing you can do is notice what the child is doing, and find something good to say about all of their work, and encourage them, and expose them to different ways of expressing themselves. The teacher will show the kids different things they can do and make, but it's mostly exposure to a lot of different types of art.

Teacher 27: [...] All children can grow in creativity by participating in chosen art and dramatic play given a flexible time frame, access to good materials and open ended art activities. What we are after is not copies of adults' concepts but the child's own concepts of the world. It is important to value the process of color selections child made shapes rather than emphasizing the end product [...].

Expert 23: [...] The thing is, I find most kids are creative and the point is how to bring it out of them. I do think that most curriculum activities stifle creativity in children.

Expert 25: It seems that many of the characteristic described in the survey could relate to kids who are ADHD. These kids/many times are very creative but also can be quite disruptive. In the classroom a balance must be reached to maximize participation for all the kids. If a kid is derailing the activity for the group, his behavior can't be tolerated. I think creative kids who have behavior issues can learn to interact with their peers and still express their creativity. We do not want to promote anti-social behavior under the banner of "creativity", and neither do we want to squelch individuality. The key, in my opinion is to strike a balance between encouragement and supporting of creative ideas and classroom management.

## **CHAPTER 3**

### ***SUMMARY, CONCLUSIONS, RECOMMENDATIONS, AND IMPLICATIONS***

#### **Purpose and Background**

This study aims to initiate a movement calling for innovative school reform, “Education for Creativity rather than Education for Achievement”. The main purposes of this study are to explore in general stake-holders’ perspectives, including experts and teachers, on creativity in young children; explore specifically whether teachers are able to recognize creative behaviors in young children; identify some of teachers’ misconceptions about what constitutes creative behavior; identify descriptor behaviors of creativity that are observable and reflect the creative process rather than the creative product; identify the dynamics of creative expression; and identify the most effective ways to enhance children’s creative expressions in the school system. The first two chapters described the introduction to this research; purpose of the study; need for the study and educational significance; research questions; organization of the study; assumptions made in this study; definitions of terms; limitations; brief overview of the literature; research methodology; and summary of the research data and findings. This chapter discusses the research findings, conclusions, recommendations, and implications.

This chapter begins with a summary of findings and conclusions related to each research question, discussed in relation to the presented literature. Then memos about participant teachers’ and experts’ responses are presented. Direct quotes from participants of this research study are used to support the reported memos. The chapter concludes with recommendations and implications for educational practices.

## **Summary of Findings Related to Research Question 1**

### **Research Question 1:**

#### **What are the diverse perceptions of creativity in young children among experts and teachers?**

As a general overview; the visions of this study's participants regarding creativity is very consistent with the literature (e.g., Guilford as cited in Parnes, Noller, & Biondi, 1977; Presbury, Benson, Fitch, & Torrance, 1990; Goswami, 1999; Floistad, 1993; Cropley, 2001; Jeffrey & Craft, 2001; Lynch & Harris, 2001; Millar, 2002; Pink, 2005).

Many participants have focused on creativity and its meaning in terms of the imagination; thinking outside the box; problem solving; openness of mind; different ways of looking at things; interesting ways of doing things; creativity as process rather than product; and creativity as having different types and outlets, though mainly the arts were reported by participants.

So the focus was generally on the cognitive aspects of creativity rather than the social, emotional, physical, and other aspects of creativity. Each participant focused on only a few aspects of creativity that connected to his/her personal experience, rather than looking at creativity from a broad perspective with all of its diverse dimensions. Given the basic knowledge and rich experiences of creativity that participants were expected to have, it is clear that many are not familiar with other possible meanings or skills that creativity might involve.

Participants' responses about the benefits of creativity addressed three levels: global, societal, and individual. These responses coincided with the literature in relation to these areas (e.g., de Bono, 1992; Craft, 2000; Jeffrey & Craft, 2001; Starko, 2001; Florida, 2002; Millar, 2002; Ugur, 2004).

Most responses focused mainly on the benefits of creativity such as effective problem solving; enjoyment; doing things differently; making individual feels unique and special;

enjoying more inventions and technology advances; a learning tool and effective teaching strategy; personal and professional development; and organizational solutions.

In sum, common topics have been generated by participants that focused on diverse views of creativity, what it means, and how creativity is beneficial for three areas, the global, societal, and individual, in connection to the future of the world.

Participants also addressed what creativity means in children: how it manifests in children; characteristics of creative children; different levels, degrees and types of creativity in children; adults' recognition and roles including parents and teachers and how they influence children's creative development; the benefits of expressing and using creativity in children; examples of creative activities; factors that can influence children's creative expressions; outcomes of stifling children's creativity; the necessity of revising creativity in the classroom; and ethics needed to be considered in nurturing and expressing creativity. These wide-ranging topics were brought up by many participants.

In a broad overview, the responses reported by participants correspond with what is explained in the literature concerning the topic of creativity in young children and how it manifests (e.g., Torrance, 1962; Parnes, 1967; Shallcross, 1981, 1985; Presbury, Benson, Fitch, & Torrance, 1990; Hilliard, 1992; Gardner, 1993; Csikszentmihalyi, 1996; Keegan, 1996; West, 1997; Goswami, 1999; Palladino, 1999; Piirto, 2000; Jeffrey & Craft, 2001; Joubert, 2001; Lynch & Harris, 2001; Starko, 2001; Silverman, 2002; Goertzel, Goertzel, Goertzel, & Hansen, 2004; Hein, 2004; Lovecky, 2004; Ivcevic & Mayer, 2007).

Most participants described only few numbers of creative activities that they enjoyed during their childhood, and they believe that these activities are connected to and reflect creativity in children. Most responses emphasized the arts again, including music, dance, etc.

And again, the most emphasized topics in participants' reports were: curiosity, questioning attitudes; imagination; day dreaming; creating with materials; having different interests than peers; problem solving skills; free play, especially dramatic play; and free expression.

Only a few participants could clearly define creativity as to bring into being something new and noted that children already have creative potentials that need to be expressed and not to be stifled.

Most participants were not able to define in more specific words what creativity in children means, except when they spoke about their own personal creative activities, their own children, or their own students. In most cases, their responses focused on certain areas rather than having a more comprehensive concept about creativity in children.

In response to what are the characteristics of creative children; most responses again emphasized the creative activities that creative children do, rather than identifying clear and specific personality characteristics.

## **Research question (2)**

### **What constitutes creative behaviors in young children?**

Some participants were able to clearly define creative behavior, and many participants were able to give exemplary behaviors to identify creative behavior rather than giving specific definitions. Some examples of creative behaviors fit under different personality aspects, including cognitive, emotional, social, and physical aspects, etc. In general, the responses by participants included many creative behaviors, and their responses are consistent with literature on this topic (e.g., Ferris, 1957; Torrance, 1965; Parnes, 1967; Hilliard, 1992; Gardner, 1993;

West, 1997; Palladino, 1999; Silverman, 2002; Goertzel, Goertzel, Goertzel, & Hansen 2004; Hein, 2004; Lovecky, 2004).

In most cases, participants were able to define certain exemplary creative behaviors or certain dimensions of creative behavior, rather than a conceptual view of what constitutes a creative behavior, a trend that is evidenced in the literature as well (e.g., Ferris, 1957; Torrance, 1964; Torrance, 1965; Presbury, Benson, Fitch, & Torrance, 1990; Fryer & Collings, 1991; Armstrong, 1998; Diakidoy & Kanari, 1999; Cropley, 2001; Lynch & Harris, 2001)

### **Research Question 3:**

**Are teachers able to recognize indicator behaviors of creativity in children?**

**And what are the creative behaviors that were recognized most, least, or not recognized among experts and teachers?**

In general, participants were able to recognize creativity in children. But more specifically, in relation to recognizing creative behaviors in young children, their recognition was not clear enough. Most of the recognition of creativity, especially creative behaviors, has been indirectly observed in participants' report or stories, but these recognitions or reports of creative behavior expressions appeared in a limited view in most cases, and were not reported directly in clear statements. There was a lot of inconsistency, lack of assurance, and confusion in participants' reports, as has been observed in both the quantitative and qualitative data in many cases. In another general observation, there is a lack in participants' depth of knowledge and experiences with creativity, especially in terms of recognizing diverse creative behavior manifestations.

These observations of participants' responses agree with other researchers' findings (e.g., Ferris, 1957; Torrance, 1964; Torrance, 1965; Presbury, Benson, Fitch, & Torrance 1990; Fryer & Collings, 1991; Armstrong, 1998; Diakidoy & Kanari, 1999; Palladino, 1999; Cropley, 2001; Lynch & Harris, 2001; Naglieri & Kaufman, 2001; Sankar-Deleeuw, 2002).

For analysis of the quantitative data, the following tables (Table 7 and Table 8) summarize creative behaviors that were recognized most and least by participants.

Table 8 summarizes creative behaviors that received 100% recognition by experts or teachers. Only twelve creative behaviors out of two hundred and sixty five creative behaviors have been recognized the most by at least by one group of teachers or experts, out of a total 75 participants in this study. Most of these behaviors that received 100% by one group of participants received a very high level of recognition by the other group of participants, as is illustrated in the following tables.

Most of these twelve behaviors belong to the cognitive areas of creativity rather than other areas, which shows that in general the recognition of creative behaviors is still limited in many cases to the cognitive aspects. These results coincide with previous results reported above about the areas recognized highly by most participants, including imagination; using things differently; thinking in different ways; problem solving; questioning attitudes; curiosity; and creating new things.

**Table 8. Creative Behaviors Recognized the Most By Teachers and Experts**

<i><b>Creative Behavior</b></i>	<i><b>Percentages of recognition by experts</b></i>	<i><b>Percentages of recognition by teachers</b></i>
1. Devising new games	97.1	100.0
2. Uncommon uses of everyday items	97.1	100.0
3. Interest in problem solving	97.1	100.0
4. Loving of adventures	100.0	95.1
5. Devising new rules for common games	97.1	100.0
6. “why”, “how”, or “what if” questions	100.0	92.7
7. Engagement in real-life experimentation	100.0	100.0
8. Unusual curiosity	93.9	100.0
9. Changing a known story	97.1	100.0
10. Experimentation with his/her imagination	100.0	97.6
11. Rich imagination	100.0	97.6
12. Producing different designs or products	97.1	100.0

Table 9 illustrates the creative behaviors that received the lowest recognition level by most participants. Most of these behaviors are considered to be classified under the emotional and social aspects of creativity.

This researcher believes that this lack of attention to the non-intellectual characteristics of creativity is one of the most momentous and widespread problems that negatively influences



teachers', parents', and other adults' abilities to recognize creativity in young children and meet their creative needs, especially those that fall under emotional and social needs. Most of the focus in creativity research and its applications in education or other contexts has been on the intellectual characteristics connected to creativity, such as imagination, diverse thinking, free expression, problem solving, etc.

The social and emotional aspects of creativity development and creativity processes are critical factors that significantly influence creative expressions from birth till late adulthood, rather than only the academic or/and intellectual aspects of creativity.

These results support the research evidence that has also been reported by some researchers (e.g., Piirto, 2000; Lynch & Harris, 2001; Starko, 2001; Sankar-Deleeuw, 2002; Lovecky, 2004; Webb, Amend, Webb, Goerss, Beljan, & Olenchak 2005) who have observed that little attention has been paid in the literature to the intellectual factors of creativity in comparison to the non-intellectual factors, as well as in teaching practices in relation to teachers' recognition of these non-intellectual factors. These researchers emphasize the powerful role of these non-intellectual factors on the creativity process and products.

**Table 9. Creative Behaviors Recognized the Least By Teachers and Experts**

<i>Creative Behavior</i>	<i>Percentages of recognition by experts</i>	<i>Percentages of recognition by teachers</i>
1. Excessive guilt feeling	9.1	17.1
2. Falling asleep during activity	8.8	19.5
3. Fault-finding	8.8	31.7

4. Nail-biting	14.7	19.5
5. Aggression	9.1	25.0
6. Nervous habits	17.6	22.0
7. Hard time adjusting to change	27.3	19.5
8. Jealousy	12.1	14.6
9. Difficulty in making or keep friends	25.0	12.5
10. Delay in any aspect of development	26.5	17.5
11. Regressive behavior	14.7	22.0
12. Little or no interest in others' opinions	11.8	39.0
13. Low achievement level	21.9	19.5
14. Being lost in certain contexts	26.5	17.5
15. Thumb-sucking	8.8	12.2
16. Concern of being perceived as crazy	26.5	19.5
17. Showing illness	23.5	17.1
18. Shyness	18.8	25.0
19. Primitive behavior	14.7	19.5
20. Impoliteness		19.5

#### **Research Question 4:**

#### **(4) What are some of the misconceptions that teachers believe regarding how creativity is manifested in young children?**

Generally, participants noted few misconceptions that others believe about creativity.

This researcher observes that most of the misconceptions reported in literature are also evidenced in these responses. These noted misconceptions include but are not limited to the following ideas: creativity is limited to art; creativity cannot be taught; creativity is not applicable to all domains; not everyone is a creative person; creativity is connected to one side of the brain only;

etc. These results support what some researchers believe in relation to how widespread are the misconceptions about creativity among teachers, parents, and other professionals (Torrance & Torrance, 1973; Shallcross, 1981, 1985; Smith & Carlsson, 1990; de Bono, 1992; Craft, 2000; Michalko, 2001; Naglieri & Kaufman, 2001; Starko, 2001; Millar, 2002; Kaufman & Baer, 2005; Pink, 2005).

In conclusion, there are several areas of misconceptions that teachers still believe about creativity, which strongly influences their practices in the classroom regarding the creative behavior expressions that children manifest.

### **Research Question 5:**

#### **(5) What are the factors and conditions that influence children's creativity?**

Participants' responses included heredity and environmental factors as the main sources that influence creativity in children. Some participants reported only heredity or only environment factors to be the critical elements in the development of creativity. Some participants reported the interaction between both factors. Most participants did not directly report the few factors that they believed influenced their creative expression from birth to adulthood. Many of the reported factors were revealed indirectly in participants' responses. Many factors were recognized by participants generally, but are still considered limited per each participant. The details of these factors and how they influenced creativity did not occur in great depth or in a wide variety, per participant. The perceptions by participants in this research study contribute to their misconceptions about creativity, which may influence their classroom practices.

In general, many of the factors covered in these responses support the studies in creativity research (e.g., Torrance, 1962; Williams, 1983; Gardner, 1993; Armstrong, 1998; Craft, 2000; Khatena, 2000; Millar, 2002; Goertzel, Goertzel, Goertzel & Hansen, 2004; Lovecky, 2004; Ugur, 2004).

Examples of factors frequently reported by participants are: heredity; early experiences in life; adults' roles, especially parents and teachers, including their backgrounds, beliefs, attitudes, practices, perceptions of self as creative, expectations and influence; physical and psychological support in the environment; resources in the environment; real life experimentations; free exploration and play; level of authority and restrictions in the environment; free expression; level of security; conditions in the environment; level of enjoyment and fun associated with learning; need to be creative; level of flexibility in the environment; problems faced by creative children; evaluation and judgment of creative children's behaviors; recommendations for change.

### **Research Question 6:**

#### **(6) What are the relationships between teachers' backgrounds, perceptions, and their level of recognizing creative behaviors in young children?**

The demographic characteristics of participant teachers found to be the background factors that most frequently correlated with teachers' high recognition of creative behaviors as equal and/or higher than 75%, are teachers' perceptions of themselves as a creative parent and teacher, and their years of formal teaching experience of young children. On the other hand, the position held by teachers; teachers' perception of their own child as creative; and teachers' education levels were the background factors that least influenced the high level of teachers' recognition equal to and/or higher than 75%.

These results reveal the significant influence of teachers' perceptions during adulthood as creative teachers and/or parents, as well as the influence of their years of formal schooling experiences in terms of highly recognizing creative behaviors. In comparison to the level of education, the positions held by teachers, and the perception of their own children as creative, these factors were not as influential upon their recognition of creative behaviors.

Similar teacher demographics apply for the behaviors that were recognized by 50%-74% of participants. The years of formal teaching experience in addition to the perception of the self as a creative parent were again the two most influential background factors to influence this level of recognition of creative behaviors. The factors with the lowest influence on the level of recognition that ranges from 50%-74% were if teachers had a child of their own, and teachers' perceptions of having been a creative youngster.

Similarly, the years of formal teaching experience of young children, the position held by teachers, and teachers' perceptions of the self as a creative person were found to be the most influential background factors on the recognition of behaviors that received 50% or less recognition from teachers. Once again, the self perceptions of having been a creative youngster, the education level for teachers, and teacher's perceptions of their child as creative were considered the factors with the lowest influence on this category of level of recognition.

In sum, the years of formal teaching experience and teachers' perceptions of the self in general as creative were the most powerful and the most shared two factors across all levels of recognition of creative behavior by teachers. The possible explanation, according to this researcher's observation, is that when teachers have formal teaching experience for many years, this gives them more time to gain rich experiences with creativity manifestations and great chances to follow up on children's development and progress in the future. For example, a

teacher may experience problematic behaviors by certain children, and they may not recognize at first that this behavior was just a negative reflection of creative energy. However, when some years later this child invents something or becomes distinguished for their creative abilities or giftedness, teachers will refer back to these behaviors as associations with creativity. Concerning perceptions of the self as creative, in this case teachers will be aware of their own creativity development and representations, which will greatly help them to identify with children's creative needs and be familiar with their creative behaviors manifestations. In addition, teachers will be able to support and facilitate children's creative processes and expressions.

Perceiving the self to have been a creative youngster or perceiving their own children to be creative are surprisingly the two shared common factors to have the lowest influence on the recognition of creative behaviors across the three levels. In the opinion of this researcher, a possible explanation for these results, as it appears from participants' qualitative responses, is that when they recognized having been creative in their childhood or recognized their own children as creative, this recognition seems to occur only for limited creative behavior expressions, rather than forming a well rounded and comprehensive view about creativity in children. Accordingly, teachers may recognize only the behaviors that they know they manifested as youngsters or were manifested by their own children. However, at the same time, they were not able to recognize the majority of other behaviors outside their personal experience level, even though they were characterized by these two demographics. So they still have a limited view of how creativity is manifested in young children, especially if teachers were not exposed to rich and wide experiences with creativity in broader contexts than their homes.

These results also support other researchers' findings (e.g., Ferris, 1957; Torrance, 1962, 1964; Shallcross, 1981, 1985; Presbury, Benson, Fitch, & Torrance, 1990; Armstrong, 1998; Craft, 2000; Khatena, 2000; Starko, 2001).

So according to these findings, creative teaching practices in teacher's field experiences should be highly valued in teachers' pre-service and in-service education and training programs. In addition, we should consider courses and training in any teacher education or parent education programs for building positive attitudes about the creative self and developing a creative self image as teachers and as parents. The level of education seems not a strong influential factor in teachers' recognition of creative behavior, according to this research study's results. This researcher believes that the type of education will probably have more influence than the level of education. Education for creativity should be a new avenue of coursework and practice to be considered in all educational levels and practices across all ages and contexts.

### **Research Question 7:**

#### **(7) What are the best ways to help children fully express their creative potentials?**

Participants' responses for this research question focused on the following common topics: revising teaching practices and curriculum; teaching attitudes and beliefs about creativity; emotional support and meeting children's needs; behavioral management techniques; availability of resources and materials; freedom practices; practices that stifle creativity; type of activities; how activities are presented and how materials are used; teachers' and parents' tolerance levels; limitations and restrictions; understanding children's development; rewarding creativity; learning

expectations; the significant need for school reform; using the giftedness in each child to teach him/her; and creativity in comparison to achievement.

Topics reported by participants cover some areas that have been evidenced in the literature (e.g., Gardner, 1993; West, 1997; Freed & Parsons, 1998; Palladino, 1999; Silverman, 2002; Goertzel, Goertzel, Goertzel, & Hansen, 2004; Golon, 2004; Millar, 2002), but there is still a considerable lack in the amount and depth of knowledge about the most effective strategies for nurturing children's creativity, as considered by this researcher.

The following section discusses the general and common observations from participants' responses. This discussion includes some factors that this researcher believes to have significantly influenced this study's results.

## **MEMOS ABOUT TEACHERS' AND EXPERTS' RESPONSES:**

### **1. The fear that certain behaviors could at the same time be the basis for serious problems:**

Many participants expressed directly or indirectly their clear concern that some of these behaviors included in the CBYCC could be the basis for or shared with some medical diagnoses or problems. Participants expressed their hesitance in responding to some items in the checklist, although in the instruction page of the CBYCC, this researcher made the following statement: "Please, read carefully and place a check (√) or (x) beside each number associated with each item. Checking (√) means "Yes" which indicates that you think the checked item represents a behavior that reflects or may relate to creativity in young children. Checking (x) means "No," which indicates that you do not think that the item represents a creative behavior that young



children might manifest in the classroom, or that it is not a behavior that may relate to creativity from your perspective”.

### Examples:

*Teacher 7: [...] The questions themselves seem to box us in, i.e. if we check one, it appears that we believe that this means that this particular item means that we think that the child is creative when in reality it could mean that there is something else going on with that child [...].*

*Expert 2: Many of these items (e.g. # 19-fails to follow directions) could signal creativity as well as a host of other attributes or issues. A creative child might shy away from specific instructions as to how to complete a task. But so might an ADD child or a child with insufficient ability etc. what I am trying to say is that many of these items could have multiple connections/root causes. See also especially items #14 (Rules breaking), 29 (Being very ambitious), 33 (Illogical thoughts), 59 (Lack of interest of attending school), 60 (Ignorance of safety rules), 64 (Expression of own feeling), 76 (Authentic preparation and planning), 77 (Nervous habits), 91 (Moving from one activity to another), 92 (Refusing to do assignments), 100 (Difficulty in making or keep friends), 103 (Interrupting the current activity), 106 (Stubborn behavior), 104 (Sadness), 118 (Delay in any aspect of development), etc. As I filled out the checklist, I gave a check to any item that might (at least in some cases) signal creativity. Of course many of these items might be used to describe highly intelligent or even OCD (obsessive compulsive children) or even emotionally disturbed children.*

*Expert 13: [...] A vast number of items found me saying to myself “it all depends”. I need more information on circumstances and factors so that I can exclude psychotic behavior (like in #1-Uncommon questions or ideas), etc. [...] (note: expert 13 comments: “excludes psychotic and silly) checked yes for the item.*

*Expert 20: [...] Too many factors and emotions are being questioned (in this checklist). Some children with emotional and cognitive disorders are creative, others may not be.*

*Expert 23: A lot of your points (items on the checklist) could relate to creativity but could also be related to other causes such as problematic family situations [...].*

*Expert 25: It seems that many of the characteristic described in the survey could relate to kids who are ADHD. These kids many times are very creative but also can be quite disruptive. In the classroom a balance must be reached to maximize participation for all the kids. If a kid is derailing the activity for the group, his behavior cannot be tolerated. I think creative kids who have behavior issues can learn to interact with their peers and still express their creativity. We*

do not want to promote anti-social behavior under the banner of “creativity”, and neither do we want to squelch individuality. The key, in my opinion is to strike a balance between encouragement of creative ideas and classroom management.

## **2. Pre-judgments and participants’ beliefs about creativity along with their perceptions of self influenced their responses and how they understood the instructions to respond to the checklist**

Participants’ attitudes about creativity and their image of themselves as creative or not significantly influenced their responses to the checklist. Some of the participants had their mind set about a certain perspective of creativity or of themselves, which was the reason in many cases for building their own judgments or making decisions before even participating in the study. Some of these attitudes or judgments were positive and some were negative. Sometimes participants also proposed or claimed facts, statements, or conclusions, which did not exist or are not reported by this research. Many participants’ misconceptions of creativity affected their responses, in many cases. Their perceptions interfered with their reading of the checklist instructions. For example, some could not apprehend the following wording in the instruction page: “reflects or may relate”.

*Teacher 7: [...] As a classroom teacher of very young child, I must take each child as he or she comes to me and educates, love, fulfills the needs for him to the best of my ability. What you asked me to do was to “grade” traits of the child, - whether psychological, social, behavioral-according to criteria, (creativity) [...].*

*Teacher 7: [...] It appears to me that you are wrestling with trying to identify in a concrete form a very abstract trait [...].*

*Teacher 7: [...] If he or she could accept that you believe that these characteristics mean that the child is creative, he or she might ignore some pretty serious developmental problems [...].*

*teacher 7: [...] Each of the things you mention in the checklist that I guess that you see as criteria for the “non-creative child” sound as though they are a “done-deal”. If the child*

demonstrate these behaviors, he is, therefore, a “non creative” child. I disagree with your baseline! [...].

Teacher 7: [...] It sounded to me as though our philosophies differ so much that I disqualified my self from your study! [...].

Teacher 10: I felt like I was supposed to indicate that a majority of these behaviors were related to creativity or else be accused as a teacher who “does not recognize creative behaviors” in children [...].

Teacher 25: In my opinion, all children are creative and most of these behaviors have been observed in children who are very creative; the task, as I see it, is for the teacher to recognize that all children are creative and it is up to the teacher to help each child find his/her means of expression.

Teacher 25: There was a statement in there, something about math not being an indicator of artistic creativity, and I disagreed with that, because I think children who are talented in math can be very creative. (note: there is no statement about math in connection to art in this checklist).

Teacher 25: (Studies the question for a moment) So this is saying, if you have a lot of errors in math skills, then you are not creative? (She laughs) Or that if you have a lot of errors in math skills, then you are creative? I don't know that it makes any difference [...].

Teacher 25: I don't know why I crossed that out. (Pauses to think). Oh yes, because I disagreed with it. “Makes errors in computation or sequential tasks,” I think I was confused by that one. Some of these sounded like they were making correlations between children that had abilities in math, and saying that if you had abilities in math, then you weren't a creative person. That's how I was reading that, I don't know why I read it like that. Because I think children with good math skills are potentially very creative. (note: there is no item in the checklist with this title)

Teacher 32: Many of the xs are because the statement –for me-indicates an older child's cognitive or creative skills. (note: although there is no age group or limit in the instruction for the checklist).

Expert 8: Nearly impossible to teach due to (apparently inborn) need to do things his/her own way.

Expert 13: [...] In my mind, some items indicate creativity (finds a new function), some are precursors to it (must be present if one is to be creative...for example, “inquisitiveness”), and some might be outcomes of being a creative person [...].

Expert 13: [...] A vast number of items found me saying to my self “it all depends”. I need more information on circumstances and factors so that I can exclude psychotic behavior (like in #1- Uncommon questions or ideas), etc. I wonder too, if my own area of expertise/study (kids with emotional and behavioral disorders) influenced my reading and understanding of the items [...].

*Expert 13: I sometimes wished that there was a “sometimes” choice, but I realize that research often involves the forced choice, either-or format [...].*

*Expert 13: [...] I found myself thinking that non-creative kids might sometimes display traits that I considered to be creative.*

*Expert 27: [...] But sorry I have knew thousands of children as teachers and the teachers often complain of just such behaviors as you have listed-they may be very creative children-but may not. That would be specific to them but all of your criteria could be someone’s sign or view into their creativity.*

### **3. Recognizing cognitive aspects of creativity occurs more than recognizing the affective aspects of creativity and the psychomotor skill aspects of creativity, which is a common misconception.**

Many participants tended to recognize the academic or cognitive skills of creativity, rather than the social and emotional skills, as illustrated previously in the quantitative data in a previous section of this chapter (see Tables 8 and 9). Many of the cognitive aspects of creativity received the highest level of recognition by teachers and experts, whereas on the other hand, many of the emotional and social aspects received the lowest percentages of recognition.

#### **Examples from the qualitative data:**

*Teacher 7: Not a criteria for creativity; socialization criteria (note: response for sympathetic behavior item).*

*Teacher 7: can’t physical creativity be included in “creativity” (note: response for more interests in physical activities item).*

*Teacher 32: Many of the xs are because the statement –for me--indicates an older child’s cognitive or creative skills.*

#### 4. Conflicts or divergence in quantitative and qualitative responses

Results in this study revealed that there are frequent conflicts in participants' responses between quantitative and qualitative responses. Inconsistency and confusion about basic concepts regarding creativity are evident in many areas.

*Teacher 7: Not related to criteria* (note: participant checked this item as yes in the checklist) (self-reinforcement behaviors) (checked yes)

*Teacher 7: Not a criteria for creativity* (note: a response for socialization criteria (sympathetic behavior) participant checked this item as yes).

*Teacher 7: [...] Has experienced frustration at home when presenting alternatives to the "normal, accepted" ways of relating to materials or other people, may act stiff, and seek continual praise [...].*

*Teacher 7: Could be creative suffering from perfectionism, needs adult support*

(note: this participant checked "no" for seeking recognition in the checklist)

*Teacher 7: Can't physical creativity be included in "creativity"* (note: a response for more interests in physical activities; the participant checked this item as yes).

*Teacher 7: Not related to criteria* (note: this participant checked the item of "self-reinforcement behaviors" yes in the checklist).

*Teacher 8: Only if misbehavior is connected to frustration would creativity be suggested.* (note: This participant crossed this item of creative behavior out in the checklist and checked yes for the item of unexpected frustration or anger).

*Teacher 8: Seeking prizes, awards, or recognition in itself does not exhibit creativity but how the child goes about seeking the prizes, etc. can show it.* (note: this participant crossed this item out in the checklist)

*Teacher 8: This may depend on what the child would rather be doing instead (i. e: playing video games vs. learning on own)* (note: participant crossed out the item of lack of interest in school in the checklist)

*Teacher 12: [...] I'm not sure why I wrote that one down.*

*Teacher 12: [...] Why did I cross that out?*

*Teacher 25: I don't know why I read it like that [...].*

*Teacher 25: I don't know how I interpreted that (Laughs) [...]*

*Teacher 25: I don't know why I crossed that out. (Pauses to think). Oh yes, because I disagreed with it. "Makes errors in computation or sequential tasks," I think I was confused by that one. Some of these sounded like they were making correlations between children that had abilities in math, and saying that if you had abilities in math, then you weren't a creative person. That's how I was reading that, I don't know why I read it like that. Because I think children with good math skills are potentially very creative.* (note: there is no item in the checklist with this title)

*Teacher 28: Yes (I was a creative youngster), when I felt comfortable I was creative. I was a little shy and did not like to take the lead. But I started dancing and realized how much I loved it and my insecurities seemed to go away. My love for dance expanded my horizons and made me more creative and outgoing. I was always dancing, singing or acting.* (note: this participant crossed out the shyness item in the checklist)

## **5. Percentages received for negative creative behaviors in comparison to positive creative behaviors**

The most checks were for positive creative behaviors, and the most crossed out were for negative creative behaviors. If the behavior is not acceptable socially, and/or is considered to be a problematic behavior, many participants crossed out the item, even though it has been indirectly stated sometimes as a characteristic in the creative child or person.

### **Examples:**

#### **From the Quantitative data:**

Excessive guilty feeling; Falling asleep during activity; Fault-finding; Nail-biting; Aggression; Nervous habits; Hard time adjusting to change; Jealousy; Difficulty in making or keeping friends; Delay in any aspect of development; Regressive behavior; Little or no interest in others' opinions; Low achievement level; Being lost in certain contexts; Thumb-sucking; Concerns

about being perceived as crazy; Showing illness; Shyness; Primitive behavior; and Impoliteness are all items that received the lowest percentages of approval by participants. Most of these items are social and emotional. Also, many are not acceptable socially, and many participants believe that they should not be encouraged, which is why they crossed these items out from the checklist.

### **From the Qualitative data:**

*Teacher 1: Sometimes yes and sometimes no. yes, because I played outdoors a lot making forts and hiding places. I relied on my imagination a fair bit. No, when I was lazy and bored. (as a creative youngster)*

*Teacher 8: Only if misbehavior is connected to frustration would creativity be suggested.* (note: This participant cross this item of misbehavior out in the checklist).

*Teacher 8: It's not the first thing I would think of if I caught a student lying or cheating, that this is creative behavior, it would seem more like they are trying to get out of something, but on deeper reflection you could think, "Oh they're lying, they are being creative with the truth". Some people say that lying is just creative truth-telling. But the way they go about doing it might be thinking outside the box, it might be thinking of a different way of doing things, but it's not something that ought to be encouraged [...].*

*Teacher 25: Is it nervous kids we are also interested in. I don't find a lot of correlation between that and creative behavior [...].*

*Teacher 28: Yes (I was a creative youngster), when I felt comfortable I was creative. I was a little shy and did not like to take the lead. But I started dancing and realized how much I loved it and my insecurities seemed to go away. My love for dance expanded my horizons and made me more creative and outgoing. I was always dancing, singing or acting. (note: this participant crossed out shyness and high anxiety level items from the checklist)*

## **6. The possibility of different facets of the same behavior**

Many participants influenced their responses by thinking of many areas the behavior could relate to. Also, in many responses to the checklist items, participants cared about or considered more how a child shows or demonstrates the behavior, rather than how that certain

behavior could be just one component that combined with other behaviors can lead to creative expression as well as a creative personality style.

Additionally, in many cases participants viewed each item in the checklist as if it were a single indicator for creativity, not as possibly part of or a stage of creative development in young children. Too much worry about the questioning the behavior and how it manifested interfered with participants' responses.

### **Examples:**

*Teacher 8: Only if misbehavior is connected to frustration would creativity be suggested.*

(note: this participant crossed this item out in the checklist)

*Teacher 8: Seeking prizes, awards, or recognition in itself does not exhibit creativity but how the child goes about seeking the prizes, etc. can show it.*

(note: this participant crossed this item out in the checklist)

*Teacher 8: This may depend on what the child would rather be doing instead (i. e: playing video games vs. learning on own).*

(note: this participant crossed the item of lack of interest in school out in the checklist)

*Teacher 8: How the child goes about surpassing may show creativity, but not if a child simply duplicates yet improves another's performance [...].* (note: this participant crossed out surpass other peers item)

*Expert 4: Also true of uncreative (item #59 Lack of interest of attending school).*

(An "X" sometimes means there is no relationship with creativity, not it indicates "uncreative".)

*Expert 13: [...]I found myself thinking that non-creative kids might sometimes display traits that I considered to be creative.*

*Expert 18: Many of these behaviors could be checked either way [...].*

## **7. Expectation of all of the behaviors listed in the checklist to be represented all in one child or to occur consistently across times and places**



Many participants expected that each item in the checklist should be manifested by a creative children in all cases, or at all times or stages of creative processes and actions.

### **Examples:**

Expert 15: Some of these behaviors could be because of creativity-some may be because of confusions from processing information in a different way and not having confusions resolved; therefore I have marked some √ and X because it could be a result of either.

Expert 32: [...] I attempted to make a start on the checklist on the checklist on two spate occasions and found that I couldn't honestly check any of the items given as true determinants of creative behaviors in young children-or not. None of the items could be checked in isolation and I felt that a creative child might very well exhibit some of the behaviors or perhaps not show evidence of the behavior at all. [...] .

Expert 32: [...] I can't limit this capacity to a list of items and can not say that a child would or would not be creative if they showed or did not show any of the items on the list. I simply could not break it down in that way.

## **8. Limited view of creativity as a concept**

Each participant in most cases focused on only one or two aspects of basic concepts about creativity, occasionally to a maximum of three.

So the participants covering most of the topics also presented in literature does not mean that each participant is aware of some, or most, of the diverse and wide aspects of creativity and its benefits. But in a general overview, most topics and connections related to creativity have been reported by participants. This observation is applicable to most of the research questions examined in this study.

From a more specific view, many aspects of creativity have not been clearly or directly reported by the participants in this research study, but have been presented in literature regarding creativity in young children as follows: how the right brain and left brain operate in relation to

creative development and expression (e.g., Schore, 2002; Ivcevic and Mayer, 2007); and cultural aspects of children's creativity (e.g., Armstrong, 1997).

Even if some of these topics may be noted by participants, they have not been stated in a satisfactory depth in comparison to the literature. Some participants shared similar views, yet they did not know in more depth what some of these things meant, what they related to in practice, or where these conclusions or ideas they shared came from. Examples of these general issues are the more detailed practices in homes and schools in relation to children's creativity, and examples of specific topics are the recognition of the creative behaviors and process, how to nurture children's creativity, and assessment techniques in relation to creativity.

## Examples

*Teacher 8: Analytical skills are different than creative skills. (note: this participant crossed the item of skills of manipulating numbers out from the checklist)*

*Teacher 10: [...] Many of them (creative behaviors in the checklist) I would consider good, healthy and worthy of encouragement, but just not fitting under my definition of creativity-more like leadership, good analytical skills, initiative ability to focus, independence, etc.-so I marked those with an "x".*

*Teacher 11: Somewhat I enjoyed working on craft ideas but I would not have considered the activities to be real creative.*

*Teacher 15: No I was not a risk taker and we were not encouraged to go away from the norm.*

*Teacher 18: Probably not (not creative) as much as I would like to think because of a shy personality. (note: participant crossed out shyness)*

*Teacher 24: It's got to come from somewhere! So I don't know if it's something children just, I've never really researched creativity, so I don't know if some children are born creative, for some reason I don't think that's the case, now I don't know if their parents may have had a knack for creativity and that is somehow genetically put into a child, or I really feel that home environment, and outside environment really has a greater impact.*

*Teacher 24: [...] One little girl we have in our classroom, some of the things I watch her do with some of the objects or materials in our classroom, I've never seen other children use before. And*

*I'm thinking of our dramatic-play area, where we have a lot of dress-up things, and doctor kits, we have just started a new theme on our bodies and our bones, and I have seen this little girl taking some of the food objects that we have, and then taking some of the tools that a doctor would use, like a stethoscope, and putting it on an apple. I've never seen a child do that before. So I think that her creativity is definitely there, and she is coming up with some neat ways of using materials that are definitely different from what I have seen before. But again, she does lack some of the other creative skills, such as fine motor; she has poor fine-motor control, so she doesn't do a whole lot of drawing. She loves to paint, but it's more gross motor where she is using her whole arms to do, so she does not have fine-motor skills yet. I think she does lack that creativity in some areas, but she definitely expresses it in other ways.*

*Teacher 25: Art in general, you mean? [...]. (note: in commenting on benefits of Creativity)*

*Teacher 35: Many behaviors are personality-some creative children are very outgoing, some are shy. Some are leaders and problem solvers. Some have no interest in leading and prefer to be left alone to pursue interests [...]. (note: the participant correlated between leadership and problem solving)*

*Expert 8: Nearly impossible to teach due to (apparently inborn) need to do things his/her own way.*

## **Recommendations for Practice and Research:**

1. This study can be applied further to demonstrate the application of a “Creative Education” philosophy as a role model in educational contexts.
2. This study recommends and supports with evidence the need for further applications of previous and present research on creativity in more innovative ways, and recommends producing new research avenues for the future.
3. Further programs can be designed to provide areas of expertise in early childhood education so children will be able to pursue their creativity and reach their breakthroughs earlier in life, as evidenced by this research (such as learning life sciences, engineering, medicine, business, technology, etc). In addition, very effective early career preparation programs and professional development programs can be designed.

4. From the findings of this research study, the following needs to be accomplished: a comprehensive creative philosophy to include the continuum from birth to late adulthood (intergenerational approach and inclusion approach); to include all community settings and organizations; to include all majors and areas of study as well as workplaces (multi-disciplinary approach); to include the national and international level (global perspective); and to include learning from the past, applying it to the present, and planning and educating for the future (time-spanning approach). Further studies can examine the value of creativity in relation to world peace by creating more effective problem solving, creating new resources, etc. at the international level, and benefits at the economic level, social level, etc.
5. Creativity should be integrated in the design of these services and programs as a key stone: teacher education, parent education, clinics, remediation services, educational services, correction education services, and other social organizations.
6. Further examination and revision of current evaluation techniques at all levels of application in society is needed in order to consider aspects of creativity.
7. Further investigation into the ideal application of the new educational reform called for by this research, “Education for Creativity rather than Education for Achievement”, should be conducted.
8. More studies are recommended to examine further the diverse patterns of development of all abilities in young children in order to come up with new norms that are more accurate than those commonly understood nowadays.

9. The CBYCC can be used in several other studies to address different purposes. Also, this measurement can be adopted in educational and social organizations to support teachers' and others' recognition of creativity in children and youth.
10. Other checklists and measurement can be created for other age groups in light of this CBYCC design.
11. New programs to support and adopt interventions across all ages, in different domains, can be created.
12. Organizational solutions in connection to creativity are a significant area that need further investigation.

## **Implications:**

**Proposed innovative creative educational philosophy to be adopted in formal education or informal education.**

**Facts and key observations serving as building blocks for a creative educational philosophy:**

1. Everyone is creative by birth.
2. Nurturing is a significant key to reaching enhanced creative expressions.
3. Most creators processed and produced their inventions during informal schooling (such home schooling, extracurricular activities, or clubs), time-out periods, vacations, or after dropping out or failing in school.
4. Achievement is not the strongest predictor for creativity in most cases, especially in the case of non-verbal visual learners
5. Dislike of formal schooling is evident in the majority of historical and present cases of creative figures.
6. In general, learning is favored when information is presented informally and indirectly through areas of burning interest where high levels of intrinsic motivation exist, and not through formal schooling and direct instruction when learning is presented through separate subjects of study.
7. Motivation, interest, persistence, passion, resiliency, self-study, self- reflection, self-correction, meta-cognition skills, positive self-concept and image, resiliency, etc. are significant elements of the personality dynamics of creative persons.

8. The type and style of play in the early years of life is significantly connected to the type of creative breakthroughs or inventions later in adulthood. Both play and invention belong to the same domains or concepts. Many creative figures envisioned their invention as early as age 6 or younger, as evidenced from different studies such as their drawings, pre-invention toys, or models, etc.
9. There is approximately a ten-year period of time that many creators take to reach their creative products. Early career preparation training will be beneficial in terms of saving more time, effort, and money, and age to enable creators to reach their creative breakthrough earlier in life.
10. Emotional support has been evident to be more influential in many cases than academic support.
11. Learning styles, thinking styles, and orientation to the world are critical factors in creative progress.

These substantive observations can be applied to creativity not only throughout history but also in the present time, as well as across cultures, languages, and ages, with different degrees, styles and forms of creativity.

By using evidence from this study, this researcher has planned an innovative education philosophy that may be accomplished and applied at all levels of education and life. This philosophy is a unique vision in which creativity can be fully implemented.

Some basic principles and guidelines for this designed creative education philosophy, as envisioned by this researcher, are based on the following:

1. Child/adult centered activities

2. Self-directed learning
3. Learning design oriented towards projects
4. Creativity is the target goal instead of achievement. Achievement is part of the process, skills, and outcomes of creativity but should not be considered as an end goal
5. No set final objectives, but set goals and open-ended objectives (objectives will be developed and enhanced as the creative process continues)
6. Creativity should be modeled for all learners by being strongly implemented in all aspects of the education process, beginning with goals, objectives, instruction, materials, evaluation, etc. to include all elements of the learning environment
7. The structure of the learning environment must be relaxing, comforting, and rich with resources and experiences. The environment must allow for free play (including physical play as well as mental play), exploration, discovery, experimentation, and elaboration under a high level of safety and supervision, which are especially important for taking physical and mental risks. A semi-structured approach is recommended, which can give the learner the freedom to explore and create, and at the same time this creation will be facilitated by guidelines provided. A semi-structured environment is the most productive learning culture that leads to resourceful outcomes.
8. Recognition of and rewarding creative behaviors, and support and reinforcement of the creative process, as well as products, are significant keys to be valued in order to reach higher levels of creative expressions.
9. The “Interactive Learning Team” is the most effective educational philosophy for nurturing creativity. This team should consist of: a creative person of the domain, a



creative teacher of the domain, a mentor or counselor, a psychologist, and other specialists as needed. Learning activities should be designed to consider the child, teacher, and mentor, etc. as active members in this interactive learning team to design the learning environment and goals, etc together as a team.

10. The major emphasize should not be on teaching, but rather on creative learning
11. No formal examinations or any pressure of a testing or grading system should be employed. Standardized tests may be used to the guide learning process, rather than used to reach a final judgment about child performance and learning outcomes
12. Assigned tasks need to be connected to individual learning needs and interests.
13. Content should be emphasized rather than form.
14. Challenging curriculums should be selected in the case of the child's certain interests
15. Teachers' and peers responses, through education about creative behavior, should be highly positive. Emotional support is more significant than academic support.
16. The value of "time out" as time for unrestricted activity to pursue the child's own interests and reach personal objectives should be highly considered and practiced in such educational programming as a core element.
17. Tutors, mentors, and counselors should be strongly appreciated because they have the keys of power to open the creativity kingdom that should be adjusted to the student's level and interest.
18. Learning should be facilitated through play rather than formal work. Learning should be fun.
19. Rich resources and materials should be available, in addition to diverse experimental labs that include all domains even for very young children.

20. Teaching different languages, cultures, and religions across the world is a key element in this philosophy. Teaching more than one language in the very early years is critical for creative development.
21. A special curriculum focused on “Understanding the Creative Self” should be implemented in programming from pre-kindergarten to late adulthood.

### **An example for practicing this creative educational philosophy**

Suppose a child aged 4 or 5 has a burning interest in learning about how birds fly and how airplanes fly as well, by comparing and asking questions. The role of the Interactive Learning Team is to choose specialist personnel, who might be a creative person who is also in aviation or engineering, and a creative teacher of physics and other sciences, etc., plus other emotional and academic support team members as well as the child. All of these members together will be the Interactive Learning Team. This team will work together to study the “Flying” concept through different creatures, airplanes, etc. They are all also going to learn together how to design real flying toys, etc. by using different materials. They will learn about all other sciences and domains in connection to flying, for example: social studies, chemistry, mathematics, etc. A learning approach with shared burning interest and expertise in the area, as well as academic and emotional support for creative behaviors, are all the significant components for innovation.

An illustration of how this creative educational philosophy can be adopted through informal education as an example, to be applied later to formal education is: The Proposed Center for Creativity.

### **Proposed Center for Creativity**

This researcher proposes a new vision for how this creative educational philosophy can be adopted by the creation and development of a Center for Creativity.

### **Vision and mission**

This Center's mission will focus on enhancing the community's, society's, and globe's perspectives on and recognition of creative needs and manifestations. This will increase the potential for children, youth, and adults to express creativity and become more creative and productive leaders, which will contribute significantly to build a creative world. This creative world will be able to meet the challenges of the 21<sup>st</sup> century.

This center would be interdisciplinary, inclusive, and intergenerational, and it should be directed at recognizing and appreciating the signs of creativity from birth to late adulthood.

This center will create a unique learning environment and will provide innovative educational and professional pathways to enhance creative behavior recognition and expression and to improve learning outcomes.

This center's outcomes will guide the further creation of novel perceptions as well as practices of creativity in homes, schools, clinics, workplaces, other community settings, and social settings, and will broaden these creations to include the daily life activities of the whole world.

This center can result in the development of new measurement tools, important research, and significant educational and innovative products and services that may result in improvements to educational practice, business, scientific innovations, creative solutions to social problems, and an enhanced quality of life.

### **The major areas of focus of the Center for Creativity**

1. Creativity and revolutionary children and youth
2. Ultra-modern entrepreneurship
3. Culture, language, and diversity
4. Ingenuity in arts
5. Original sciences
6. The gift of disabilities
7. Global civilization
8. Seniors' creativity
9. Cognitive aspects of creativity
10. Affective aspects of creativity
11. Invention and problem solving
12. Creativity counseling and therapy clinic
13. Imaginative media and technology
14. Designing, manufacturing, marketing, and distribution

## 15. Resource library

This center will deliver services to professors, students, and others in the university body for educational and academic purposes as well as for career development, professionalism, and business solutions purposes. In addition, it will also provide services to the community for community education purposes. It will serve children, youth, parents, families, teachers, other professionals in the education system, and other specialists from all other majors and work places in the fields of engineering, medicine, art, business, etc. Furthermore, partnerships with other organizations at the national and international levels can be created.

### **The major activities and services of the Center for Creativity will be targeted to the following:**

- Community members
- Children, including children with special needs and home-schooling children.
- Families, including parents, grandfathers, and grandmothers, etc.
- Senior citizens.
- Schools personnel, including teachers, administrators, principles, school psychologists, paraprofessionals, counselors, reading specialists, ESL specialists, vocational education teachers, etc.
- Other professionals involved in the education system, such as curriculum designers, policy makers, mentors, evaluators, etc.

- Specialists in organizations that are involved with schools and children with special needs, such as: developmental teachers, instructional teachers, clinical psychologists, speech therapists, multiple intelligences and giftedness specialists, behavioral therapists.
- Organizations and specialists involved in therapy practices such as art therapy, play therapy, drama therapy, etc.
- Organizations and specialists involved in correction education, prisons, etc.
- Organizations involved with children who are creative, gifted, have disabilities or developmental delays, or display behavior problems or disorders.
- Other organizations, centers, or institutions that are involved in formal or informal education such as daycares, home cares, summer camp programs, before and after school programs, training programs for music, art, dance, theatre, etc.
- Other universities and schools in the local, national, and international community
- Other students through distance education, world campus, creativity certifications.
- Workplaces in all majors.
- Persons around the globe, through publications, training units, conferences, workshops, T.V programming, etc.
- Marketing, industrial, and business companies who are interested in the field of creativity.

### **Uniqueness of this proposed Center for Creativity:**

- Collaboration, harmony, and a multi-disciplinary approach in the formation of the center.
- A unique vision and mission with a future and global orientation.

- Well-rounded and inclusive services offered to all persons, from all age groups, from diverse background, cultures, languages, abilities, and needs.
- The comprehensive theory and practice of creativity in all majors, at all levels of application--local, national, and global. The center will also create a variety of innovative activities, research, and practices applied to all community settings and organizations. In addition, it will design new measurement tools for creativity; building a new creative educational philosophy, and practice new field applications.
- Goals will be a uniquely balanced and multi-purposed approach to consider business, industry, marketing, and education purposes.
- The center will create an original and novel educational reform that calls for “Education for Creativity rather than Education for Achievement”.
- The center will have an innovative, balanced focus on “Creative Behavior,” which means creativity in the process phase as well as the product phase.
- The center will perform new research, measurements, and practices related to creative behavior recognition, manifestations, and enhancement from birth to late adulthood (an intergenerational approach).
- It will consider the gift of disabilities by creating new research and practices to meet creative needs in persons with special needs.
- It will uniquely apply our research outcomes in correctional education, prisons, vocational education, career preparation, and senior citizen creativity.
- The center will produce new knowledge and practices of teaching.
- We will create a unique approach to revise creativity in educational institutions and workplaces, including formal and informal settings.

- This center will meet many children's and adults' needs in the local area where there is a very big need for such a center, especially given the significance of roles in the community in this area.
- The all-year and all-day round services provided will meet the needs of all persons in the community, including home schooling children, etc.
- This center will have unique facilities, such as a child care facility and a farm day care, that will apply the creative educational philosophy from birth to age 6. Children and youth will enjoy creative and quality scientific labs in this center. The technology lab and multimedia unit for children and youth will adapt new programs for children such as learning film production, etc. The clinic and counseling services will offer all types of creativity counseling and therapies. There will be advocacy services for creativity in children and adults. There will also be designing, manufacturing, marketing, and distribution units, a creative library, an invention unit, a creativity museum, a gift of disabilities unit, a training unit for creative living and effective problem solving, a research and evaluation unit, and a creative education training unit for families, parents, teachers, and all specialists in all majors and fields.
- Quality creativity expertise will be provided in all types of specializations and for all life settings, including daily life situations.
- The center will be distinguished with an inimitable atmosphere that will help people feel relaxed and comfortable to express their creative potential and enjoy the maximum level of quality education that will nurture and enhance their creative processes and expressions.



- The center will offer a radical contribution to the community, society, and the globe by promoting more inventions, creative expressions, significant research findings, reduction of time wasted, cost, and efforts, less violence and crimes, and creating a more peaceful world.
- The center will save the creative potentials of millions of children and adults from losing their creativity when they have been unrecognized or misperceived from the early to later years of life.
- A thorough approach to correcting the misconceptions about creativity will significantly influence the practices of creativity and outcomes in all fields.
- This center will create and contribute unlimited revenues for the world by improving creativity.
- This center will attract and enjoy an unlimited number of partnerships.
- The center will design new curricula for children and students in all majors and at all levels of education, to recognize their creative potentials, to enhance their creative expressions, and to contribute creatively to build a creative world.
- The center will nurture creative leaders to meet our future needs and increase the likelihood for all children to turn into creative adults in the near future.
- The center will practice unique group dynamics by freely expressing the individual and group creativity as professors, students, and staff, with all levels of participation.

### **Confines of many Creativity Centers the present time**

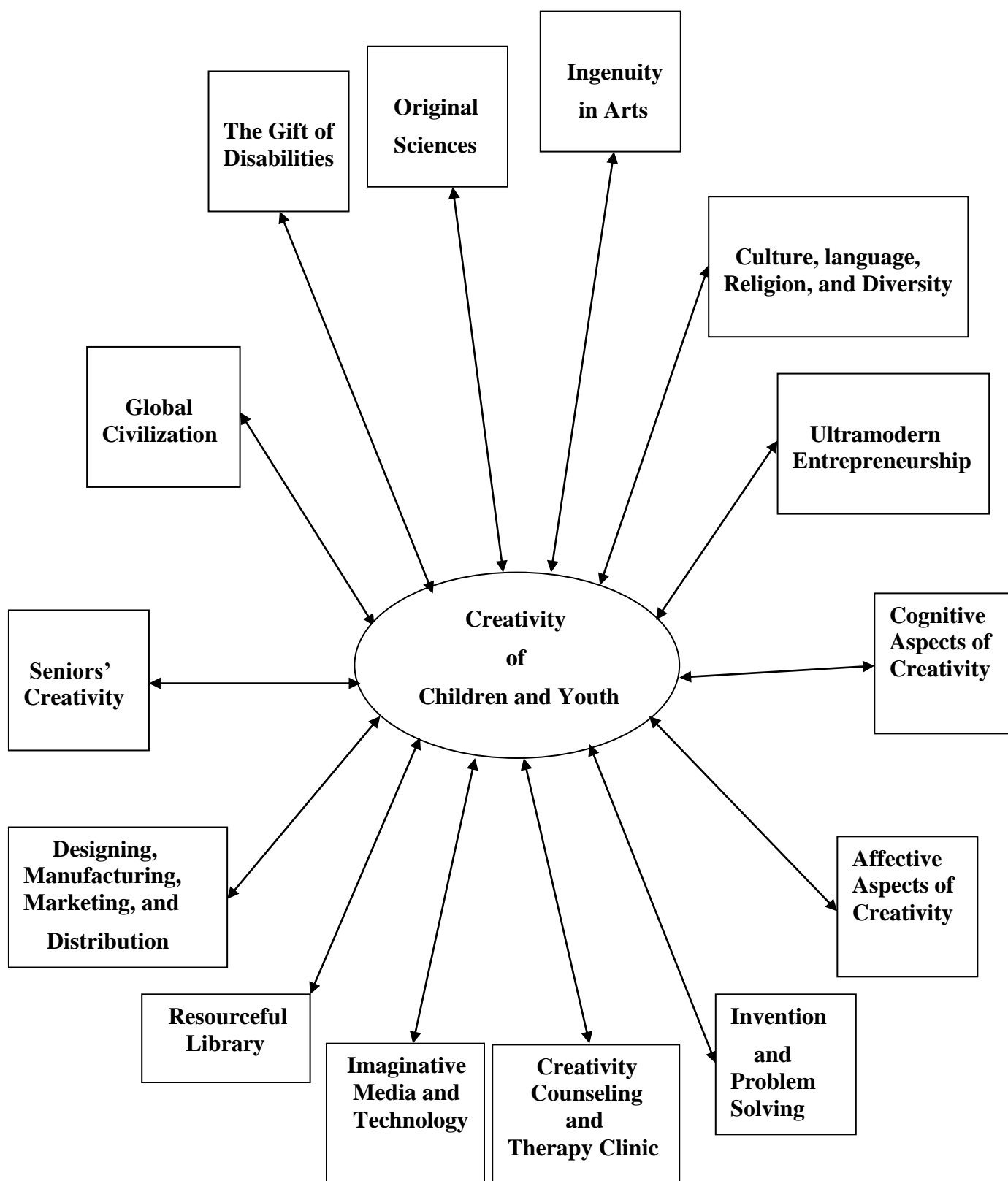
- They focus in most cases just on the application of limited theories. It depends on which theory they adapt, and their theory and practices may not be comprehensive enough. Also, they may choose very limited areas in the creativity field to pursue.
- It is rare to find an inclusive creative education philosophy.
- Some other creativity centers do not consider the orientation for the future or for the world.
- Many view their first goals as business, industrial, or marketing goals, rather than educational goals.
- In many cases, the target population is limited to certain age groups, such as adults, or only children from grades 8-12. There are very limited numbers who consider creativity in children in a very early ages and how it manifested in the early years of life, especially from birth to age 8. The same case is true for late adulthood. There are very limited numbers who pay attention to creativity in retired persons, especially in terms of application or taking advantage of their creativity.
- Most educational organizations focus on common approaches such as using creative books, materials, or tools as methods for nurturing creativity, rather than recognizing creativity or adapting a creative philosophy of education and creativity practices.
- Most of the focus in creativity theory and practices in the field currently is aimed at gifted children who have a high IQ, and who already show their giftedness areas and talents as outcomes and products rather than processes, and who do well on standardized tests. They may also target creative children who already expressed their creative potentials. But it is rare to find a focus in creativity theory and application that is targeted toward all

children and views them as all creative by nature. If such approaches exist, there is still a lack in the creativity literature, research, and application about the philosophical and practical ideas of how to nurture creativity in these children with all types of diversity, and about how to solve the problems they face in families, schools or other community settings. Furthermore, there is no consideration of the common creative needs in children and adults in any educational programs.

- There is a limited focus on creativity in children with special needs, especially those with disabilities or developmental delays. In most cases, educational programs focus on their delayed or disabilities areas, not on their creative areas and needs. For example, research has shown that even mentally retarded children are creative. Until now, there has been no educational program to nurture and enhance creativity in mentally retarded students.
- Most of the focus is to educate to achieve and not to create.
- There is no thorough approach yet for teaching engineering, medicine, space, agriculture, etc. as a course of study subjects for young children or in early career preparation programs.
- Most of the available programs are very short terms of study; in most cases they might be only a few days of study such as summer camps or short training courses, etc.
- Most centers or programs are formed with limited consideration of diversity in terms of not considering all majors of study at the formation level or at the service level of these centers or programs.
- Many centers adopt the name of creativity, but not a thorough approach of adopting or applying creativity in their actual philosophy or practices.

The following figure illustrates diverse areas as envisioned by this researcher to be included in the proposed Center for Creativity:

**Figure 5. Center for Creativity**



## Conclusion

This researcher concludes this research study with the following quote as stated by

**Pearl Buck:**

“The truly creative mind in any field is no more than this:

A human creature born abnormally, inhumanely sensitive.

To him...

a touch is a blow,

a sound is a noise,

a misfortune is a tragedy,

a joy is an ecstasy,

a friend is a lover,

a lover is a god, and

failure is death.

**Add to this cruelly delicate organism the overpowering necessity to create, create, create—so that without the creating of music or poetry or books or buildings or something of meaning, his very breath is cut off from him. He must create, must pour out creation. By some strange, unknown, inward urgency he is not really alive unless he is creating.” (Friedel, 1996, p. 2)**

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# Appendices

**Table 10. Characteristics of Participant Experts (N=34)**

<b>Characteristic</b>	<b>Number</b>	<b>Valid Percent</b>
<b>Parent of a Creative Child</b>		
Yes	2	5.9
No	32	94.1
Total	34	100.0
<b>Affiliation to Classroom Teaching</b>		
Direct Affiliation	9	30.0
Indirect Affiliation	9	30.0
Both direct and indirect affiliation	12	40.0
<b>Affiliation to creativity or creative behavior</b>		
Professional & Academic	2	5.9
Professional & Manifest Creative Behaviors	5	14.7
Academic & Scholar	3	8.8
Scholar & Researcher	1	2.9
Academic, Professional, Scholar, Researcher, & Manifest Creative Behaviors	1	2.9
Professional, Academic & Manifest Creative Behavior	1	2.9
Professional, Academic & Manifest Creative Behavior	1	2.9
Academic, Scholar & Researcher	8	23.5
Professional, Academic, Scholar & Researcher	1	2.9
Professional, Academic, Scholar & Manifest Creative Behavior	1	2.9

<b>Affiliation with University/ College</b>		
University Affiliation	21	61.8
Not University Affiliated	13	38.2
Total	34	100.0
<b>Adult or Child Panel Member</b>		
Adult	34	100.0
<b>Affiliation to younger children</b>		
Formal settings	6	17.6
Informal settings	8	23.5
Both formal and informal settings	20	58.8
<b>Affiliation with Children with Special Needs</b>		
Yes	20	58.8
No	14	41.2
Total	34	100.0
<b>Being a Generalist in Early Childhood Education</b>		
Yes	27	79.4
No	7	20.6
Total	34	100.0

## **Background Information Sheets for Teachers**

1) **Name:**

2) **Position:**

3) **School:**

4) **Postsecondary Education Background:**

5) **Area of Specialization:**

6) **Years of General Teaching Experiences:**

a) **Formal School Settings:**

b) **Informal Settings (such as community organizations, home care, before- and after-school programs, churches, etc.):**

7) **Years of Teaching Young Children:**

a) **Formal Settings:**

b) **Informal Settings:**



8) **Subjects Taught:**

9) **Your Favorite Content Areas:**

10) **Grades Taught:** **(Please check all that apply)**

Pre-school: \_\_\_\_\_  
 Kindergarten: \_\_\_\_\_  
 Elementary: \_\_\_\_\_  
 Junior School: \_\_\_\_\_  
 High School: \_\_\_\_\_  
 Postsecondary: \_\_\_\_\_

11) **Do you have any children in your home?**      **Yes**      **No**

12) **If yes, would you consider any of them a creative child? and why?**

13) **Would you consider yourself as a creative:** **(Please check all that apply)**

Person: \_\_\_\_\_  
 Parent: \_\_\_\_\_  
 Teacher: \_\_\_\_\_

14) **Would you consider yourself as having been a creative youngster?  
and why?**

15) **Contact Information:**

**Table 11. Content Areas For Teachers' Educational Backgrounds**

		Frequency	Valid Percent
	None	1	2.4
	Pre-kindergarten	1	2.4
	Early childhood education	3	7.3
	Elementary education	4	9.8
	Child development / child psychology	6	14.6
	Special education	1	2.4
	Other education certification	3	7.3
	Other non-education certification	4	9.8
	Early childhood education & special education	2	4.9
	Elementary education & special education	1	2.4
	Child development & special education	1	2.4
	Pre kindergarten & other education certification	1	2.4
	Early childhood education & other education certification	2	4.9
	Elementary education & other education certification	1	2.4
	Child development & other education certification	2	4.9
	Special education & other education certification	1	2.4
	Other education & other non education certification	2	4.9
	Pre-kindergarten, early childhood education & education certification	1	2.4
	Early childhood education child development & other education certification	1	2.4
	Pre-kindergarten, kindergarten, early childhood education, elementary and junior high education	1	2.4
	Pre-kindergarten, kindergarten, elementary & other education certification	2	4.9
	Total	41	100.0

**Table 12. Specialization Areas Reported By Teachers**

		Frequency	Valid Percent
	None	1	2.5
	Music	1	2.5
	Art	1	2.5
	Dance	3	7.5
	Science	2	5.0

	Language art or literacy	1	2.5
	Other	26	65.0
	Music, language arts or literacy	1	2.5
	Social studies & other	1	2.5
	Language art or literacy & pre-school readiness	1	2.5
	Religion & other	1	2.5
	Art, physical education, gymnastics, language art or literacy & other	1	2.5
	Total	40	100.0

**Table 13. Subject Areas Reported Taught By Teachers**

	Frequency	Valid Percent
	4	9.8
A wide range of things-colors, numbers, math, science	1	2.4
All areas	5	12.2
All areas of music and church related subjects	1	2.4
All elementary education areas	1	2.4
All subjects-- K-12, pre-school	1	2.4
All areas with children, with adults: Anti-bias curriculum, creative dramatics, environmental education., math	1	2.4
Art, creative dance, singing, dramatic play, kitchen, dress ups, & creative block play	1	2.4
Art, practical life	1	2.4
Ballet, jazz, modern, African, pre-school	1	2.4
Ballet, point, tap (beginning), jazz (beginning)	1	2.4
Bees, bugs, pirates, farming, cows	1	2.4
Child day care	1	2.4
College: infant/toddler practicum-pre-K, kindergarten-overall curriculum, 3 & 4 year old-art, infants & toddlers-overall curriculum	1	2.4
Colors, numbers, shapes, nutrition, hygiene, music etc. general subjects	1	2.4
Dance, folk dance/ethnic dances, library skills, creative work & creative movement	1	2.4
Elementary	1	2.4
Elementary learning support. 9-12 learning support, middle school life skills support	1	2.4
General	1	2.4
Language arts, kindergarten, pre-school	1	2.4
Language arts, math, science, health, social studies	1	2.4

	Language arts, math, science, social studies, arts, gym, music & socialization	1	2.4
	Life skills	1	2.4
	Math, science, reading, English, art, social studies, physical education, gymnastics, religion	1	2.4
	Not applicable	1	2.4
	Pre-K	1	2.4
	Pre-school	2	4.9
	Pre-School	1	2.4
	Pre-school, Sunday school, Bible school	1	2.4
	Reading, science, spelling, social studies, math, health, grammar	1	2.4
	Science (6th grade level), Montessori method, reading, spelling, health, career awareness, math, social studies	1	2.4
	Science, math, English, reading, writing, spelling, social skills, computer	1	2.4
	Suzuki, violin	1	2.4
	Total	41	100.0

**The following figures contain numbers which represent percentages of respondent experts.**

Figure 6. Expert Panel Affiliation to Classroom Teaching.

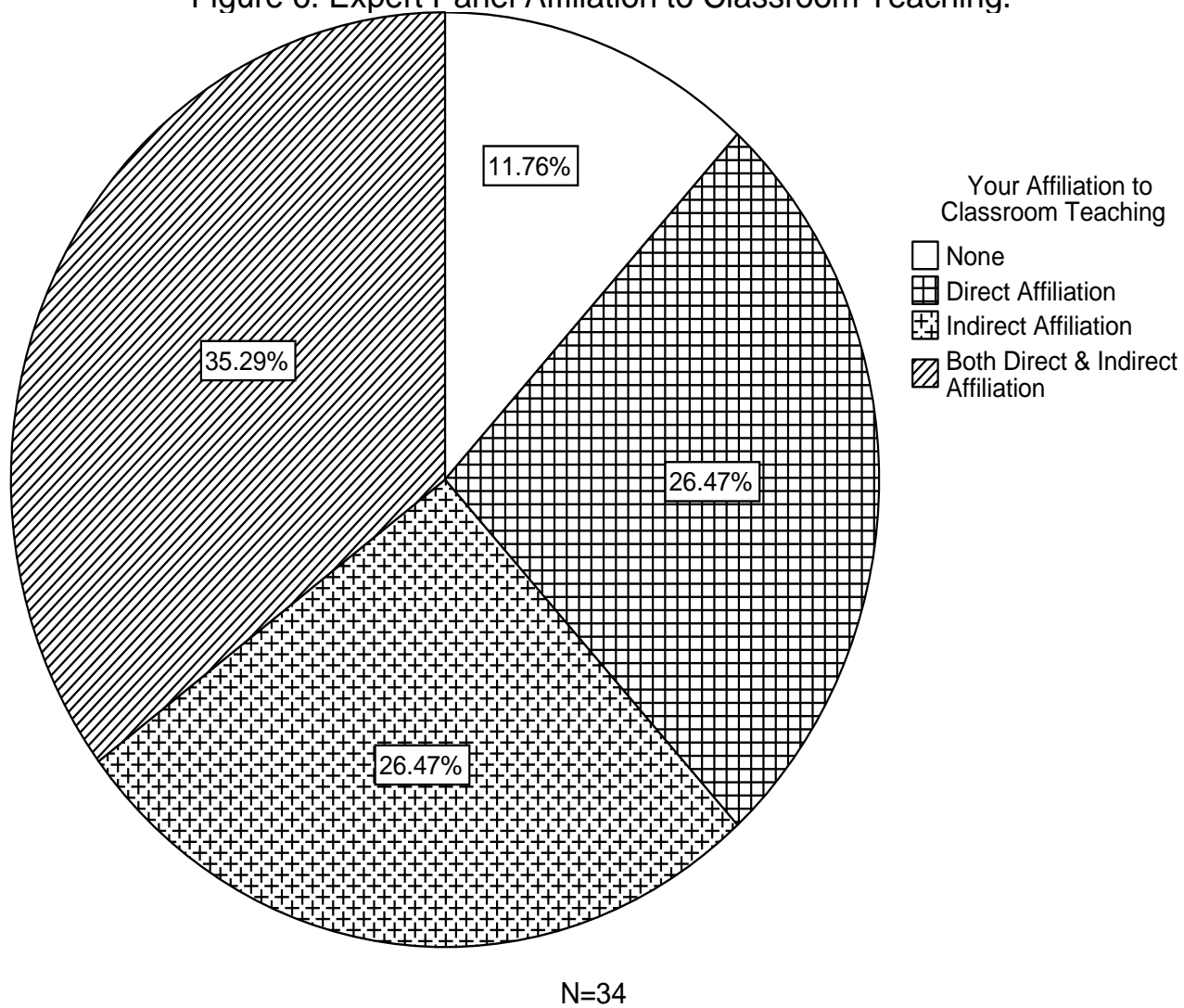


Figure 7. Expert Panel Members are Parent of Creative Child. Teaching.

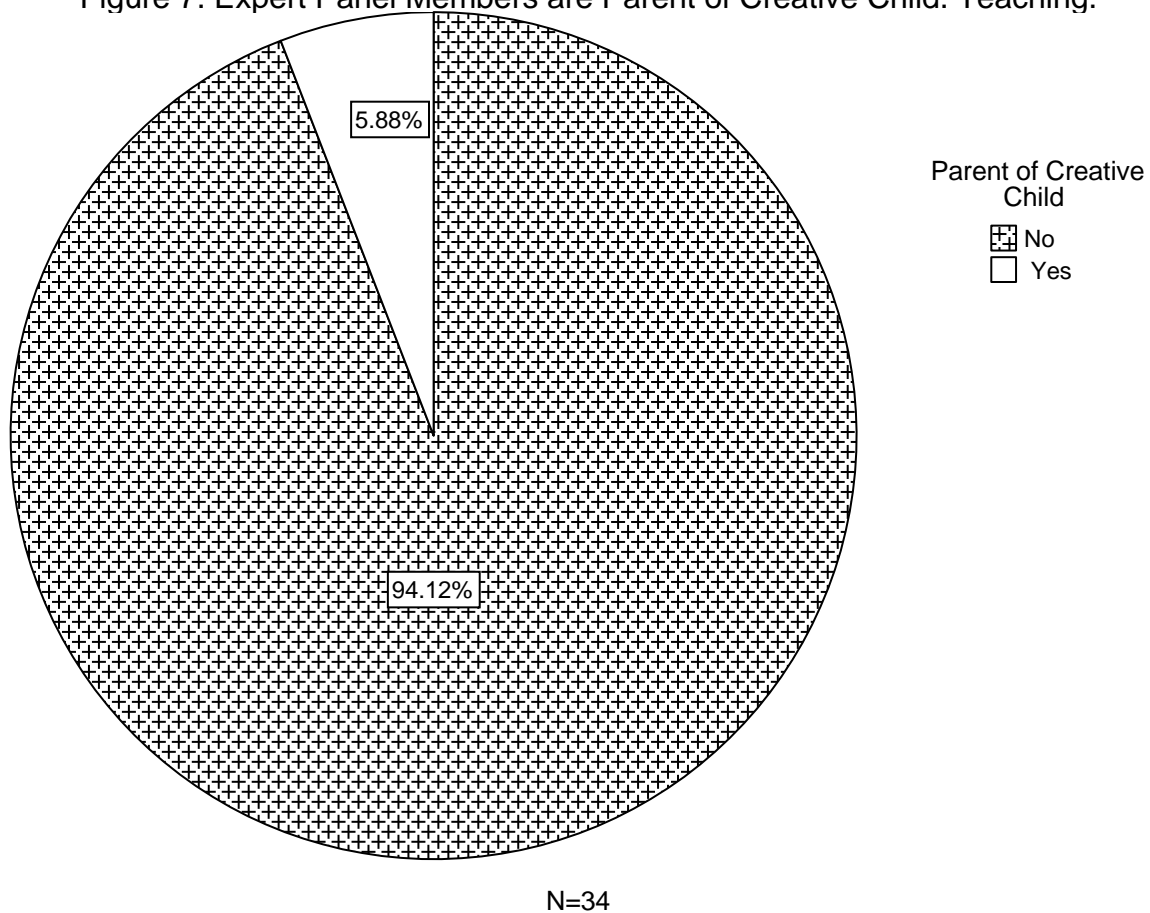


Figure 8. Expert Panel University Affiliation.

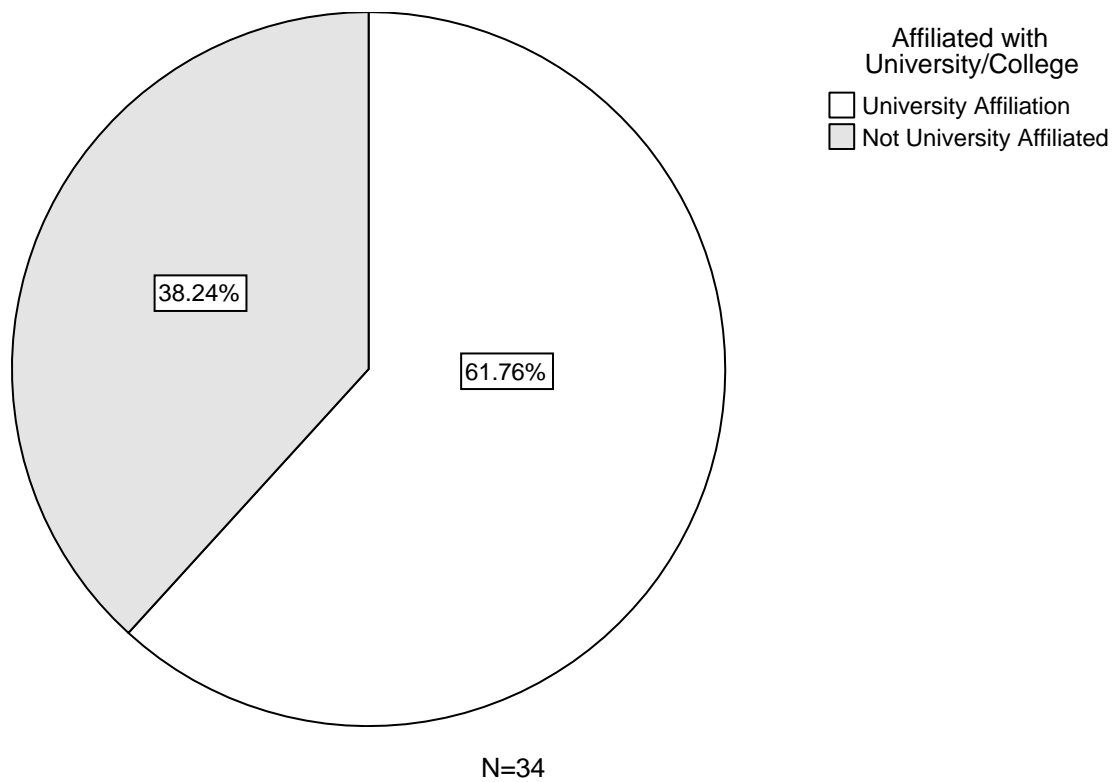




Figure 9. Expert Panel Affiliation with Younger Children.

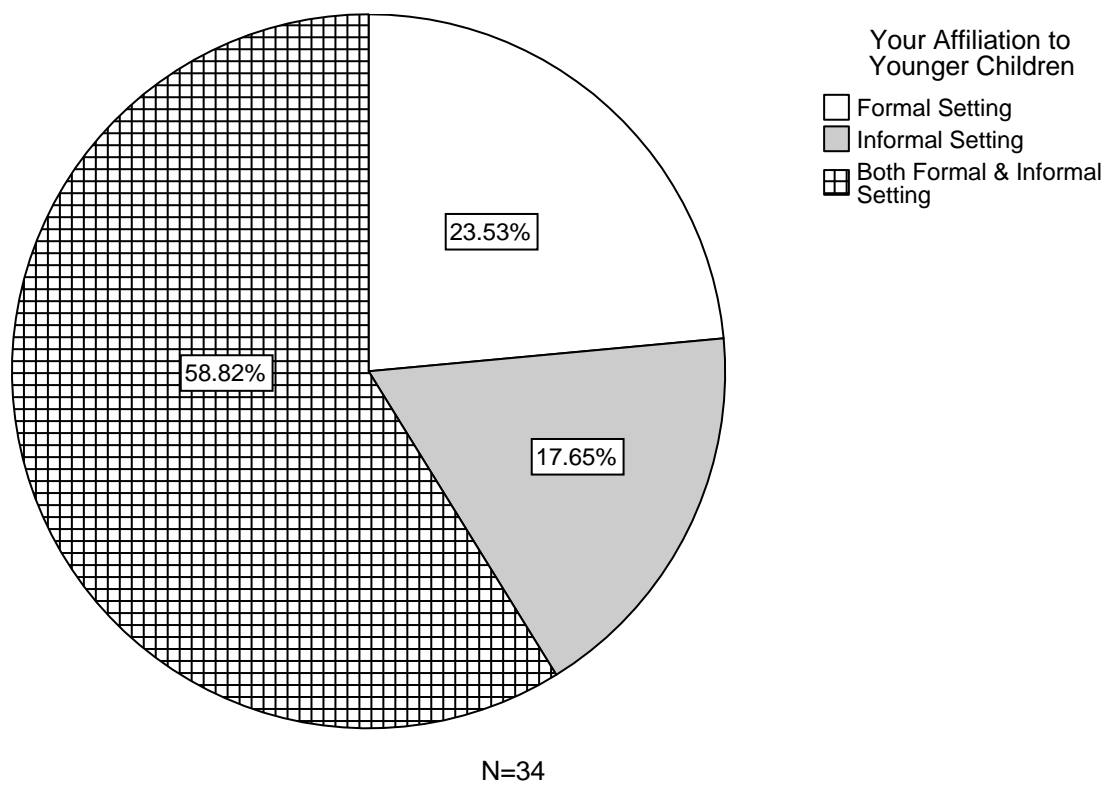


Figure 10. Expert Panel Affiliation to Children with Special Needs..

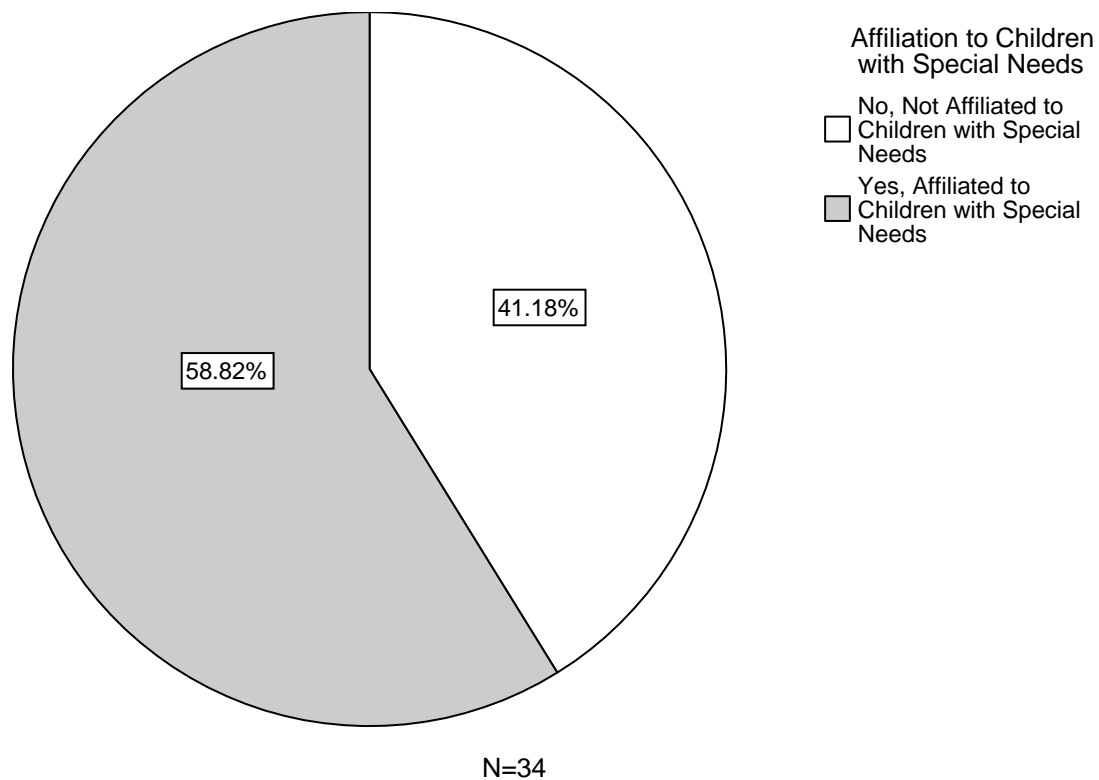


Figure 11. Adult or Child Expert Panel Member.

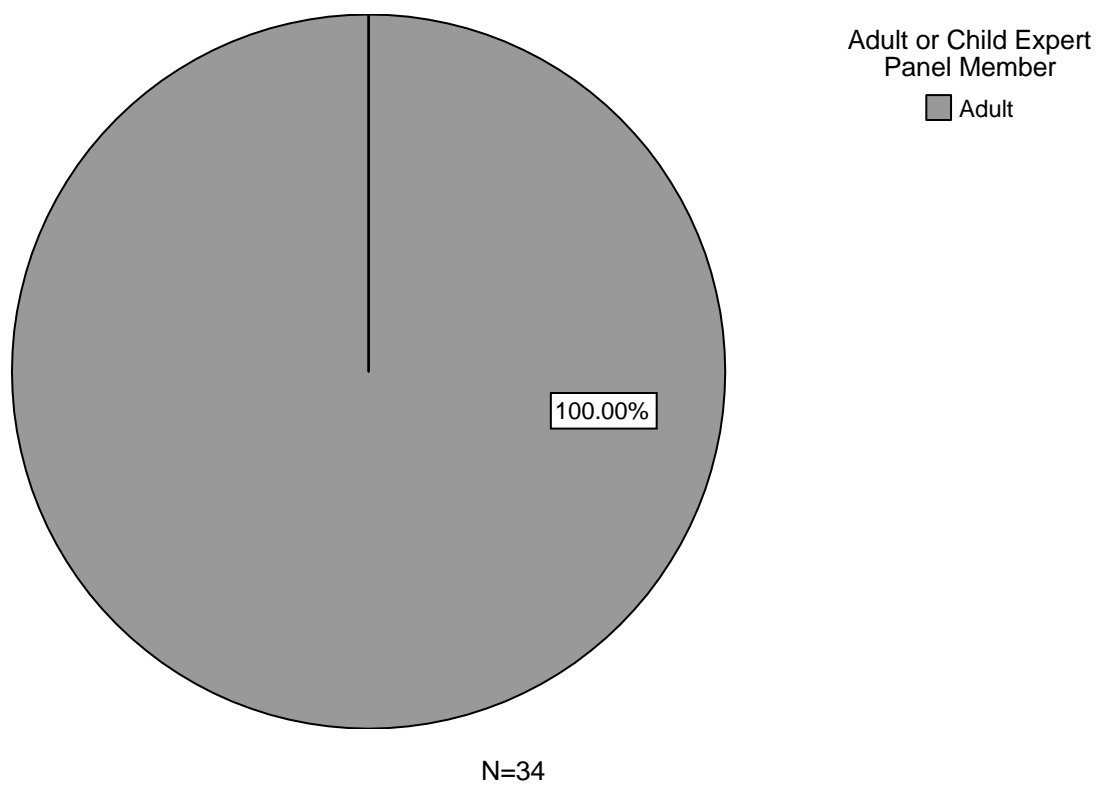
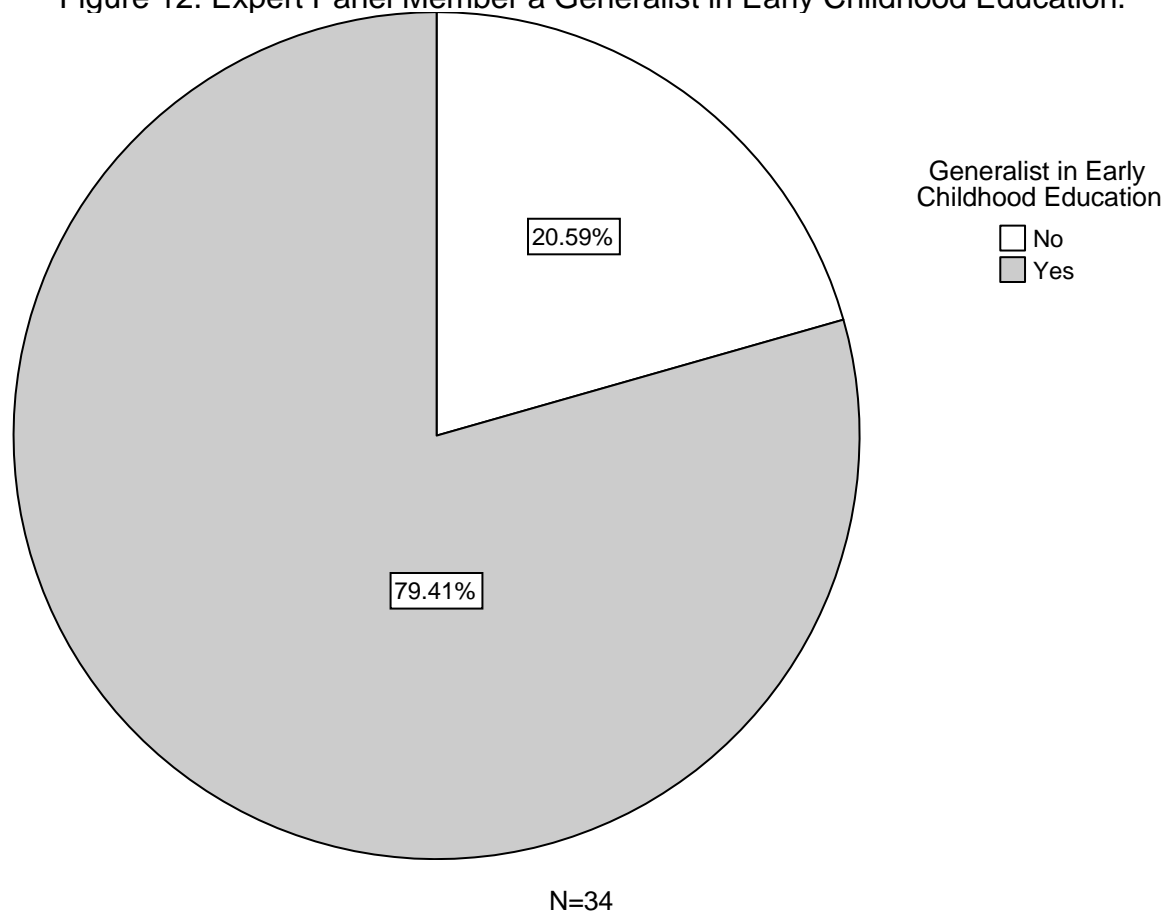


Figure 12. Expert Panel Member a Generalist in Early Childhood Education.



## **Interview's Guiding Questions**

- 1) What does creativity mean from your point of view?
- 2) Do you believe that creativity is important for the future? And if you believe so, what are some of the benefits of creativity that you believe to be valuable?
- 3) Do you think that you are a creative person? What about being a creative youngster and teacher? And why do you think so?
- 4) Do you think all children are creative? And why?
- 5) Do you think we can nurture children's creativity? And how?
- 6) Do you think teachers can influence children's creativity? And how?
- 7) Do you think there are indicator behaviors for creativity in general? What about in children?
- 8) If you believe that there are indicator behaviors for creativity, you think that these indicator behaviors can be manifested in the classroom?
- 9) What constitute a creative behavior from your point of view?
- 10) Why do you think this certain behavior is considered a creative behavior (or not considered a creative behavior according to the results on creative behaviors checklist)?
- 11) What do you do when you observe such a behavior manifested by a child in your classroom?
- 12) What are some of the common misconceptions that teachers believe about creativity and children from your point of view?
- 13) When you can tell that this child is creative? And why?
- 14) What are some of the significant factors that you think influence creativity development, process, and product?
- 15) What are some of your recommendations and suggestions in relation to classroom practices and creativity in order for each child to fully express their creative potential and to continue to be creative adult in the future?

## Thank You List for Participant Teachers

- |                           |   |
|---------------------------|---|
| 1) Barr, Dawn M.          | Sprouting Tree Children's Center (State College, PA)          |
| 2) Brown, Kimberly        | Bennett Family Center, Penn State (University Park, PA)       |
| 3) Bugaj, Matt            | Bennett Family Center, Penn State (University Park, PA)       |
| 4) Burtner, Michelle      | Discovery Daycare (State College, PA)                         |
| 5) Coil, Meghan           | State College Suzuki Program (State College, PA)              |
| 6) Comi, Aimee            | John H. Glenn High School (State College, PA)                 |
| 7) Curley, Jill           | Child Development Lab, Penn State (University Park, PA)       |
| 8) Dudukovich, Carole     | Megatot Director at Nittany Gymnastics (State College, PA)    |
| 9) Dunkelberger, Cathye   | Penns Valley Elem. School (Penns Valley, PA)                  |
| 10) Emel, Hollie          | Cen-Clear Child Services (State College, PA)                  |
| 11) Fellin, Nina          | Child Development Lab, Penn State (University Park, PA)       |
| 12) Frank, Jean           | State College Head Start (State College, PA)                  |
| 13) Gerte, Kimberly B.    | Child Development Lab, Penn State (University Park, PA)       |
| 14) Gilmore, Moriah       | Penns Valley Elem. School (Penns Valley, PA)                  |
| 15) Grossman, Lisa        | Montessori School of the Nittany Valley (State College, PA)   |
| 16) Hartman, Nancy L.     | Penns Valley Elem. School (Penns Valley, PA)                  |
| 17) Hettinger, Jaqueline  | Penns Valley Elem. School (Penns Valley, PA)                  |
| 18) Hillard, Edith        | Bennett Family Center, Penn State (University Park, PA)       |
| 19) Houser, Beth A.       | Penns Valley Elem. School (Penns Valley, PA)                  |
| 20) Howdysell, Kelly      | Arts Conservatory of Central PA (State College, PA)           |
| 21) Hurvitz, Susan        | State College Child and Family Center (State College, PA)     |
| 22) Koch, Vicky           | Penns Valley Elem. School (Penns Valley, PA)                  |
| 23) Kodish, Machele L.    | Lewistown Elementary Mifflin Co. School Dist. (Lewistown, PA) |
| 24) Lang, Christy         | Discovery Daycare (State College, PA)                         |
| 25) Lower, Debbie         | Bennett Family Center, Penn State (University Park, PA)       |
| 26) McMillen, Laura       | Bennett Family Center, Penn State (University Park, PA)       |
| 27) McNally, Patti        | Child Space Day Care Center (State College, PA)               |
| 28) McQuaide, Vicky       | Arts Conservatory of Central PA (State College, PA)           |
| 29) Mortimer, Colleen     | Bennett Family Center, Penn State (University Park, PA)       |
| 30) Mykut, Dawn           | Arts Conservatory of Central PA (State College, PA)           |
| 31) Niebel, Sandy         | Penns Valley Elem. School (Penns Valley, PA)                  |
| 32) Raling, Susan         | Child Space Day Care Center (State College, PA)               |
| 33) Seby, Holly           | Lewistown Elementary School (Lewistown, PA)                   |
| 34) Smoyel, Nancy         | Child Development Lab, Penn State (University Park, PA)       |
| 35) Snedeker, Cathe       | Lewistown Elementary School (Lewistown, PA)                   |
| 36) Spangler, Lorin       | Stay and Play Pre-school (State College, PA)                  |
| 37) Vancas, Kris          | Penns Valley Elem. School (Penns Valley, PA)                  |
| 38) Verzalla, Karen Marie | Central PA Dance Workshop (State College, PA)                 |
| 39) Welch, Anne           | State College Child and Family Center (State College, PA)     |
| 40) Wells, Molly          | Child Space Day Care Center (State College, PA)               |
| 41) Wood, Brad            | Penns Valley Elem. School (Penns Valley, PA)                  |

## Thank You List for Participant Experts

### Summary of Some of Experts' Resumes

**Addison-Guss, Gail:** Education: Bachelor Degree from Pennsylvania State University in Individual and Family Studies, Masters' from the University of Connecticut in Early Childhood Education.

Examples of Professional Experiences: Working as Assistant Director for Bennett Family Center at Penn State; working in Head Start; teaching in a child care center; owning/directing a private nursery school; teaching and administrative roles in two independent elementary schools; instructing at a community college; and working as a director of Daybridge Child Development Center at Penn State.

**Armstrong, Jacquelyn:** Education: Bachelors' and Masters' Degrees in Elementary Education. Examples of Professional Experiences: Working as a director of Sprouting Tree Children's Day Care Center for five years; and seventeen years teaching experience.

**Brighton, Jill:** Education: BA, General Arts and Science with an emphasis in Dance, Pennsylvania State University; Associates Degree in Dance, Lansing Community College, MI. Examples of Professional Experiences: Pennsylvania Dance Theatre, State College, PA (Professional Modern); Unexpected Company, Atlanta, GA (Professional Modern); Performance in Art, Philadelphia Industrial Correctional Center (Professional Modern); Teaching in Penn State, Dance Team (ballet); teacher and director of Central Pennsylvania Dance Workshop (modern, jazz, ballet, improvisation, composition and choreography, tap, creative movement, pre ballet, Pointe; adults and children); Penn State, Head of Dance Minor, School of Theatre; Teaching Assistant at Penn State.

**Carl, Barbara:** Education: B. S. Applied Behavioral Science, Penn State, M. S. Community Psychology, Penn State; Doctoral Candidate in Administration and Leadership Studies, Indiana University of Pennsylvania.

Examples of Professional Experiences: Associate Director of Harrisburg Center for Healthy Child Development, Penn State; Owner, Community Consulting; Director, Communities That Care Project, Cumberland County, Regional Coordinator; Capital Region Health Futures Project; in addition to several publications including but not limited to: *The Pennsylvania Early Childhood Quality Settings Study*; *Lycoming Clinton Head Start Family Child Care Mentoring Evaluation*; *Building Community to Build Family: Communities That Care*; etc.

**Darur, Jody, R.:** Education: B. S. Ohio State University in Elementary Education.

Examples of Professional Experience: Assistant Director, Teacher at Stay and Play Preschool and Day Care, State College, PA; Instructional Aide/ Substitute Teacher, Corl Street School, State College, PA; Aide, Volunteer, Park Forest Elementary, State College, PA; Tutor, Junction City Schools, Junction City, KS; Elementary Teacher, Columbus Public Schools, Columbus, OH.

**De Alba-Johnson, Nydia, F.:** Education: Masters' in Educational Psychology at the University of Minnesota.

Examples of Professional Experiences: Training Specialist, Early Literacy Training Project, Minneapolis, MN; early childhood teacher; a Bilingual Outreach Liaison for the Minneapolis Public Libraries; a youth program evaluator; worked as a graduate reach assistant at the Center for Urban and Regional Affairs (CURA); and created a document, *Youth development practices and the Latino Community: Best Practices for Latino Youth Development*.

**Dittmar, Betty Jane:** Education: B. S. in Recreation Education, Penn State.

Examples of Professional Experiences: Worked in Baltimore County of Park and Recreation; teaching

creative dance to children; established a studio-property on South Pugh Street; teaching modern dance and dance composition, folk dance, ballroom dance; created summer-arts (dance, drama, creative writing, art, music, language) day camp (Camp Strawberry Hill); created a camp for boys (Camp Black Hawk) including creative arts, nature study and sports; in addition to other administration experiences.

**Duerr, Linda M.:** Education: B. S. Elementary Education, Penn State; Masters' of Education in Language and Literacy, Early Childhood Curriculum and Instruction, Penn State.

Examples of Professional Experiences: Presented numerous workshops & Seminars in Early Childhood and Elementary Education Fields including but not limited to *Guiding the Spirited Child, Believe It Or Not... You Can Be a Storyteller, Identifying Aggressive Behaviors, Conflict Resolution Skills, Room Arrangement as Teaching Strategy, Puppetry and Creative Drama, Engaging Children's Minds, The Project Approach, Playful Writing on Computers For Four to Ten Years Olds, Identifying Early Language Delays*, etc.; Instructor, Penn State; in addition to several professional outreach activities.

**Fiene, Richard:** Education: Ph. D., Newport University.

Examples of Professional Experiences: Director of the Capital Area Early Childhood Training Institute for Infancy at the Pennsylvania State University; researching, advocating, and training in the infancy area; worked as the director of Demonstration Infancy Program at the University of North Carolina at Greensboro; worked for over 25 years at the state and national level on several infancy-related projects; research psychologist specializing in early childhood program evaluation; Assistant Professor of Psychology, Penn State; Professor in Charge of the Graduate Program in Early Childhood Education, Harrisburg, Penn State; director of the Division of Licensing Systems & Research in the Office of Licensing and Regulatory Management, Pennsylvania Department of Public Welfare; published over 100 journal articles, chapters, monographs, reports and papers. His research has been published by the National Association for the Education of Young Children, National Child Care Association, National Center for Clinical Infant Programs, National Association for Regulatory Administration, etc.; he developed over 50 national and state evaluation instruments, licensing and program quality measurement systems, and indicator checklists.

**Foltz, Robin B.:** Education: B. S., Penn State in Elementary and Kindergarten Education. Examples of Professional Experiences: Teaching at Bellefonte Area School District, PA; Mifflinburg Area School District, PA; Penn's Valley Area School District, PA; State College Friends School, PA, etc.

**Goertzel, Ted G.:** Education: B. A. Antioch College, Yellow Spring, Ohio in Sociology and Anthropology; M. A. Washington University, Saint Louis, MO in Sociology and Latin American Studies; Ph. D. , Washington University in Sociology.

Examples of Professional Experiences: Professor of Sociology, Rutgers University, NJ; Assistant Professor, University of Oregon; Visiting Instructor, University de Sao Paulo; published numerous books, book chapters and articles including but not limited to his famous book: *Cradles of Eminence: Childhoods of More Than 700 Famous Men and Women*; articles such as: *Elements of philosophy of mind, The Myth of The Normal Curve, Social Movements and Social Change: The Dynamics of Social Transformation*; in addition to several reviews and applied research reports such as his reviews of *Toward a New Sociology* by C.H. Anderson, *Radical Sociology* by David Sternberg, *The Celebration of Heroes* by William Goode, *Genius, Creativity, and Leadership* by Keith Simonton.

**Greenberg, Mark T.:** Education: Ph. D.

Examples of Professional Experiences: Holder of the Edna Peterson Bennett Endowed Chair in Prevention Research and Director of the Penn State Prevention Research Center for the Promotion of Human Development; authored more than 150 journal articles and book chapters; co-creator of PATHS (Promoting Alternative Thinking Strategies), a program designed to improve the social, emotional and



cognitive competence of elementary-aged children; has served as an investigator in Fast Track, a comprehensive program that aims to prevent violence and delinquency in families.

**Heckman, Mary Jane:** Education: Bachelor of Arts Degree in Elementary Education; Bachelor of Arts in Secondary Education.

Examples of Professional Experiences: teaching at Stavanger International School, Stavanger, Norway; Capital School District, Dover, DE; Laramie County Schools, Cheyenne, WY; United Methodist Nursery School, Highland, CA; Director of Zwingli Christine Scholl, East Berlin, PA.

**Heffner, Thomas C.:** Education: M. S. Early Childhood Education, Juniata College; M. Ed. in Child and Family Studies: Early Education/Special Needs/Special Education, University of North Carolina at Charlotte.

Examples of Professional Experiences: Program Specialist in Early Childhood Education, Pennsylvania College of Technology, Williamsport, PA; Adjunct Faculty in Rowan Cabarrus Community College, Salisbury, NC; Adjunct Faculty in Mitchell Community College, Statesville, NC; Pre-K Teacher Assistant/ Teacher, Charlotte-Mecklenburg Schools, Charlotte, NC; Early Childhood Instructor, Central Piedmont Community College, Charlotte, NC.

**Hein, Rebecca:** Education: Masters' Degree in Cello Performance, Northwestern University School of Music.

Examples of Professional Experiences: Teacher, performer, and art columnist; taught at University of Wisconsin Oshkosh, Ripon College, and the Oshkosh Suzuki Talent Education Center, for which she also served as Artistic Director. She published a famous book titled: *A Case of Brilliance*.

**Heintzelman, Lisa L.:** Education: A. A. in Early Childhood Education, Harrisburg Area Community College; B. S. in Elementary Education, Elizabethtown College, Elizabethtown, PA; Masters' in Education Administration, Temple University, Harrisburg, PA.

Examples of Professional Experiences: Instructional Facilitator for Preschool Program, Harrisburg School District; Trainer and Mentor for Early Childhood Caregivers, Capital Area Early Childhood Training Institute, Harrisburg, Penn State; Adjunct Instructor in Early Childhood Education, Harrisburg, Penn State; Teacher for Elizabethtown Area School District; Director of Clinical Experiences/Early Childhood Instructor, Elizabethtown College, Elizabethtown, PA.

**Hennessey, Beth A.:** Education: B. A. in Bilingual Education, Brown University, M. Ed. in Elementary Education, Lesley College; Ph. D. in Social Development Psychology, Brandeis University.

Examples of Professional Experiences: Professor at Wellesley, MA., offering a seminar on the Psychology of Creativity specialty area; numerous publications in the creativity field including but not limited to: *Rewards and Creativity*; *Intrinsic motivation, Affect, and Creativity*; *Teaching for Creative Development*; *Social, Environmental, and Developmental Issues and Creativity*; *The Motivation For Creativity in Children*; *Story-Telling: A method for Assessing Children's Creativity*; *Social Influences on Creativity*.

**Hill, Alex E.:** Education: B. Mus (cum laude) in Music Composition, University of North Texas; M. Mus (summa cum laude) in Conducting, Penn State.

Examples of Professional Experiences: Executive Director, Arts Conservatory of Central Pennsylvania; Composer, Conductor, Arts Administrator; Founder and Music Director, Central PA Youth Orchestra; Co-Founder, Managing Director, Ballet Theatre of Central PA; Pre-Concert Lecturer, State College Choral Society; Director of Liturgical Music, Our Lady of Victory Church; Adjunct Instructor in Music, Penn State.

**Jalongo, Mary R.:** Education: B. A. University of Detroit, Mercy, English and Spanish; M. A. T. Oakland University, Elementary/Language Arts; Ph. D. University of Toledo, Early Childhood Education/Research and Measurement.

Examples of Professional Experiences: Coordinator of Doctoral Program in Curriculum and Instruction and Early Childhood Graduate Program and Professor at Indiana University of Pennsylvania; Coordinator of Elementary Education/ Spanish Program; Instructor, University of Toledo; numerous publications on creativity area including but not limited to: *Creative Expression and Play in Early Childhood; The Arts in Young Children's Lives; Creating Communities: The Role of The Teacher in the 21<sup>st</sup> Century; Major Trends and Issues in Early Childhood: Challenges, Controversies, and Insights.*

**Keesey, Marilyn:** Education: B. S. in Education, Penn State; MED in Academic Curriculum and Instruction/Early Childhood, Penn State; Permanent Certification from Pennsylvania for K and Elementary; Early Childhood Certification.

Examples of Professional Experiences: Teaching for more than 20 years in Mifflin County School District, Lewistown, PA.

**Lee, David L.:** Education: B. S. in Psychology, University of Pittsburg, PA; M. Ed in Special Education, California University of Pennsylvania; Ph. D., Purdue University, IN.

Examples of Professional Experiences: Assistant Professor of Special Education, Penn State; Program Coordinator of Special Education, Penn State Great Valley; several publications on motivational issues in children with Attention-Deficit/ Hyperactivity Disorder (AD/HD) and other behavioral disorders including but not limited to: *Focusing Attention to Deep Structure in Math Problems: Effects On Elementary Education Students With and Without Attentional Deficits; Using Color to Increase the Math Persistence of Children With Co-Occurring Learning Disabilities and Attentional Deficits.*

**McIntyre, Tom:** Education: B. S. in Childhood Development/Preschool Education, State University College at Buffalo; M. Ed. in Special Education, Rutgers University; Ph. D. in Special Education (Emotional Disturbance/Behavior Disorders), University of Connecticut. Examples of Professional Experiences: Professor at Hunter College of the CUNY, New York; Special Education Teacher (middle and high school), Fulton County, GA; Associate Professor, Exceptional Education, State University at Buffalo, NY; Assistant Professor/Associate Professor in Special Education, Eastern Illinois University; Co-Director, Summer School for Disabled Students, Manchester, CT. Numerous publications of books, book chapters, and assessment devises including but not limited to: *A Resource Book for Remediating Common Behavior and Learning Problems; A Behavior Management Checklist; The Behavior Survival Guide for Kids; The Effects of Music on the Classroom Behavior of Behaviorally Disordered Youth; BD? LD? Or Culturally Different?.*

**Nyquist, Kurk J.:** Education: B. S. in Elementary Education, Penn State; M. Ed. in Curriculum and Instruction, Penn State; Principle's Certificate, St. Francis University.

Examples of Professional Experiences: Principal at Penns Valley Area School District, PA; Principal at Jersey Shore Area School District; Teaching at Bellefonte Area School District, PA.

**Olds, Jeffrey:** Education: Bachelor's Degree in Psychology, University of Michigan; Masters' in Business Administration (MBA) Degree in Marketing, Michigan State University.

Examples of Professional Experiences: Full time professional magician; teaching magic to children and adults in the form of private or semi-private in home lessons; group work shops at schools, libraries and bookstores; marketing of magic tricks and props.

**Rizzuto, Michael D.:** Education: B. A., Franklin and Marshall College, Lancaster, PA; Teaching Certification (Social Studies), University of North Carolina.

Examples of Professional Experiences: Corporate Secretary/Treasure, Rizzuto Solutions; Corporate

President-Program Director, Business Manager, Head Coach, Majority Shareholder, Nittany Gymnastics and Dance Academy, State College, PA; National Gymnastics Safety Certification Instructor; Instructor, Business Law, Charles Community College; Freelance Writer.

**Sawyer, Keith R.:** Education: B.S. in Computer Science, Massachusetts Institute of Technology, Cambridge, MA; M.A. in Human Development and Ph. D. in Psychology (Human Development), University of Chicago.

Examples of Professional Experiences: Associate Professor, Washington University, Saint Louis, MO; Affiliated Professor, Central Institute for the Deaf, Saint Louis, MO; Lecturer, University of Carolina, Santa Cruz; Lecturer, University of Chicago; numerous publications on creativity including but not limited to: *Explaining Creativity: The Science of Human Innovation*; *Creativity and Development*; *Group Creativity: Music, Theatre, Collaboration*; *Creativity in Performance*; *Pretend Play as Improvisation*; *Conversation in the Pre-school Classroom*; *Creating Teaching: Improvisation in the Constructivist Classroom*.

**Shaltiel Amalia:** Education: Bachelor of Arts in Psychology; Certificate Program in Art Therapy, New School For Social Research, NYC.

Examples of Professional Experiences: Tai Chi Instructor at Penn State Department of Kinesiology; Tai Chi Instructor, Moving Water Tai Chi Circle; Rostered Artist of Pennsylvania Council on the Arts as a sculptor; Head of the Art Alliance's Children's Program; Art Instructor of adults and children at the Art Alliance of Central Pennsylvania; Computer Graphics Facility Manager in Biology Department at Columbia University, New York.

**Smalstig, Ali:** Education: B. A. in Psychology, West Chester University, PA; M.A., Applied Clinical Psychology, Penn State.

Examples of Professional Experiences: REACH Research Coordinator, Harrisburg Center for Healthy Child Development, Penn State; Child Assessment Trainer; Arnett (Caregiver Interaction Scale) Trainer; Early Childhood Environment Rating Scale Trainer/Mentor; Research Assistant, Capital Area Early Childhood Training Institute, Harrisburg, Penn State; Therapeutic Staff Support, Edgewater Children's Services, Harrisburg, PA.

**Smith, Renie:** Examples of Professional Experiences: Founder and President of Meadowbrook Educational Services Inc. Licensed and Certified Davis Dyslexia Correction Facilitator for more than 20 years; provided after school tutoring; establishing summer reading programs; accumulated thousands of volunteer hours in several schools.

**Vadella, Jean:** Education: B. S. in Elementary Education; M. Ed. in Developmental and Remedial Reading; Ph. D. in Curriculum and Instruction.

Examples of Professional Experiences: Elementary Principal at Panorama/ Boalsburg Elementary School, State College Area School District, PA; worked as Elementary Teacher, Reading Specialist, Teacher of the Gifted, University Instructor, and Elementary Supervisor.

**Whitesell, Wendy J.:** Education: B. S. in Special Education, Lock Haven University of Pennsylvania; M. Ed. in Early Childhood Education, Penn State.

Examples of Professional Experiences: Director of the Bennett Family Center, Penn State; Child Care Center Director, Children's World, State College, PA; Head Start Social Services Advisor; Child Assault Prevention Project Leader; Head Start Teacher/Home Visitor.

## **Vitae**

Shereen Abdel Kader was born in Cairo, Egypt. She had her bachelor degree from Kindergarten Teachers' College, Cairo University, Egypt, in Early Childhood Education. Also, she has two graduate diplomas in Mental Hygiene from College of Education, Zagazig University, Egypt. Because of her excellence and academic standing, Shereen was awarded a position to work as an Assistant Professor in the Kindergarten Teachers' College. Then Shereen won a scholarship from the Egyptian Government to obtain M.A and Ph. D. degrees in the United States. She received a M.A. in Literacy from Indiana University of Pennsylvania, and then received her Ph. D. from Pennsylvania State University. Shereen has intensive knowledge and experiences in the Early Childhood Education field. Currently, Shereen is working as an Assistant Professor in Harris Stowe State University in Saint Louis, Missouri. In addition, she has been awarded many honorary memberships in honorary societies such as The National Scholars Honor Society in recognition of scholastic achievement and excellence. She has earned numerous awards both in Egypt and in the United States. Among her awards are the Pi Lambda Theta Scholarship and Research Grant, the Alumni Society 25th Anniversary/Pi Lambda Theta for superior graduate students, the Phi Delta Kappa International Graduate Fellowship in Educational Leadership, the Conrad Frank Jr. Graduate Fellowship, and the Burdett E. Larson Graduate Fellowship, which recognize students in education who are committed to college teaching and research and whose ethnic, cultural, or national backgrounds contribute to the diversity of the student body. Shereen also received recently an Achieving Women Award from Pennsylvania State University Commission for Women. This award recognizes Penn State women who have consistently shown leadership and are accomplished in their fields, have supported the University's diversity efforts and promoted equal opportunity, and have contributed to human causes and public service activities. Also, this award is for women who contributed significantly to Penn State, have invested their energies and abilities in nurturing and mentoring others, and who are a highly valued and generous member of the community. Shereen's thesis research proposes an innovative model for a Center for Creativity, the mission of which would focus on enhancing the perspectives and recognition of creative needs and manifestations in the community, society, and the globe. This center would be interdisciplinary, inclusive, and intergenerational, and directed at recognizing and appreciating the signs of creativity from birth to late adulthood. Shereen is leading a new school reform movement that calls for "Education for Creativity rather than Education for Achievement". She defends everyone's equal-opportunity right to be creative, even those with special needs. Shereen believes there is always a gift in disabilities. In order to meet the challenges of the new century, she asserts that we should build a creative society, and that children and adults need to acquire creativity as a life skill so that they can contribute effectively in the changing world. From an equal opportunity standpoint, all individuals from birth to late adulthood have the right to fully express their creative potentials and to enjoy the best quality of educational programming and workplaces that allow them to learn, develop, and to be enhanced creatively.