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SERVICE-LEARNING PEDAGOGY AS AN INSTRUCTIONAL TOOL FOR LATINO

STUDENT EDUCATION

A Thesis in
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by
Centrice Martin

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The thesis of Centrice Martin was reviewed and approved* by the following:

Nicole Webster
Associate Professor of Agriculture Extension Education
Thesis Advisor

John Ewing
Assistant Professor of Agriculture Extension Education

Mayra Colbert-Bamaca
Assistant Professor of Human Development and Family Studies

Tracy Hoover
Professor and Department Head of Agricultural and Extension Education

*Signatures are on file in the Graduate School

ABSTRACT

Interested in improving academic achievements for Hispanic students, this study was initiated to conclude if service-learning pedagogy is a viable practice for improving student learning. US traditional schools have been providing a quality education and resources to students for many years. However, too many urban minority youth, such as Latino and Hispanic students, are performing at lower levels of achievement in today's public education institutions. America's schools are being pressured to design and implement new teaching methods that increase academic performance and improve the educational experience this population of students. Searching for innovative strategies that effectively increase critical thinking skills for Hispanic students in middle school grades, the research question was designed to examine the impact a service-learning pilot program had on these students' critical thinking skills. In analyzing the frequencies for the matched paired t-test, the results of the data were presented in three sections that included the following: (1) Lighthouse Community Charter School and East Austin Prep with a total sample size of 71 participants (2) East Austin Prep with a sample size of 50 participants (3) Lighthouse Community Charter School with a sample size of 21 participants. Findings from both participating charter schools with service-learning participants reported service-learning pedagogy to be a viable instructional tool for increasing critical thinking skills for Latino students. Findings suggest that teachers can incorporate this pedagogy in their classrooms to increase Hispanic students' critical thinking skills. Service-learning can be integrated into classroom curricula as a teaching strategy that increases academic knowledge and critical thinking skills for students. Evidence from this study indicate that service-learning is a powerful, significant tool for developing essential lifelong learning skills such as critical thinking for our diverse student population specifically Latino students.

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Chapter 1

Introduction

Schools in America that are educating socioeconomically disadvantaged Hispanic and Latino students with culture and language barriers are being pressured to produce effective teaching practices. Standardized test scores indicate that Hispanic and Latino students tend to have low performance and academic achievement levels in U.S. public schools. As part of the 2000 educational reform movement, the federal No Child Left Behind (NCLB) Act was charged with the objective to increase academic performance for all American students by 2014. NCLB critics and advocates, alike, would argue this targeted goal is not attainable. The far reaching goal requires students of all populations be performing at proficient levels, as opposed to basic or below basic, in academic areas. The 2009 Nations Report Card highlights terrifying mathematics results for 8th grade middle school students (Nation Grade 8 Public Schools, n.d.) It is suggested that NCLB's targeted goal will not be reached with overall results for 2009 indicating that only 25 percent of students in public education performed at proficient levels while only 7 percent achieved in advanced levels (Nation Grade 8 Public Schools, n.d.). Sixty-eight percent of today's 9th grade students would have to rise from basic and below basic status and achieve at a proficient level for NCLB to reach its goal for just one specific grade level in mathematics.

With a diverse student population in U.S. classrooms; teachers are experiencing difficulty teaching to a single group of students. Nation Grade 8 Public Schools (n.d.) reported minorities represented 43 percent of the 2005 US population. Hispanics accounted for 21 percent of the population which also documents the Hispanic population as being the largest minority group in the US. For effective learning to occur among all students in the U.S., various teaching strategies are necessary in each classroom. Teaching practices in the US tend to be structured and

influenced by state assessment exams that are used to gage a student's academic success.

Influences on curriculum and instruction have resulted to standardized practices. Teachers begin using standardized practices involving little flexibility with a great deal of focus on tested subject material to encourage high academic performance on state exams (Center on Education Policy, 2007; Center on Education Policy, n.d.). Struggles from standardized teaching add to the complexities U.S. education faces and will continue to face until teachers learn how to engage diverse student populations in authentic learning. In order to meet the needs of students, teachers will need to continue to find teaching strategies that are meaningful to the pupil and challenges them to be the most engaged learner in the classroom. Teachers should begin to use flexible pedagogy that is reflective and responsive to the needs of today's diverse population.

Service- learning has become a buzz word among educators who are interested in exploring the impacts it may have as a pedagogical tool in classroom teaching and learning. Stakeholders such as policy makers, educators, and school administrators are interested in learning the value and outcomes of service-learning for its participants. They are seeking strategies that will improve the academic performance of Hispanic and Latino students. Service learning has a number of cognitive development outcomes that have been shown to have a positive impact on student learning. Through service-learning experiences students build skills necessary for analyzing and solving problems and developing creative solutions (RMC Research Corporation, 2007). For example, RMC Research (2007) shared that Billig and Root discovered strong service-learning outcomes that included students weighing alternative solutions to issues, resolving conflicts among themselves, persuasion techniques, and how to manage complex tasks. One area that has captured the interest of many educators that are seeking ways to improve academic performance is critical thinking. Classrooms with a higher level of autonomy can integrate models of service-learning that provide reflection opportunities needed to increase critical thinking among students.

Charter schools are a type of public school encouraged to exercise their degrees of freedom for curriculums to include authentic experiences as a prerequisite for reflective activities. Through charter schools, service-learning can be integrated into the curriculum with minimal dispute because of their autonomy. Charter schools are in a unique position to serve as an outlet for Hispanic and Latino students that are in need of additional resources, tools, and innovative strategies. When compared to traditional public schools, charter schools operate with smaller classroom sizes, additional programs reflecting the needs of their student population and new, effective pedagogical styles. With the characteristics of a charter school, teachers can create curricula that aim to strengthen critical thinking skills for Hispanic and Latino students using the pedagogy of service-learning.

Statement of Problem

Service-learning pedagogy can be used as a powerful instructional tool to increase critical thinking skills among Hispanic and Latino students in grades K-12. Critical thinking skills are essential for adolescents to advance in their cognitive development. A child's development in terms of information processing, perceptual skills and language learning are essentially important to the overall development of a child. For example, Adolescent with greater cognitive skills are more likely to obtain higher levels of education due to their ability think critically about abstract and concrete issues and synthesize large amounts of information. They are also able to reflect on their current actions and understand how these impact their future. By integrating service learning into the curriculum, teachers are provided the opportunity to better prepare Hispanic and Latino students to overcome the common barriers they often face when striving to attain an education.

Significance of Study

Richard Fry (2006) published the report, *The Changing Landscape of American Public Education: New Students, New Schools*. Fry analyzed data collected from the U.S. Department of Education to examine the changes within schools across a 10 year period for 48 states and the District of Columbia; excluding Tennessee and Idaho were excluded due to the lack of income data on race and ethnicity. Significant to the findings, Fry reported that the growth of the Hispanic population has drastically increased over the 10 year period. While enrollment increased by 23 percent in 2002, Fry (2006) stated that 64 percent of the students added to public schools were Hispanic students. Conclusions stating that public schools have seen an influx of Hispanic students in this country, made by Fry, suggest that the future racial and ethnic composition will continue to become more diverse.

Equally important is to be aware that the educational attainment among Hispanic and Latino students is quite low according to the National Assessment of Educational Progress (Nation Grade 8 Public Schools, n.d.) Despite the demographics, Hispanics students, when compared to their white peers, do not have adequate educational access, achievement, and attainment (Nation Grade 8 Public Schools, n.d.). In fact, according to the Nation's Report Card for 2009 mathematics, only 19 percent of eighth grade Hispanic and Latino students scored at or above proficient levels, leaving a daunting 81 percent of this student population performing at basic or below basic achievement levels (Nation Grade 8 Public Schools, n.d.).

Low levels of educational attainment for Hispanic and Latino students are stemming from a variety of factors. Researchers such as Olivos (2009), Marx (2008), and the authors of the article, *The Context of School Success for Latino Middle School Students: Direct and Indirect Influences of Teachers, Family, and Friends* (2009), interested in improving Latino education have reported cultural and language barriers as being one of the driving forces keeping Hispanic

and Latino students from achieving academic progress. Hispanic and Latino children often acquire language proficiency and adapt to cultural norms quicker than their parents (Gonzales, Knight, Morgan-Lopez, Saenz, & Sirolli, 2002; Martinez, 2006), consequently becoming translators, also known as language brokers for their families (Martinez, McClure, & Eddy, 2009). Children referred to as language broker have become the intermediaries between the culture and language barriers that separates their families from the American society. Martinez, McClure, and Eddy (2009) conducted a study that examined the behavioral and emotional adjustment in family contexts which observed for the presences of language brokering adolescences. The authors for this study reported, "...the need for advancing practices that increase language and cultural supports for immigrant families support parents efforts' to foster positive youth and family adjustment." Experiential classroom experiences such as service learning have been extremely important in addressing some of these issues.

The educational experience of Hispanic and Latino students can be enhanced through the instructional pedagogy, service-learning. The induction of service-learning pedagogy creates opportunities for cross-cultural learning that engages and reflects the mores of Hispanic and Latino students. Service-learning empowers students to contribute ideas for the creation of community participation that provides authentic learning experiences. While traditional public schools struggle to meet the needs of a diverse student population, charter schools have been exercising their degrees of freedom to serve disadvantaged populations. Charters have the ability to implement resources and curricula involving service-learning to increase academic achievement for Hispanic and Latino students. Providing resources such as language proficiency classes, family and student counseling, culturally responsive teachers and curricula, smaller class sizes, and programs encouraging parental participation all result in increased academic performance for Hispanic and Latino students. Introducing service-learning to the curriculum can support Hispanic and Latino students by initiating a holistic approach to foster student

engagement. Using service-learning as an instructional tool gives the teacher the flexibility to incorporate culture to optimize learning for a diverse student population. Moreover, through experiential learning techniques, service-learning can increase academic performance and lifelong skills and also promote positive youth development and community change (Billig, 2002; Camino & Zeldin, 2002).

Purpose of Study

The primary purpose of this study was to determine the impact of a service-learning program on critical thinking skills for middle grade Hispanic students attending urban charter schools. Strengthening public education for the national middle school grades includes equipping students with 21st century skills such as critical thinking and decision making (Kay, 2009). Pedagogy such as service-learning has been positively linked to constructive learning outcomes when tied to school curriculum. The focus of this study was to determine if service-learning pedagogy was an avenue to strengthen public education for middle grade, Hispanic students by improving critical thinking skills.

Limitations

First, this study does not control for implementation variation for the service-learning model among the two charter schools. The results of the study may be contingent upon implementation and contextual factors that may have affected the impacts service-learning had on its youth participants.

Secondly, youth participants were not individually tracked for progress throughout the duration of the pilot study making it impossible to note the impacts for each participant. Rather results were dependent using matched paired t-test to correct for this problem.

Thirdly, the gap in the number of surveys completed for pre and post surveys at both charter schools may have affected results. A total of 50 students completed the pre and post survey at East Austin Prep Charter; whereas only 21 students completed the pre and post survey at Lighthouse Community Charter School. The low number of observed student participants from Lighthouse Community Charter School may not have been a large enough sample to justify the results of the statistical tests for this particular school.

Terminology Clarification

It is acknowledged that the terminology used to reference the Hispanic and Latino population is not consistent in this document. Throughout the text, the terms Hispanic and Latino are used interchangeably to denote all individuals that identify themselves as either Hispanic and/or Latino. The purpose for using the two terms interchangeably is due to the variation in self-reporting at each of the pilot sites. The sample population includes a diverse group of Latino students from various geographical locations.

Definitions such as Hispanic and Latino and charter schools will be provided for purposes of this paper. The two race and ethnicity categories, Latino and Hispanic, are defined by the U.S. Department of Interior (1997) in the document, *Standards for Maintaining, Collecting, and Presenting Federal Data on Race* as follows: individuals that have Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race.

Operation for charter schools tend to vary across each state because each charter has the flexibility to their mission and goal statements. Therefore, an accurate, legal definition for a

charter schools does not exist for all operating charters in the United States. Essentially, charter schools provide parents with a choice to send their child to a public school that can provide additional benefits and attention to meet their children's needs. The US Charter Schools (n.d.) organization's website compiled a list of cited charter school descriptions. On the US Charter School's website (2005), a charter school description is quoted from the Education Commission of the States. The description highlights the basic elements of all charter school reads as follows:

Charter schools are semi-autonomous public schools, founded by educators, parents, community groups or private organizations that operate under a written contract with a state, district or other entity. This contract, or charter, details how the school will be organized and managed, what students will be taught and expected to achieve, and how success will be measured. Many charter schools enjoy freedom from rules and regulations affecting other public schools, as long as they continue to meet the terms of their charters. Charter schools can be closed for failing to satisfy these terms (US Charter Schools, n.d., para. 2).

Chapter 2

Review of Literature

There has been substantial discussion in the educational field about the academic preparation of Latino students. U.S. public school education has been under scrutiny by pundits who believe it is not effectively preparing today's diverse youth population for tomorrow. Evidence from test scores suggests that Latino students, in particular, are lacking a quality education in U.S. public schools. It is critical to increase academic achievement for Latino students because they are the largest, fastest-growing ethnicity minority group in the United States (Passel, Cohn, & Lopez, 2011). Educators must act to improve instruction and curricula so it provides opportunities for students to think critically with service-learning pedagogy.

This review of literature examines the research on service-learning pedagogy, as well as ways in which to increase critical thinking skills among middle school students. The population for this study is composed of middle grade Latino students. Presented in the review of literature and essential to understanding the purpose of this study includes a synopsis of the status on Latino education, Latino culture, and challenges often faced by a Latino student. Finally, the characteristics of charter schools are discussed to highlight opportunities for teachers and students to reap the benefits of service-learning pedagogy.

Limited research on school-based, service-learning pedagogy in classrooms with Latino students motivated the researcher to investigate the impact service-learning had on Latino students' critical thinking skills. While compelling research exists on service-learning pedagogy, there are scant studies proving its ability to increase academic achievement among minority students such as Latino students that face cultural challenges in U.S.

classrooms. Included in the literature review are widely known agencies that contribute prominent research to the field of secondary education, Latino education, service-learning pedagogy, and U.S. education reform. In reviewing literature that supports service-learning improving Latino middle school education, organizations such as the United States Department of Education, Center on Education Policy, National Youth Leadership Council, Pew Hispanic Center, National Service-Learning Clearinghouse, and Center for Education became germane to the research.

Benefits of Service-Learning Pedagogy

Service-learning initiatives are pathways for teachers to enrich and expand their curricula to include hands-on experiences for their students. Service-learning involves hands-on teaching and learning strategies that can be adopted into a variety of subject areas. As an instructional tool, service-learning links curriculum content to real-life application. Through the service-learning process, authentic learning increases academic performance, teaches civic responsibility, and strengthens communities through community services initiated by students (Billig, 2002; Camino and Zeldin, 2002; Berger Kaye, 2009; Wisconsin Department of Public Instruction, 2001)

For purposes of this literature review, the definition given by Benson and Harkavy (2003) will be used to define service-learning as “an active, creative...[pedagogy] that integrates community service with academic study in order to enhance a student’s capacity to think critically, solve problems practically, and function as a life-long moral democratic citizen in a democratic society” (2003, p. 4). Based on its purposeful design, schools integrating quality service-learning policies and practices have fostered positive youth development and academic achievement among their students (Pickeral, Lennon, & Piscatelli, 2008; Berger Kay, 2009). These achievements have often been met when educators follow the guidelines of implementing a

quality service-learning program, must incorporate the following 8 standards: (1) meaningful service, (2) intentional link to curriculum, (3) reflection, (4) recognition of diversity, (5) youth voice, (6) mutually beneficial partnership, (7) ongoing progress monitoring, and (8) appropriate duration and intensity to meet community needs and outcomes (National Youth Leadership Council, n.d.). The eight standards provide the basis for students to authentically reach goals and for outcomes to reflect the objectives of the service-learning program (see Table 2-1). Research continues to prove additional components woven into service-learning projects and curricula also results in successful outcomes for students and their communities.

Table 2-1: Standards for Quality Service-learning

(1) Duration and Intensity	(2) Link to Curriculum	(3) Partnerships	(4) Meaningful Services
(4) Youth voice	(5) Diversity	(6) Reflection	(7) Progress Monitoring

Growing to Greatness 2008: National Youth Leadership Council. www.nycl.org

Educators interested in teaching youth learners to become civic stewards of change turn to service-learning pedagogy. Levine and Youniss (2006) suggest, "...because civic citizens are made, not born; it takes deliberate efforts to prepare young people to participate effectively and wisely in public life" (2006, p. 3). Even though service-learning is rooted in traditional volunteerism which is also referred to as community service, service-learning and volunteerism vary in practice and in definition. Volunteering for civic purposes is a selfless act that is often emphasized as charity (Barber & Battistoni, 1993) and does not require an educational connection. Teachers using a service-learning approach create opportunities to develop civic minded students while also improving their educational experiences and performance.

Service-learning can be used as a powerful instructional tool that prepares today's youth for tomorrow through academic and experiential education. This pedagogy has been identified as a way to promote positive youth development and community change (Billig, 2002; Camino &

Zeldin, 2002) through authentic learning. As a means to foster academic success, lifelong skills, and youth development teachers have integrated service-learning into their curriculums. Kirkham reported 97.7 % of teachers teaching through service-learning observed their students improve academically and decrease absentees (Wisconsin Department of Public Instruction, 2001). Additionally, Kirkham found that service-learning students learned more than what they would have through regular instruction such as new skills, additional knowledge, and a greater understanding of people and their communities (Wisconsin Department of Public Instruction, 2001). Selective research on the benefits of service-learning has been presented in theoretical and practiced studies as noted in the next two sections.

Theoretical studies

The theoretical foundation of service-learning is dated back to the pragmatism of John Dewey (1938). John Dewey, an educational reformer in the 19th and 20th centuries, proved that students learn best when they have opportunities to become involved in multiple experiential learning activities. Dewey's theories have materialized into what we know today as service-learning pedagogy. The theoretical basis for service-learning has evolved from the work of Dewey who originally linked academic learning and growth to educational experiences. Bringle and Hatcher (1999) cited three principles of Dewey's educational philosophy as the following:

*Education must lead to personal growth;
Education must contribute to humane conditions; and
Education must engage citizens in associate with one another (p. 181).*

A growing interest in service-learning has attracted many educators and school administrators for grades K-12, but is still not widely incorporated into the school culture. A need exists for public support of service-learning and opportunities to increase awareness and understanding of the pedagogy. In exploring the origins, impacts, and the increased support of

service-learning, Neal (2003) cited a report from Roper Starch Worldwide (2000). Neal restated that nine in 10 Americans support service-learning being included in their local school, after being presented with a definition of service-learning. Benefits of service-learning such as building skills that students need to succeed after high school graduation encouraged 66% of public respondents to support service-learning even more (Roper Starch Worldwide, Inc, 2000). Most challenging for advocates of the pedagogy seems to be gaining recognition for the term, service-learning. Recognition of the term, service-learning, was relatively low according to the results of a survey administered by Roper Starch Worldwide, Inc (2000). Only 9% of the survey participants knew a great deal about service-learning, 28% knew some, 22 % knew a little, and 38 % knew nothing at all (Roper Starch Worldwide, 2000). Advocates of service-learning must continue to draw attention to the benefits of service-learning for members in the public involved and uninvolved in the field of education. There is a wealth of information that exists suggesting service-learning is an effective tool for youth development among students in K-12. Research efforts must continue to maximize service-learning effectiveness but also build support among the public to increase resources and endorse diversity.

Interested in promoting effective service-learning strategies, National Youth Leadership Council (NYLC) has grounded service-learning in a framework model that includes a service-learning cycle. The framework used for this study observed schools that implemented service-learning projects using the service-learning cycle. Quality service-learning becomes highly robust when teachers use the service-learning cycle to establish and measure evidence of student learning. Adopted by a teacher at Camino Nuevo Charter School, the branded NYLC service-learning model was used to develop positive identity and cultural formation among middle grade students (Webster, Kawai, Lundy, & Martin, 2011). The cycle enriches learning due to a four stage process that requires students to engage in higher levels of reflective thinking and processing. Components of the cycle includes: (1) pre-service reflection, (2) reflection during

service, (3) post service-reflection, and (4) new application. Students are encouraged to think about what they know and examine issues raised by the projects in the pre-service reflection stage. The reflection during service stage helps teachers understand where the students are in the learning process before encouraging them to voice concerns and share feelings. Post service-reflection provides students the opportunity to assess the meaning of the service experience and explore future actions that may improve their community. Finally, the new application stage is an on-going process for students as they continue to use their new knowledge and skills to make decisions, solve problems, and grow as contributing members to their communities (Neal, 2003).

Practiced Studies

Compelling service-learning evaluations that highlight positive effects on students' academic and youth development through the use of quality standards indicate positive outcomes that reflect the objectives and goals of the program (Billig, Root, & Jesse, 2005; Blyth, Saito, & Berkas, 2007; Pickeral, Lennon, Piscatelli, 2008; RMC Research Corporation, 2008; Wisconsin Department of Public Instruction, 2001). Emerging patterns within the research reveal that service-learning is a great tool for positive youth development especially with two prominent standards of quality service-learning: (1) reflection (2) youth voice. Recent research has indicated that these two elements of quality service-learning are effective in developing the skills and confidence for lifelong learning and greater academic performance (Dauberman, 2010; RMC Research Corporation, 2008). Reflection opportunities prompt the use of critical thinking, analyzing experiences to better make meaning of situations, and serve as a tool to develop cognitive growth. Challenging students to reflect and think critically of their experiences creates a wide array of benefits for positive youth development (RMC Research Corporation, 2007). For example, students participating in a service program that involved reflection opportunities

reported experiencing increased self-efficacy and an increase in positive relationships with teachers (Billig, Root, Jesse, 2005). Billig, Root, and Jesse (2005) found that high school students that experienced more cognitive challenges within their reflection activities were more likely to have increased civic knowledge, positive civic disposition, and engage in and value school.

Additionally, service-learning initiatives value and support youth involvement and youth driven activities through encouraging youth voice. Empowering youth involvement through youth voice leads to self-efficacy (Dauberman, 2010), and self-pride (Ginwright & James, 2002). The authors of Points of Light Foundation (2001) argue that “youth voice in service-learning increases a sense of personal control and greater development of life skills including leadership, public-speaking, dependability, and job responsibility, less involvement in risky behaviors like drug use and juvenile delinquency and better academic achievement,” (Justinianno, Scherer, Johnson, Lewis, Swanson, Felix, 2001) Another study by Hart (2007) further supports the standard element, youth voice, associated with greater academic achievement. Hart reported results from his study showing that student voice and autonomy were likely to increase academic engagement and achievement in literacy-based service-learning projects. Studies similar to Hart continue to provide evidence suggesting that students can be motivated to become more active and engaged learners when given opportunities to explore and express their learning interests. Rather than today’s standardized teaching practices and testing, youth learners need authentic learning that empowers them to take ownership over their education through youth involvement.

Recent publications confirm that service-learning is a powerful tool towards increasing academic achievement—best done through activities that integrate academics and experiential learning (Billig, 2000; Billig, Root, & Jesse, 2005; Education Commission of States, 2008; McCarthy, 2008; RMC Research Corporation, 2007; RMC Research Corporation, 2008; Wisconsin Department of Public Instruction, 2001). One study that highlights the impact on academic achievement through service-learning is the Michigan Learn and Serve Study (Billig &

Klute, 2002). Fifth grade students demonstrated significantly higher test scores on the state assessment than their nonparticipating peers in writing and social studies (Billig & Klute, 2003). Another study conducted in Flint, Michigan reported more than two-thirds of participating service-learning students in grades 3, 5, 8, and 10 improved their academic achievement and better understood learning objectives (RMC Research Corporation, 2007). Furco (2008) reviewed research to understand the role of service-learning in enhancing student achievement. In examining the studies on service-learning, he found a substantial amount of evidence suggesting the pedagogy, when used as an instructional tool can provide students with educational benefits. These benefits include improved attendance, higher grade point averages, and enhanced preparation for careers, greater motivation for learning, and increased awareness and understanding of social issues.

As service-learning expands into classrooms across the United States, teachers are just as interested and amazed with the findings of this pedagogy. For example, a recent study Soslau and Yost (2007) illustrated a teacher's imitative to explore and witness, first hand, the benefits of the pedagogy. With guidance and support from Deborah Yost, a university professor, Ms Soslau, a fifth grade teacher, designed and implemented a service-learning program. To strengthen the evaluation process, Soslau observed and created an experimental and controlled group. In this study, Soslau involved two separate urban fifth grade classes in her study so she could compare the experimental group to the controlled group at the end of the program. Teaching to two separate classes with the same instructional material but engaging the experimental group with service-learning activities, Soslau confirmed service-learning to be a viable tool to increase student learning and motivation.

Teachers exploring new innovative teaching strategies continue to discover the benefits of service-learning pedagogy. For example, teachers working with Need in Deed, an organization that promotes service-learning by training and supporting teachers, are encouraged to transform

their teaching practices working with Need in Deed curriculum. Celeste Rodriguez, a 7th grade Stetson Middle School teacher, engaged her students in service-learning as a new teaching strategy (Need in Deed, 2009). Celeste describes how her teaching practice has been transformed through her involvement with Need in Deed:

“Through the project they [students] are learning the skills of how to listen to each other. We work in small groups, so they can talk among themselves, work together. They like it and they’re learning. Our benchmark scores have been skyrocketing” (para. 5).

Researchers in the educational field continue to report on positive experiences. The *Fact Sheets: Teacher Education and Service-learning* reported that teacher candidates that engaged in service-learning projects were better able to identify, relate, and understand students’ needs during the learning process (Billig et al, 2010). These teachers were more “likely to become sensitive to students’ developmental needs, understand the social-emotional learning that can serve to support academic learning for the students, and develop a more realistic view of the teaching profession, which in turn can help them to adjust and stay within the profession when they become teachers,” was quoted by Billig & Freeman and RMC Research Corporation, 2010. On-going research continues to prove that service-learning pedagogy is a valuable instructional tool for teachers to use to improve educational experiences for K-12 students (Anderson, Daidos, Granados-Greenberg & Rutherford, 2009; Hill-Jackson & Lewis, 2011; Root, Callahan, & Sepanski, 2002).

Latino Students in America

Quality service-learning studies have expanded to promote educators to adopt this pedagogy so students across America have an equal opportunity for positive educational outcomes. Service-learning pedagogy is an alternative instructional approach that provides students with on-going opportunities to practice critical thinking through reflection, integrate

youth voice, and capitalize on different ideas from classmates of all cultural and ethnic backgrounds. Studies prove service-learning to be effective in the classroom in several different contexts in grades K-12. However, there is very little research suggesting the pedagogy as a way to close the achievement gap of students, particularly Latino students, the largest and fastest growing minority ethnic group in America.

As the Hispanic and Latino population increases within the U.S., there is a growing need to enhance the educational experience of these students. According to the PEW Hispanic Center in Washington, DC (2011), the Hispanic population is a diverse group of people that are becoming the majority in many U.S. metropolitan areas. Fry (2006) reported that between the school year, 1993-94 and 2002-03, the total number of children enrolled in U.S. public schools increased by 4.7 million students, from 41.8 million to 46.6 million. Hispanics accounted for 3 million of those additional students, or 64% of the increase. Furthermore, the PEW Hispanic Center documents Hispanic children in 2008, ages 5 through 17, made up 20% of the student population in private and public schools, which surpasses any other ethnic minority population in the US (Pew Hispanic, 2010).

Given these demographics, U.S. schools need to adopt pedagogies such as service-learning that can effectively teach to a diverse student population. Current statistics report that only 14% of Latino students further their education to obtain a four year bachelors degree and even less acquire graduate degrees (Pew Hispanic Center, 2002). U.S public schools are encouraged to integrate new pedagogies that broaden the context of learning for Latino students. Creating opportunities for Latino students to receive a quality and enriched education must take precedence in today's American public schools.

Latino Education in America

The No Child Left Behind Act of 2001 (NCLB) has demonstrated poor results in effectively addressing the needs of low-performing minority students, specifically Latino middle grade students. No Child Left Behind supports a standards-based education and has greatly neglected the needs and challenges faced by the average urban Latino student. As part of the legislation, all students in America schools are to be proficient in subject areas by 2014. The performance of Hispanic middle grade students can be examined and accessed through the Nations Report Card. In 2009, the Nation's Report Card (Grade 8 National Results, n.d.) reported the average Hispanic (and its racial subgroups such as Latinos) eighth grade student performing below proficiency in reading levels. The average reading score for Hispanic eighth grade students was 249 while the proficient achievement level is a score of at least 281 (Grade 8 National Results, n.d.). On average, Hispanic 8th grade students also perform below proficient levels in Math. The average math score for Hispanic 8th grade students was 266, 33 points below the required 299 score needed to achieve at a proficient level (Nation Grade 8 Public Schools, n.d.). When compared to their White counterparts in 2008, Hispanic and Latino students also lagged behind in math and English scores by about 20% (RMC Research Corporation, 2008). In general, urban Latino students in middle school face many of the same academic challenges as do Latino students in elementary and high school.

Graduation rates for Hispanic and Latino students are about 56%, compared to 71% for non-Hispanic White students (RMC Research Corporation, 2008). A review of the demographic statistics on Latino students' education (PEW Hispanic Center, 2008; RMC Research Corporation, 2008; Nation Grade 8 Public Schools, n.d.; Grade 8 National Results, n.d.) confirms the need for schools to adopt strategies that are conducive to Latinos' learning styles. Given the standardized test scores and federal reports on Latino students, more effective teaching methods

are needed to improve education for Latino students. In order to address the academic struggles Latino students face it is important to understand the social barriers which many Latino youth face.

Barriers and Challenges faced by Latino Students

There is an extensive amount of literature that exists to identify a number of critical factors necessary to meet the social and educational needs of Latino students (DeGarmo & Martinez, 2006; Fry, 2003; Garcia-Reid, 2003; Garza Martinez, 2010; Lopez, 2011; Olivos, 2009; Verdugo & Flores, 2007). Significant factors that often contribute to Latino's lower achievement levels include English as a second language, limited educational resources, political issues, poverty conditions, cultural differences and additional contextual factors outside of the classroom (Behnke, Piercy, & Diversi, 2004; Fry, 2006; Garza Martinez, 2010; Lopez, 2011; Louvouezo, 2010; Marx, 2008; Olivos, 2009; Woolley, Kol, & Bowen, 2008). In and out of school factors have influenced school outcomes for Latino youth in the past and present years. For example, the findings from Woolley, Kol, & Bowen (2009) reported that "...programs building positive relationships between teachers and parents by promoting shared understanding and clear communication about educational goals and expectations for the students," advanced Latino educational outcomes in a U.S. school system. Based on Woolley, Kol, & Bowen's findings, it is evident that Latino educational improvements must first begin with policy makers enforcing, at the minimum, the following two conditions (1) school-based programs that assist ELL at becoming proficient in speaking English (2) affordable and accessible resources available to help teachers understand the role of culture in youth development and behavior to encourage culturally responsive teachers. Currently, however, the NCLB legislation does not enforce practices that help alleviate the challenges and barriers faced by a Latino student in U.S. classrooms. Since

NCLB is failing Latino students, it is necessary for students, parents, school administrators – including teachers, and the community to collaborate and find ways to strengthen education for Latino students.

Common trends in the literature suggest that there are four components necessary for Latino students to have a fair chance at achieving academic success. The four components include teachers that are culturally responsive (Goodin, Weber, Pearson & Raphael, 2009), English proficiency within the household (Verdugo & Flores, 2007), culturally responsive curriculum, and parents who are engaged in their child's education (Garcia, 1991; Gay, 2002; Jeynes, 2007; Lopez, 2001;). Weaving these four components into the nation's educational plan with the support of state and federal government, communities, and school administrators is sure to set the foundation for Latino students to achieve optimal academic success. The stratifying factor that helps set the foundation is centered on the notion of culture being integrated into the classroom. Culture is not only important to ethnic minority groups but affects how they learn.

Efforts to improve Latino education must begin with teachers adopting pedagogies that understand and appreciate the culture of the student and their family's ethnicity. Teachers are responsible for teaching to a diverse student population including students that come from various backgrounds with different beliefs, values, and practices. It is critical that teachers understand, respect, and capitalize on these elements to ensure that each student is maximizing their learning experiences. What many students and families experience is a lopsided power structure initiated by teachers as they set the parameters for student and parental involvement (Olivos, 2009). Teachers collaborating with their Latino students and their families to communicate a plan that works best for the student to engage in academic progress as an effective strategy would improve educational experience for Latino students (Gay, 2002; Jeffy & Cooper, 2011; Olivos, 2009; Woolley, Kol, & Bowen, 2009). Assuming that teachers are aware of the needs and current struggles of a Latino student; they are likely to find effective teaching methods that would be

most appropriate for a Latino student. Culturally responsive teachers that can infuse a responsive curriculum in their classrooms can build on students' cultural strengths for increased and diverse learning experiences (Jeffy & Cooper, 2011; Rothstein-Fisch & Trumbull, 2008; Rothstein-Fisch, Trumbull & Garcia, 2009).

Charter Schools as part of U.S. Public Education

As part of the education reform movement, charter schools are increasing in numbers as an alternative educational option for parents and students. The Center for Education Reform describes charter schools as being innovative public schools, designed by educators, parents or civic leaders, open and attended by choice, free from most rules and regulations governing convention public schools, and accountable for results (Center for Education Reform, (n.d.)). Under the umbrella of public education, charter schools have gained increased popularity as they begin to provide better educational experiences for minority students in K-12 (Center for Education Reform, n.d.; Paige, Rees, Petrilli & Fiegel, 2004; RMC Research Corporation, 2004; Viadero, 2009). Traditional public schools have met the needs of students over the years and supported them with a number of resources; however they have struggled to successfully educate minority students and those from low-income areas.

Charter schools serving a Latino youth population are more likely to deviate away from traditional academic approaches in order to improve academic engagement and achievement for their students. Educational practices within U.S. public education should soon conform to reflect the many cultures, perspectives, and experiences of U.S. citizens. The low academic performance of Latino students in U.S. schools is presumed to be the result of standardized practices that are ineffective for today's largest, fastest growing minority population. Statements such as the one

below, from influential, powerful organizations that invest heavily in U.S. education suggest the reality that exists for Latinos in U.S. public schools is based on:

"[...] the relatively low performance of Latino students, who in less than a generation will comprise roughly three in ten American children, is an urgent issue. The nation's economic and social well-being will be compromised without efforts at all levels of government to develop policies to increase achievement for Latino young people."---
Center on Education Policy, 2010.

Evidence from the Center for Education Reform (2009) suggests that charter schools teach with innovative teaching styles to yield greater academic success for minority populations. Charter schools can exercise their autonomy to adopt an environmental setting that is favorable and encourages academic engagement among Latino youth. Additionally, charters often have the capacity to take a holistic approach to better serve Latino students through curriculum that is reflective of their cultural background and heritage as it is woven into the educational state standards content. Charters schools gaining recognition and popularity for raising Latino educational achievement levels will soon start to close the achievement gap seen between minority and majority student populations (Center for Education Reform, 2009; Porter Magee, 2007; Viadero, 2009).

Since their inception, charter schools were envisioned as laboratories of innovation that would offer new curricula and teaching strategies, eliminate burdensome red tape, and improve student achievement (Clark, 2002). With legal and political autonomy and flexibility, charter schools are public schools that have the freedom to develop their own mission. A charter school is categorized as a public school that may provide elementary or secondary education, or both, free of charge, to children whose parents prefer this option under the umbrella of public education. Each state has its own charter school laws, however; charter schools with high-quality expectations adhere to a predetermined definition. For purposes of this paper, the definition of a

charter school will reflect the one written into the, No Child Left Behind-Charter Schools Program Title V, Part B Non-Regulatory Guidance (U.S. Department of Education, 2004). The term ‘charter school’ means a public school that:

1. In accordance with a specific State statute authorizing the granting of charters to schools, is exempt from significant State or local rules that inhibit the flexible operation and management of public schools, but not from any rules relating to the other requirements of this paragraph [the paragraph that sets forth the Federal definition];
2. Is created by a developer as a public school, or is adapted by a developer from an existing public school, and is operated under public supervision and direction;
3. Operates in pursuit of a specific set of educational objectives determined by the school's developer and agreed to by the authorized public chartering agency;
4. Provides a program of elementary or secondary education, or both;
5. Is nonsectarian in its programs, admissions policies, employment practices, and all other operations, and is not affiliated with a sectarian school or religious institution;
6. Does not charge tuition;
7. Complies with the Age Discrimination Act of 1975, Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act of 1990, and Part B of the Individuals with Disabilities Education Act;
8. Is a school to which parents choose to send their children, and that admits students on the basis of a lottery, if more students apply for admission than can be accommodated;
9. Agrees to comply with the same Federal and State audit requirements as do other elementary schools and secondary schools in the State, unless such requirements are specifically waived for the purpose of this program [the PSCP];
10. Meets all applicable Federal, State, and local health and safety requirements;
11. Operates in accordance with State law; and
12. Has a written performance contract with the authorized public chartering agency in the State that includes a description of how student performance will be measured in charter schools pursuant to State assessments that are required of other schools and pursuant to any other assessments mutually agreeable to the authorized public chartering agency and the charter school.”

Charter schools improving education with service-learning pedagogy

A compelling characteristic within the charter school's definition is the flexibility to tailor curriculum content, design, and structure to meet the needs of their student body.

Supporters and founders of charter schools argue that this flexibility is helpful in increasing academic performance among minority students. Provided with the autonomy "to operate in pursuit of a specific set of educational objectives determined by the school's developer..."

(Center for Education Reform, 2004), charter schools can hone in on the needs of their targeted student population. Charter founders interested in closing the achievement gap for Latino students can do so by creating a mission that initiates innovative teaching techniques to meet specific educational needs for struggling Latino youth in public schools.

With greater autonomy than traditional public schools, charter schools can create new pathways for underperforming Latino students struggling in U.S. school systems. Charter schools with an interest and mission to improve Latino educational achievement and experiences, are encouraged to leverage their charter status to meet their goals and objectives. Given the power and accountability to become effective organizations that explore resources, tools, and innovation, charter schools have the capacity to improve the development of socioeconomically disadvantaged Latino student (Clark, 2002; Payne & Knowles, 2009; U.S. Department of Education, 2004; Viadero, 2009). For instance, a charter school can incorporate student and family counseling and English language learning programs to help students who live in immigrant households. Latino families are often seen as disconnected from school programs because of language barriers plus lack of familiarity with U.S. school culture. Charter schools can approach education using these resources to better serve Latino students. Most charters can introduce new pedagogies that are effective in teaching the subject areas and developing the important skills required for lifelong learning.

Service learning pedagogy and charter schools

Service-learning pedagogy is a powerful instructional tool that has been notably integrated into the mission statements of many charter schools. Applying the standards of a quality service-learning program in their classrooms, many charters have witnessed their students develop knowledge and skills through experiential projects. For example, Latino students engaged in a charter school service learning program became agents of change within their communities as they applied classroom content to address community needs (Martin & Webster, 2011). Charter schools have increasingly started to weave serve-learning into their mission statements as a primary instructional strategy to increase student performance (RMC Research Corporation, 2004).

The academic success of a charter school Latino student can be greatly improved through service-learning pedagogy as part of the charter's mission. Service-learning can bridge the educational gap as well as enhance the U.S. educational experience for struggling Latino students. Culturally responsive curriculum that is supported by teachers that accept and capitalize on diversity within the classroom can fundamentally transform a students' academic performance. Teachings with service-learning pedagogy create active learners through exploration and authentic learning techniques. Quality service-learning in charter schools should continue to foster academic success and develop the lifelong skills necessary to prepare our diverse population to address real problems within and outside the classroom.

Cognitive Development as a Result of Critical Thinking

Critical thinking is a vital development of lifelong learners in today's society. However, good thinking skills do not develop without the help of a teacher who encourages the daily use

and practice of critical thinking (Kay, 2009). Without the use of critical thinking, all students are limited in their ability to transition from Piaget's (2000) concrete to the formal operational stage of cognitive development during the middle school years. The concrete operational stage involves a child, ages 7 to 11, to begin thinking abstractly through the creation of logical structures that help make meaning of their situation. Beginning at ages 11 to 15, the preadolescent begins progressing to the formal operational stage where cognition has matured. The educational theories suggested by Piaget, dated back to the mid twentieth century, are still prominent and referenced by today's educators interested in linking cognitive development and critical thinking in adolescents. Brown and Canniff (2007) alluded to Piaget's theory as they classified students in the formal operational stage of cognitive development because of their ability to design and test hypotheses, engage in deductive reasoning, use flexible thinking, imagine intangibles, understand proportionality, generate alternative strategies, plan for the future, and reflect on their thinking processes. Fundamental for cognitive development as an outcome for the adolescent who advances from the concrete stage to the formal operational stage is their ability to use their critical thinking skills. But before these skills can be practiced, it is important to understand the role of thinking critically and how experts have chosen to define and redefine critical thinking.

Critical thinking is not easily defined nor is it simple to demonstrate what it means to be a critical thinker. In fact, it requires some critical analyzing and thinking before deconstructing the various, but similar definitions in the literature to articulate it as a suitable definition. Halpern (1998) presumed critical thinking is "...the use of cognitive skills or strategies that increase the probability of a desirable outcome." Whereas, Burden and Byrd (1994) categorized critical thinking as a higher order thinking activity that requires a set of cognitive skills. Trying to define critical thinking, Facione (2004) analyzed the Delphi study that included an international group of experts who were asked to define critical thinking through a series of questions. The experts concluded with the following consensus statement, "The ideal critical thinker is habitually

inquisitive, well-informed, trustful of reason, open-minded, flexible, fair-minded in evaluation, honest in facing personal biases, prudent in making judgments, willing to reconsider, clear about issues, orderly in complex matters, diligent in seeking relevant information, reasonable in the selection of criteria, focused in inquiry, and persistent in seeking results which are precise as the subject and circumstances of inquiry permit.” This statement suggests that there is a process involved in grooming a thinker to acquire traits a critical thinker possesses.

Many teachers aim to develop their students’ cognitive abilities by encouraging critical thinking, yet at most, one-third of eighth grade students advanced to the operational stage (Brown & Canniff, 2007). Thus, it is not surprising that the aspiration of having students develop cognitive abilities becomes challenging for the middle school teacher because students in a classroom are at different stages in the critical thinking process. Recognized by most teachers, children in middle grades are not gifted with critical thinking skills. Paul and Elder, (2000) made the remarks, “critical thinking requires the development of particular habits of thought--habits of thought that no one is born with. It also requires staged practice over an extended period of time.” In addition to their remarks, Paul & Elder indicated that individuals undergo a process which develops an effective critical thinker. Transpiring to a critical thinker requires six stages listed as followed: stage one: the unreflective thinker; stage two: the challenged thinker; stage three: the beginning thinker; stage four: the practiced thinker; stage five: the advanced thinker; and stage six: the master thinker. Advancing through the six stages not only promotes cognitive development but also allows the student to think critically, rigorously, and with reason inside and outside the classroom.

There is an abundant body of research on critical thinking independent of cognitive development. However, there is minimal research on recent studies confirming that critical thinking prompts adolescents’ cognitive growth. The results from an interdisciplinary program that promoted cognitive growth through critical thinking activities were reported by Brown and

Canniff (2007). Program objectives included preparing middle grade students for cognitive growth through educational, school-based programs that connected curricula to experiential learning, improvement in reading and writing abilities, developed a natural interest in the world and their place in it, and increased awareness and acceptance of dimensions of diversity. Following visits to local environmental centers, reflective activities, field trips, in class learning, and hypothesizing, designing, and collecting data for science projects infused a higher level of thinking for the sixth and seventh graders. Eighth grade students were encouraged to think more critically while given complete control over their eighth grade learning objectives. Testing their cognitive abilities, teachers challenged their eighth grade students to develop their own curriculum that included learning objectives, activities, assignments, and ways to be evaluated. Observing their cognitive development progress, teachers facilitated the process to ensure that state content standards were integrated into their curricula.

Curricula similar to the ones discussed by Brown & Canniff (2007) suggest that the acquisition of critical thinking skills is the result of cognitive development. Thus, educators are tasked with the responsibility of embracing a climate that is conducive to critical thinking through communication, social interaction, and ultimately teaching. Innovative teaching strategies that introduce curricula that orient toward Piaget's formal operational stage of thought and processing should be a critical element in today's education reform for all students. Committing to teaching with curricula that promotes critical thinking is central for creating a pathway for adolescents to become civically responsible and achieve academically.

Chapter 3

Methodology

The primary purpose of this study was to determine the impact of a service-learning program on critical thinking skills for middle grade Hispanic students attending urban charter schools. Specifically the study was designed to measure the effects a one year, school-based service-learning program had on middle school Hispanic students' critical thinking skills.

Through an initiative supported by the National Council of La Raza (NCLR), a two year service-learning pilot study was designed to address the need for more effective strategies to enhance Hispanic youths' educational experiences. Selected secondary data from the NCLR pilot study was evaluated to conclude whether Hispanic students' critical thinking skills increased as an outcome of participating in a service-learning program. The research question listed below helped determine if a service-learning program increased critical thinking skills among a youth sample from Oakland, California and Austin, Texas using a quantitative methods analysis.

The following research question guided the study:

Does a one-year, school based-service learning program improve critical thinking skills among underrepresented middle school, Latino students attending charter schools in an urban setting?

Source of Data

Interested in building stronger and better-educated communities for Hispanic and Latino families, in the 2009-2010 school years, NCLR initiated the service-learning pilot program. The pilot program involved three affiliate charter schools that implemented and tested a service-learning model. Secondary data was obtained, with permission, from NCLR and used for the

current study. As part of the NCLR pilot study students attending the two schools, Lighthouse Community Charter School and East Austin College Prep were evaluated before and after the service-learning program. The sample population for both schools included middle grade students who selected an advisory period or an elective leadership class. Service learning pedagogy used at both schools included the service-learning cycle established by the National Youth Leadership Council.

Population and Sample

The sample population included one-hundred and three middle school Hispanic students attending two charter schools. Of the one-hundred and three students participating in the service-learning program only the seventy-one students who completed both pre and posts tests were evaluated for this study. Twenty-one sixth grade students from Lighthouse Community Charter School located in Oakland, California and fifty seventh grade students who attended East Austin Prep located in Austin, Texas includes the entire sample population for this study.

Instrumentation and Data Collection

Pre and post data was collected using the Skills for Everyday Living Life Survey (Mincemoyer and Perkins, 2005). Skills for Everyday Living Life Survey includes a sub-skill set of questions used to measure critical thinking skills as shown in Figure 3.1. The sub-skill set is comprised of five questions used to measure youth's perceptions of their level of critical thinking. According to Mincemoyer and Perkins the expected Crohnbach alpha for the critical thinking sub-skill should be .72. The Crohnbach alpha for the critical thinking sub-skill in the current study was .70.

Responses to the survey questions were collected at the beginning of the 2009 fall academic school year and again at the end of 2010 spring academic school year. The youth participants attending class on the day the instrument was distributed at each school self reported their responses through the Turning Technologies computer based survey response system.

Figure 3.1: Reliability of Skills for Everyday Living Survey

Sub-Skill Set Questions for Critical Thinking	Crohnbach Alpha
I can easily express my thoughts on a problem.	.72
I usually have more than one source of information before making a decision.	
I compare ideas when thinking about a topic.	
I keep my mind open to different ideas when planning to make a decision.	
I am able to tell the best way of handling a problem.	

(Mincemoyer & Perkins, 2005)

Data Analysis

Data for both pretests and posttests were coded and analyzed using SPSS version 16.0. Summary reports included frequencies for paired t-test results from the pre and post surveys. Frequency distributions were completed for age and gender within and between both charter schools. Data analysis conducted on the construct, critical thinking, was examined to answer the research questions.

Chapter 4

Findings

The primary purpose of this study was to determine the impact of a service-learning program on critical thinking skills for middle grade Hispanic students attending urban charter schools. Specifically the study was designed to measure the effects a one year, school-based service-learning program had on middle school Hispanic students' critical thinking skills.

The following research question guided the study:

Does a one-year, school based-service learning program improve critical thinking skills among underrepresented middle school, Latino students attending charter schools in an urban setting?

A total of seventy-one service-learning students completed the pre and post critical thinking sub skill set. Service-learning participants were given a response category for each critical thinking sub-skill set question. The response category included a five point Likert-type scale designed to determine how often each participant used their critical thinking skills. Participants self-reported their perceived frequency of use for the construct using a Likert-type scale with the following response options: (1) never (2) rarely (3) sometimes (4) often (5) always. The answer to the research question has been determined by organizing the data into three categories involving an analysis of both schools together and each independent of each other.

Results for Lighthouse Community Charter School and East Austin College Prep

Figure 4-1 summarizes the significant change and the mean for students' critical thinking abilities before and after the program, and number of respondents for both charter schools. In the first row, Figure 4.1 shows the mean for the number of participating students that completed the critical thinking sub skill questions before program implementation. The average mean for students before participating in the service-learning program was 2.9. A 2.9 indicates that students reported that they rarely use critical thinking.

The average mean for students after they participated in the service-learning program was a 3.2. With an average of 3.2 for the participating students, a change occurred from rarely using

critical thinking skills to sometimes using critical thinking skills in their everyday life. When analyzing the responses from Lighthouse Community Charter School and East Austin Prep Charter School, students participating in the service-learning program at both schools showed a significant change ($p=0.043$).

Figure 4-1 Pre and Post Mean for Both Charter Schools

Critical Thinking Skills for Hispanic Service-Learning Student Participants			
	mean	n	sig. (2-tailed)
Pre Critical Thinking Skills	2.9	71	0.043
Post Critical Thinking Skills	3.169	71	

The sample population for both charter schools included one hundred and three middle grade, Hispanic students that participated in the service-learning program. The service-learning program involved sixty-six Hispanic students between the ages eleven and twelve, thirty-six students between the ages of thirteen and fourteen, and one student that was between the ages of fifteen and sixteen. As seen in Figure 4-2 the students participating in the program were mostly between the ages of eleven and twelve. However, note that not all student participants completed pre and post tests, therefore only seventy-one (Figure 4-1) participants were used to determine the impact of the service-learning program.

Figure 4-2 Ages of Participants for Both Charter Schools

Student Participants Categorized by Age	
Ages 11-12	66
Ages 13-14	36
Ages 15-16	1
Total	103

Results for East Austin Prep Charter School

Figure 4-3 demonstrates the statistically significant difference between the pre and post evaluation among the service-learning participants. Students participating in the service-learning program at East Austin Prep Charter School showed a statistically significant increase in their critical thinking abilities at the completion of the program. As seen in 4-3, the average mean for students before participating in the service-learning program was a 2.9. A 2.9 indicates that students reported that they rarely use critical thinking. However, 2.9 rounded to a 3 suggest that, collectively, there is a potential use of sometimes using critical thinking within the group of respondents.

The average mean for students after they participated in the service-learning program was a 3.35. Following the completion of the program, students reported using their critical thinking abilities sometimes. The change in students' critical thinking abilities shifted from rarely (but moving towards sometimes) using their critical thinking sometimes (but moving towards often) using their critical thinking skills. There was a significant change ($p=.006$) in the service-learning participants' critical thinking abilities at East Austin Prep Charter School.

Figure 4-3: Pre and Post Mean for East Austin Prep

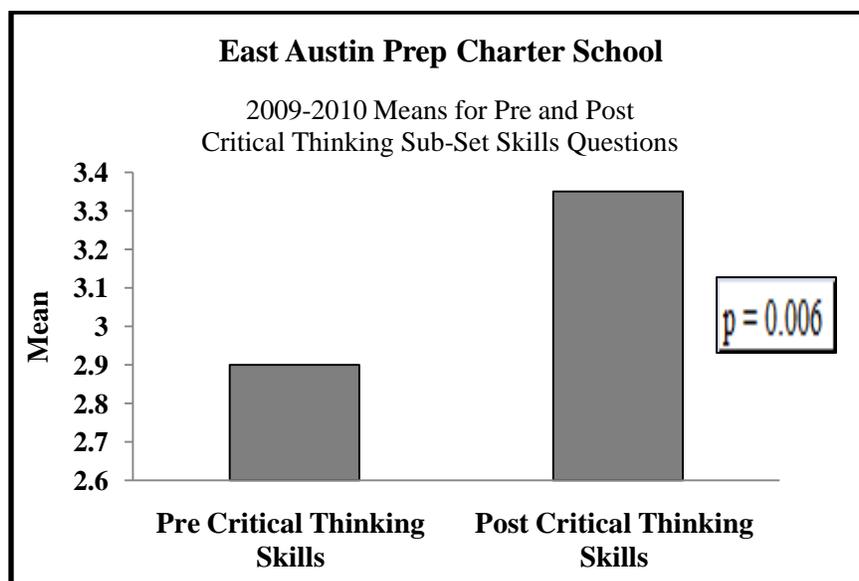


Figure 4.4: Pre and Post Mean for East Austin Prep Charter

Critical Thinking Skills for East Austin Prep Charter School			
	mean	n	sig. (2-tailed)
Pre Critical Thinking Skills	2.89	50	0.006
Post Critical Thinking Skills	3.35	50	

Results for Lighthouse Community Charter School

Figure 4.5 summarizes the responses from students at Lighthouse Community Charter School. Students participating in the service-learning program at this charter demonstrated a decrease in their critical thinking abilities. The average mean for students before participating in the service-learning program was a 2.89.

The average mean for students after they participated in the service-learning program was 2.73. Following the completion of the program, students reported using their critical thinking abilities less than they did before the engaged in the service-learning program. While the average response for both pre and post indicated that the students rarely use their critical thinking skills, the number of individual students that selected rarely increased after the completion of the program. There was no statistically significant change ($p=.454$) in the service-learning students attending Lighthouse Community Charter School.

Figure 4.5: Pre and Post Mean for Lighthouse Community Charter Schools

Critical Thinking Skills for East Lighthouse Community Charter School			
	mean	n	sig. (2-tailed)
Pre Critical Thinking Skills	2.9	21	0.454
Post Critical Thinking Skills	2.73	21	

Summary, Conclusions, and Recommendations

The primary purpose of this study was to determine the impact of a service-learning program on critical thinking skills for middle grade Hispanic students attending two urban charter schools. This study was designed to determine if service-learning pedagogy is a viable teaching method for improving critical thinking skills among middle school Hispanic and Latino students. Selected data was collected from a two year service-learning pilot study supported by National Council of La Raza (NCLR). Secondary data analysis was conducted on relevant data from NCLR to answer the following research question:

Does a one-year, school based-service learning program improve critical thinking skills among underrepresented middle school, Latino students attending charter schools in an urban setting?

The findings were reported on a sample population that included seventy-one service-learning middle school grade Hispanic students. The youth sample included fifty seventh grade students who attended East Austin Prep Charter located in Austin, Texas and twenty-one-sixth grade students from Lighthouse Community Charter School located in Oakland, California. The entire youth sample completed the instrument Skills for Everyday Living Life Survey which includes five sub-set questions that measure critical thinking skills. The instrument that was designed to increase reliability and validity of critical thinking (Mincemoyer & Perkins, 2005) was administered to the sample population before and after the nine-month, school-based service-learning program. Data for both pre and post tests was analyzed using paired t-tests. In analyzing the data, results were presented in three sections that included the following: (1) Lighthouse Community Charter School and East Austin Prep with a total sample size of 71 participants (2) East Austin Prep with a sample size of 50 participants (3) Lighthouse Community Charter School with a sample size of 21 participants. The low number of survey responses from

Lighthouse Community Charter School students resulted in a sample size too small to yield statistically significant results (Sirkin, 2006). Findings indicated that service-learning pedagogy can be used as an effective instructional tool to increase critical thinking skills among middle grades, Hispanic students attending a charter school in an urban community.

Conclusion

The results from this study suggest that service-learning pedagogy should be embedded in every schools five year strategic plan to strengthen public education for today's diverse youth population. Through service-learning initiatives minority groups such as Latino students can begin to learn through alternative teaching strategies that reflect their culture and varied learning styles; as opposed to the standardized teaching practices often seen in U.S. classrooms (Webster & Martin, in press). Additionally, the service-learning approach provides Latino students with experiences that can increase academic performance and critical thinking skills that prepare students to become agents of change within their communities (Kay, 2009).

Implemented by teachers that are culturally responsive, the service-learning experience offers youth the opportunity to explore and appreciate different cultures within and among each student in the classroom. Culturally responsive teachers engaging their students in service-learning activities encourage youth voice while integrating culture in their classrooms. As a result, students learn to value and appreciate each others' cultural differences. However, existing literature on Latino education suggest that too many non culturally responsive teachers are educating Latino students with little interest in helping dismantle the cultural barriers faced by struggling Latino students (DeGarmo & Martinez, 2006; Fry, 2003; Garcia-Reid, 2003; Garza Martinez, 2010; Lopez, 2011; Olivos, 2009; Verdugo & Flores, 2007). As suggested by Rothstein-Fisch and Trumbull (2008), it is necessary for teachers to begin using flexible

pedagogy such as service-learning so students, parents, and teachers can begin to capitalize on cultural differences. Teachers designing curricula and facilitating projects that are culturally relevant and appropriate allow for parental involvement and support that is needed to encourage student participation. Increased student participation and parental support are key elements for dismantling the barriers faced by struggling Latino students (Olivos, 2009). Latino parents can show support in their child's education through involvement in an environment that emphasizes culture and identity in a learning environment that involves youth driven service-learning experiences. Latino students empowered by their parents and teachers to lead and organize service-learning projects begin to take ownership over their learning experiences. As service-learning students begin to create new pathways for higher academic achievement they are also gaining knowledge in their academic subject areas and increasing critical thinking skills. Integrated into the service-learning process, critical thinking is what drives these students to explore, learn, and value each other's cultural differences. Critical thinking is also a key driver for lifelong learning in every aspect of an individual's life (Kay, 2009; Facione, 2004).

Motivating Latino students to use critical thinking skills can uniquely position this population to take ownership in their academic, civic, and personal pathways (Paul & Elder, 2000). Supporting and expanding service-learning in and among schools across the U.S. can provide a solution for the educational struggles faced by educators and Latino students, the largest and fastest growing ethnic minority group. Service-learning provides Latino students opportunities to explore their world while gaining foundational knowledge and essential skills such as critical thinking needed to become academic and civic leaders in their communities. Effective service-learning provides authentic learning experiences that lead to civic and academic achievements which will strengthen human capital within the nation. Developing the skills for Latino students to think at a higher level can certainly lead to competencies in the 21st century that, according to

Kay (2009), “differentiate the leaders and laggards on the international playing field –the arena in which every industry and individual in advanced nations competes today” (p.41).

Recommendations

Further Research

Findings from this study suggest the need for further research regarding the design of the evaluation methods. It is proposed that a service-learning study be conducted involving one class in one school with the same teacher providing an education to two separate classes. Both classes receiving the same instructional material but with each class having a different curriculum. Students in one class would be the recipients of a teaching style that involved service-learning pedagogy also identified as the experimental study. The other students in the separate class would receive an education using standardized practices and would serve as the control group. To further explore the effectiveness of service-learning a mixed methods study should be conducted. Data collection should take place at the beginning and end of the service-learning program using the survey instrument *Skills for Everyday Living Survey*. Including a controlled group of students that would receive an education with the same teacher at the school during the same time period, would allow for a comparison among both groups. Measuring the differences in the critical thinking skills of students engaged in service-learning and those who were not a part of service-learning activities would strengthen the claim that service-learning outcomes are linked to program goals and objectives.

Results from this study also suggest that future research focused service-learning outcomes involve monitoring for individual progress. Results from both charter schools and East Austin Prep Charter reported having a statistical significance, whereas; results from Lighthouse

Community Charter School did not yield statistically significant results. While it is evident that a low sample size can negatively impact the results of a study in statistics for social science, it is presumed that Piaget's theory could explain the variation seen within the results of this study. It is suggested that future service-learning evaluations include tracking for individual service-learning participant progress in relation to Piaget's theory of cognitive development (Piaget & Inhelder, 2000). Understanding the relationship between service-learning participants' age and progress could suggest an optimal age range for engaging youth in service-learning aimed to increase critical thinking skills.

Implications

This study has further implications for U.S. traditional and Charter public school systems in the U.S. who are interested in raising the bar for Latino education. The sample for this study was populated with Latino students. Based on the results of this study, it is recommended that service-learning pedagogy be implemented in a classroom with a diverse student population. Further service-learning studies should explore the effects of a service-learning program with a heterogeneous classroom that including a group of African American students, Asian American students, Hispanic students, Anglo students, and Native American. Proving that service-learning pedagogy is an effective tool for a classroom mostly populated with Latino students is encouraging. Still, educators must continue to determine how effective the pedagogy is when integrated in a curriculum used for a heterogeneous classroom which is often seen in urban, traditional public schools.

It is also recommended that mixed methods studies are conducted on service-learning pedagogy in two public schools to document implementation practices. Specifically, explore the

variation of implementation effects the outcome of students' critical thinking skills at the conclusion of the service-learning program

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