THINK, RECORD, REVEAL: STUDIO PROCESS ASSESSMENT AND
THE ARTISTIC THINKING IT REVEALS

A Dissertation in
Art Education
by
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ABSTRACT

This dissertation chronicles a year long, four-phase investigation into sixth grade students’ artistic thinking. The principal investigator, working as artist/researcher/teacher, sought to better understand her own art students and the artistic thinking that would emerge through intentional pedagogical assessment practices. Research on art making, art teachers’ practices, and the pre-adolescent learner merged with theory in assessment, multimodal literacy, and self-regulated learning to shape the research methodology.

By combining use of a formative studio-process checklist with the creation of a summative multimodal digital journal (MDJ), sixth grade students created a visual model of their use of the eight Studio Habits of Mind (SHoM). Documentation of the SHoM provided a rich and varied glimpse into the artistic thinking strategies students utilized when making narrative paintings. Analysis of the student-created MDJs proved beneficial in revealing both the nature of students’ artistic thinking, and in revealing the effectiveness of curricular design. The research data was analyzed for emergent categories within each SHoM, adding to what is known about the artistic thinking of pre-adolescent learners. Students’ tendency to display the SHoM was also analyzed through art making. The principal investigator merged her roles of artist/researcher/teacher creating Data Quilts based upon students’ use of the formative studio-process checklist and summative evidence found in the MDJs. The quilts served to literally make the data visible both to her and to her students.

Evidence from the study suggests three conclusions regarding artistic thinking; (1) the SHoM facilitate artistic discussion; (2) students value different aspects of the studio process; and (3) students can identify and express their artistic needs. Moreover, the MDJ proved an effective tool in assessing both student learning and classroom pedagogy. The MDJ enabled teachers’
photographic documentation of classroom art making to be combined with student reflection, creating a shared assessment of student learning.

Implications of this study suggest that wide-spread adoption of artistic thinking dispositions into pedagogical practice would help to create a broader understanding of students’ artistic thinking, and could facilitate conversations amongst educator’s intent on helping students to express themselves through meaningful artistic practices.
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Dedication

This dissertation is dedicated to: my dad, Tiney Moore McComb, who instilled in me a dedicated drive to use my talents in the service of others; and to my mom, Helena Ann (Taylor) McComb, who taught me that imagination and inspiration will light the way.
Chapter 1

Introduction

Try telling six graders that the images they make are not considered art. I made such an attempt, once.

It was a new school year and nervous sixth graders sat before me for their first day of art. I gave each student a pencil and a piece of notebook paper and directed their attention to the four numbered items on display at the front of the classroom. Students were instructed to look at the four items and to consider, in writing, whether or not each should be considered to be art. The four items included an original painting, an office stapler, a house plant, and a reproduction of the Mona Lisa. After students had a few moments to consider each item we then spent the remaining class time discussing our artistic conceptions and assumptions. As class concluded I began collecting student papers and made a casual comment to the class. “You know...some people believe you are all incapable of making art because you are children.”

Within an instant I heard gasps, huffs, chairs sliding, and hands smacking table tops. Then, over the cacophony of sounds, Brandon succinctly and forcefully shouted, “That’s bull!”

In the silence that followed, I realized that my casual remark was not a casual concept in the minds of students who believe that they do create works of art. The silence was interrupted by Laurie, who asked, in a quiet, almost cautious tone, “You don’t believe them Ms. McComb, do you?”

I reassured her, “No Laurie, I don’t.”

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1 This approach to talking about art was appropriated from a workshop I attended over 20 years ago. I regret that I cannot recall the name of the presenter.
Evolving Question

This study emerged through a three-step pedagogical journey, becoming the research and dissertation written within these pages. The journey began in 2005 when I decided to pursue National Board Certification. I begin this chapter by describing how my experience with National Board Certification, attendance at the National Art Education Association Conference in New York, and a summer workshop with teachers of English helped me to realize that I wanted to know more about sixth grade students' artistic thinking.

With the purpose of the study established, I define terminology used throughout the dissertation. An overview of the dissertation is provided as well as a discussion of the assumptions, limitations and biases inherent in classroom-based research. The chapter concludes, situating the study of sixth grade students' artistic thinking as significant component of research that examines art education classroom pedagogy.

National Board Certification

The National Board for Professional Teaching Standards, NBPTS, was established in 1987 in response to two education reports: *A Nation at Risk: The Imperative for Educational Reform* (National Commission on Excellence in Education, 1983); and *A Nation Prepared: Teachers for the 21st Century* (DeLeón, 2003). The responsibility of the NBPTS was to “elevate the teaching profession by setting rigorous teaching standards and for awarding advanced certification to the teachers able to meet them” (p. 2). Since its creation, the NBPTS has seen 82,000 teachers, working in 16 different subject areas (NBPTS, 2010a) within 25 different certificates (NBPTS, 2010b), voluntarily seek out and achieve the distinction of National Board
Certified Teacher, NBCT®. A NBCT® maintains certification for 10 years and may seek renewal of the certificate by providing evidence of continued employment and rigorous professional development.

Each of the 25 different certificates is designed around the five core propositions of National Board Certification:

Teachers are committed to students and their learning. Teachers know the subjects they teach and how to teach those subjects to students. Teachers are responsible for managing and monitoring student learning. Teachers think systematically about their practice and learn from experience. Teachers are members of learning communities. (NBPTS, 2010c)

Art teachers can obtain National Certification in one of two developmental areas: Early Adolescence through Young Adulthood (Art/EAYA), ages 11-18+; or Early and Middle Childhood (Art/EMC), ages 3-12 (NBPTS, 2010b), by completing a series of assessments designed to show tangible evidence of their ability to meet these five core propositions.

In becoming a NBCT® Art/EMC, I was required to complete a four-part evidence-based portfolio and a six-part online assessment, creating ten professional entries each scored to a rubric established by the NBPTS. Aggregate scores had to meet or exceed 275. Three of the four portfolio entries were submitted as part of a teaching portfolio requiring written reflection, student artifacts, and videotaped teaching to prove myself capable of exhibiting the nine standards² required of the certificate (NBPTS, 2010d). Entry 2 stated:

The focus of this entry is on how you help students connect the making of art to a broader understanding of art gained through interpretation and evaluation in the context of how and why people make art. The focus on assessment in this entry is for you to demonstrate

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² The NBPTS nine standards focus upon teacher knowledge in the following areas: goals of art education; knowledge of students as learners; equity and diversity; content of art; curriculum and instruction; instructional resources and technology; learning environments; collaboration with families, schools, and communities; and assessment, evaluation, and reflection on teaching and learning (NBPTS, Standards, 2004).
how you help students use formative assessment during the art-making process to assess and reflect on their own work or the work of their peers in order to increase their knowledge and application of artmaking processes. (NBPTS, 2004)

In examining this directive, I noticed that the NBPTS was requiring me to not only prove that students understand why art is made, but that I also prove that they understand and are able to reflect upon how it is made.

It was in completing and reflecting upon this task that questions surfaced, igniting a desire to understand questions such as, how do sixth grade students go about making art? What are they thinking as they make a work of art? Here I was, faced with being scored on my ability to provide “clear, consistent, and convincing evidence of [my] ability to facilitate student learning about how … art is made and to demonstrate how [I] involve students in the assessment of their own progress” (NBPTS, 2004). I had to wonder, what art making skills did the NBPTS hope to see? Would every art teacher completing this certification process present a different set of skills, or was there one set of how-to-make art strategies of which I was unaware?

Despite 20 years of teaching experience and two degrees in art education, I found myself at a loss. Making art works in various media had been the nucleus of my visual arts program for years. As an early disciple of Discipline-Based Art Education (DBAE), I had ample experience in considering why art is made, yet I had never been taught, nor been exposed to a specific set of skills that purport to represent how art is made. In fact, I came to believe just the opposite; that there is no one specific process for making art.

Art making was the domain of the visual artist and for me to learn more about that world meant interviewing local artists, taking evening art classes, attending local workshops sponsored by the state art education association, and swapping tips in working with various media with fellow artist educators. As an art teacher I was constantly on the prowl for new art processes to add to my repertoire; processes that could be folded into a studio-laden praxis. For years I had
been emphasizing to students the importance of working like an artist, offering tips and techniques of art making to assist them in this endeavor. These art making strategies, however, had always been based upon knowledge of my own art making endeavors; upon the artistic processes I believed would result in a strong visual product when applied to large groups of students.

Not knowing where to look for a specific national standard of artmaking in order to meet the requirements of this entry I did what any “reflective practitioner” (Schön, 1983, p.21) might do; I reflected upon my own art making practice. Through this reflection I determined four processes vital to my own painting practice: planning, the need to observe others, the ability to use a blended painting technique, and self-reflection. Planning helps me to set painting goals and also helps me to determine skills and materials needed to create my visual ideas. Observing the work of others, especially while they paint, helps me to improve my own skill and confidence in blending and moving color. Self-reflection helps me to determine if a painting is communicating my intentions.

Once I determined these four essential skills, the painting lesson was employed, and the skills were taught and documented. The NBPTS agreed that sufficient evidence had been provided; that I could teach students how art is made and thus granted me NBCT® status in December, 2006. While pleased to have met the NBPTS standards, I was not satisfied. A persistent need to further understand how it was possible to provide evidence that children could think like artists lingered. Three months later, a key signpost in the journey would be discovered.
During the National Art Education Association Conference in New York City a session was offered titled: *Learning to See Artistic Mind: Teachers’ Use of the Studio Thinking Framework* (Hetland & Sheridan, 2007). The conference presenters outlined what they called The Studio Thinking Framework, a Harvard Project Zero initiative that sought to define what occurs in a high school studio art class (Winner, Hetland, Veenema, Sheridan, & Palmer, 2006, p. 9). The 2001-2002 observation project, conducted in two Boston area high schools, with five art teachers, all practicing artists, filmed a total of 38 classes over the 2001-2002 school year (p. 10). Over the course of the study, researchers identified what they thought the five art teachers intended to teach (p. 10). These eight artistic dispositions which they called the *Studio Habits of Mind* included: Develop Craft, Engage and Persist, Stretch and Explore, Observe, Envision, Express, Reflect, and Understand the Art World (pp.11-16).

The presentation of this research data proved vital in confirming my own assessments of the artistic process. Develop craft, envision, observe, and reflect were, in essence, the same four dispositions I had included in Entry 2 for the NBPTS. While the remaining four dispositions had not been previously emphasized in the NBCT® process, it was easy to recognize them as components of classroom praxis.

The New York presentation concluded and I was charged and ready to go. I flew back to Columbus and started planning curriculum around the newly codified artistic thinking dispositions. Researchers at Harvard had provided the language for which I had been searching; they had determined that art teachers intend to teach eight Studio Habits of Mind, and I wanted to know what those habits of mind would look like in a classroom when working with sixth grade pre-adolescents.
During the 2007-2008 school year, I began work to develop a methodology that would enable students’ artistic thinking to be revealed. Working with 52 sixth grade students I attempted a traditional journaling approach. Students were encouraged to write down their thoughts while they made art work in class. This strategy was unsuccessful. Aside from the fact that a majority of students did not want to stop working to write down what they were thinking, I found that after teaching six classes a day I simply was not motivated to read what students had to say. The journals were passive, and as Raider-Roth (2005) found in her own research, students used dull, mundane, watered down language in an attempt to recall what they were previously excited about and what they thought I wanted to hear (p.6). As I continued to devise a methodology for showing the evidence of students’ artistic thinking, a final connection would be made.

Columbus-Area Writing Project

The Columbus-Area Writing Project (CAWP) is “an affiliate of the National Writing Project” (Columbus-Area Writing Project, 2010). Both projects seek to form school/university collaborations that encourage teachers avid about writing to become dynamic writers themselves. The premise is that if teachers can become passionate writers that their enthusiasm will transfer to their students (p.1). In June of 2008 I enrolled in a week-long CAWP course entitled, Multimodal Composition. This course, taught at The Ohio State University, was designed to show language arts teachers how to use multimodal composition strategies within their otherwise traditional English classes.³ Class participants created personal memoirs using Microsoft Photo Story 3, multimodal software which allowed participants to combine image, text, narration, and music in

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³ I was the only art teacher in the course.
creating a multi-sensory product. The multimodal compositions were played at the conclusion of the course, allowing participants to share their memoirs, to share their lives with the entire class.

Within the first hours of class I knew that multimodal was the method of documentation for which I had been searching. Often gauging my own levels of excitement and understanding of the learning process as an indicator of student success, I posited that multimodal composition of digital, rather than paper, journals would afford students a range of documentation modes from which to choose; that the viewing of multimodal digital journals would be exciting for both me and my students; and that the use of multimodal software would enable sixth grade students to reveal their artistic thinking. Equipped with the Studio Habits of Mind language, and with a methodology envisioned through multimodal composition, I began devising a research/pedagogical strategy that would seek to answer my persistent question. That strategy became manifest in the study that is the subject of this dissertation.

**Purpose of the Study**

The purpose of this study was to reveal sixth grade students’ artistic thinking; to shed light on *how* sixth graders go about making art. This was accomplished by designing curriculum that emphasized the eight Studio Habits of Mind and by encouraging students to assess, and document through a multimodal digital journal, the artistic thinking that occurred as they made a work of art in the school art studio. Combining the research aim with the methodology resulted in the asking of one formal process question (Maxwell, 2005, p. 75): What does studio process assessment reveal about sixth grade students’ artistic thinking?

The study was situated in the art room in which I taught primarily because the research question warranted it. The goal of the study was to develop a better understanding of my
students’ artistic thinking; therefore it made sense to create a “natural experiment” (Eisner, 2002, p. 211) situating the study into the classroom, with my students. I believed that conducting this study within the “natural setting” (Erlandson, Harris, Skipper & Allen, 1993, p. 16) of the art classroom, rather than in an artificially created setting, would provide an authentic glimpse into the everyday artistic thinking of sixth graders. Embedding the study within the structure of the school day was also intentional because I wanted the manner in which the study was conducted to be meaningful and relevant to classroom art teachers working “in the [art] room” (Seidel et al., 2009), within K-12 art education.

The number of students an art teacher encounters during a school year varies greatly. For instance, in my career the least number of students I have been assigned in a year is 225; the greatest is 850. With this teaching load in mind I wanted to develop an assessment strategy that would require teacher leadership, yet would allow and encourage participants to assume primary responsibility for documentation of their own artistic thinking. I considered student autonomy over their artistic thinking vital in creating a methodology that could be replicated and expanded in use with student populations greater than the subject pool. I also believed that the assessment of sixth grade students’ artistic thinking would be more authentic if created by the student. This study, then, was as much about devising a way to openly assess student learning as it was about revealing students’ artistic thinking.

**Definition of Terms**

In considering studio process assessment and what it reveals about sixth grade students’ artistic thinking it is important to begin by establishing an understanding of key terms and in

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4 As a middle school teacher in the 1980’s class sizes were at their greatest. 850 is an approximation.
defining how those terms were used within the study. These definitions are not intended to be
definitive; they simply explicate term usage within the parameters of the study.

**Student, Subject, Participant:** This study focused upon sixth grade students attending a
suburban Intermediate School, situated within an urban school district, in central Ohio. These
students came to my room for art instruction. I was their art teacher, and since they were my
students, there are times that I refer to them as such in the dissertation. While being students, the
individuals discussed in this dissertation were also consenting/assenting subjects who actively
participated in shaping both the methodology employed and data generated in the study. These
terms are used interchangeably throughout the study and in each instance refer to the same group
of people.

**Studio process:** Studio process refers to the range of physical and intellectual activity that
transpired while student subjects made art work within the sixth grade art classroom. Beittel and
Burkhart (1963) referred to this “total system of behavior which includes both an individual’s
working procedures and …goals” as the subjects’ working “strategy” (p.20). While the terms *art
making process* and *art making strategy* are considered synonymous with *studio process*, there is
a slight distinction between the terms. For example, while I modeled specific art making
processes, techniques, and strategies throughout the study, subjects were encouraged to adopt or
modify those processes to suit their own art making needs, thus adapting newly acquired skills
into their own studio process. Studio process in this sense became unique, to some degree, to each
study participant. The word *studio* was specifically used to generate an association to processes
used by professional artists, who work in a studio setting. The documentation of subjects’ studio
process sometimes occurred daily, and in some instances was sporadic. This series of physical
and intellectual actions, no matter how frequently documented, was the subjects’ *studio process.*

**Artist:** The term *artist* refers to three groups of people within this study: famous artists,
the art teacher, and study participants. First are those individuals famous for their skill and ability
to create artwork that others acknowledge as exemplary. Digital reproductions of five such artists were used as exemplars within the curricular learning progressions: Barbara Hepworth, Antonio Gaudi, Henri Moore, Marc Chagall, and Faith Ringgold. The second artist discussed within the study was me. As an artist-teacher I often discussed the reasons and rationales for my art making choices while instructing students in how to approach their own art making. This “think-aloud” (Kajder, 2006, p.67) strategy allowed me to deliver classroom instruction while also serving to model the artistic thinking dispositions being defined within the study. While it was understood that I was not a famous artist, my skill in handling materials and knowledge of the art world were acknowledged as valid by participants through my position as the school art teacher, and through completed paintings which I shared with the class. Finally, although students were not specifically called artists, they were repeatedly encouraged to think like artists. The SHoM were presented as a representation of how artists think, the inference being that students using the SHoM artistic dispositions could also consider themselves to be artists as well.

Art: Art is the expression of an idea through the use of visual media. Visual expressions created by five famous artists, and the art teacher, were shown to students to inspire, model, and motivate them as they began envisioning their own visual responses to two units of instruction. The first unit was planned according to what Popham (2008) called a curricular “learning progression” (p. 24): a sequence of skills and knowledge focusing upon, in this instance, the creation of organic form, resulting in the creation of organic ceramic sculpture. The second artwork was a gouache5 painting resultant of a second learning progression that focused upon the design and creation of narrative painting. These artworks, or projects, were considered to be art since their creation included a range of reflective expressive thought, skill, and intentional planning. Subjects did complete other art related assignments during the learning progressions as they worked to develop art making sub-skills and to understand “enabling knowledge” (p.25) that

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5 Gouache is an opaque watercolor.
would assist them in meeting the curricular aims of both units of instruction. These process-works were not considered art during the study; rather they were seen as steps toward assisting students in developing skill and in envisioning their final art work.

Assessment: At the moment a subject decided to document a part of the studio process through writing, photography, narration, or drawing, they were making a judgment, or evaluation that the thought, action, or current stage of art making was relevant to their own studio process. These assessments were made as students responded to formative and summative measures introduced into the study.

Artistic Thinking: In this study artistic thinking was defined as: The progression of insights, interpretations, reflections, and rationales a student expressed in making the multiple decisions that impacted the overall look and final design of an artwork. This range of thought has been identified as a group of artistic dispositions that art teachers typically attempt to teach children in a studio setting (Hetland, Winner, Veenema, & Sheridan, 2007, p. 7). These thinking dispositions, called the Eight Studio Habits of Mind, were observed as students worked to develop craft, engage and persist, envision, express, observe, reflect, stretch and explore, and understand the art world (p.7).

Any discussion of students’ artistic thinking refers also to their use and understanding of these eight studio habits of mind, otherwise referred to as the SHoM. Over the course of the study, participants attempted to document the SHoM as observable behaviors which became data that was then analyzed to reveal artistic thinking. The terms SHoM and artistic thinking are used interchangeably throughout the dissertation.

Multimodal: The methodology of this study relied, in part, upon multimodal composition, or “new literacy” (Kist, 2005). A mode is a means for delivering information to an audience. For instance, direction can be given to a class through oral delivery, or through written instructions printed onto paper. Traditionally information has been transmitted to students through a single
mode of delivery, or through single modes used in tandem. For instance, a student could learn the history of an artwork by listening to the teacher and by looking at an image of the artwork simultaneously. Each mode may have been prepared separately, yet they were used together to facilitate learning.

The development of digital based technologies, however, allows the delivery of information to be expanded to include multiple modes all working simultaneously, hence the term multimodal. These multimodal digital systems are referred to as Information Communication Technologies (ICT; Coiro, Knobel, Lankshear, & Leu, 2008, p.1). ICT products provide information to users through multiple modes of communication. For instance, when navigating a strong web page design, one can see images, read text, play a short film, and listen to an audio description, which thus creates a multimodal display of information. ICT products allow friends to stay connected on their favorite social network, allow photographs of children to be sent to grandparents over the phone, and enable travelers to obtain directions and observe travel routes without ever having to stop and ask for directions.

The use of this new literacy in the study was significant as reliance upon technology allowed students to focus not only on what they wanted to say, but also on how it was being said (Albers & Harste, 2007, p.15). By merging information that was stored and created in multiple modes students created compositions in which they moved beyond using only alphabetic text and began to include “… images… color, [audible] words, music and sound” (Takayoshi & Selfe, 2007, p. 1) with the text. In this study Microsoft Photo Story 3 was utilized to create student multimodal composition that included writing, photographs, drawing, narration, and music.

*Digital Journal*: Multimodal compositions students created are referred to as multimodal digital journals (MDJ) throughout the dissertation and were analyzed to determine the artistic thinking study participants revealed. The MDJs created in this study differ from a traditional journal in two ways. First, the MDJ was not made on paper. Rather, it contained a series of digital
images, digital text, and digitized narration that was either imported into or created utilizing a Dell computer housed in the school’s computer lab. Secondly, unlike a traditional journal, the MDJs created in this study were not portable. Students could not carry the journal with them and write down a thought or make a change whenever it occurred to them.\(^6\)

When talking to subjects engaged in the study their MDJs were called *movies*. The term movie was used with students primarily because it sounded more exciting to create a movie than it did a MDJ. Also, because students were accustomed to watching movies tell stories, it was hoped that linking the creation of a MDJ to the idea of creating a movie would facilitate students’ understanding that they were telling the story of their art making or studio process. Throughout the dissertation, I use the term MDJ instead of movie because it best represents what the multimodal composition is, and dissuades confusion in thinking that the movies were made with video camcorders. They were not. All MDJs were composed in the school computer lab using Microsoft Photo Story 3 multimodal software.

**Overview of Research Methods and Data Analysis**

This study was conducted in the art room and transpired over one academic year. A “naturalistic” (Eisner, 2002; Erlandson et al., 1993; Hubbard & Power, 1993) methodology was employed because the relationship between the researcher and subjects within such a framework best matched the one already shared between me and my students. A naturalistic approach was also deemed least disruptive to the school schedule allowing the study to be seamlessly folded into classroom praxis. Since “naturalistic research design remains tentative until it is implemented” (Erlandson et al., 1993, p. 68), the design afforded me the opportunity to make

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\(^6\) Technology such as the Apple iPad, just released, would enable students to create multimodal digital journals at anytime; anywhere they can carry the small device.
changes to the study in response to students as they worked to document their artistic thinking strategies, “on their own terms” (p. 132). Allowing for the teacher-student collaborative interactions that typically occur within the classroom, naturalistic inquiry affirmed a shared influence between me and my students upon the study, recognizing that “to get to the relevant matters of human activity” that I must also “be involved in that activity” (p15).

Digital multimodal composition was utilized to engage sixth grade students in documenting the thoughts, decisions, and actions taken while making art during their regular art class. This goal was achieved through the design of four pre-planned phases. The first two phases (P1 and P2) functioned as a pilot study within the study, helping to shape both the research methodology and the digital journals created in the final two phases (P3 and P4). Theories in assessment (Beattie, 1997, 2006; Dorn, Madeja, & Sabol, 2004; Heritage, 2007; Popham, 2008), multimodal literacy (Albers & Harste, 2007; Duncum, 2004; Kadjer, 2006; Kist, 2005; Takayoshi & Selfe, 2007), and student self-regulated learning (Boekaerts & Corno, 2005; Heward, 1980/2003; Hughes, Therrien & Lee, 2004; Mastropieri & Scruggs, 1987; Alberto & Troutman, 1982/2006) shaped the structure and methodology utilized in the study.

Theory in artistic thinking (Cunliffe, 2005, 2008; Hetland et al., 2007) shaped the content of formative and summative measures used to document students’ studio processes. Formative data collected in this study was derived from students’ self-determined response to a studio-process checklist (Appendix A) initially designed by me and later modified for use through collaborative class discussion. The revised studio-process checklist (Appendix B) served both as a research instrument and as a research finding as the final form of the instrument was derived through use and revision occurring within the study. Subjects were directly involved in creating, sorting, and assessing formative documentation which they placed, at their discretion, into summative multimodal digital journals. The text, narration, and images included in these digital
journals served as a formal assessment of students’ artistic thinking and were evaluated for evidence of the eight Studio Habits of Mind, SHoM (Hetland et al., 2007).

The summative MDJs created in the final phase were analyzed at the conclusion of the study seeking to understand how the information collected in the classroom would be meaningful to the collective whole (Erlandson et al., 1993, p. 116). MDJs were transcribed, frame-by-frame, as text, narration, and image descriptions were “unitized” (p.116) and coded. Each unit of datum was analyzed; if suggestive of a SHoM as described on the formative studio-process checklist it was sorted into a Microsoft Word document labeled with the corresponding SHoM title, using the cut-and-paste function of the program. Once all journals were transcribed, and all instances of a SHoM found in the data were transferred to the corresponding documents, they were further analyzed for expected and unanticipated categories that would emerge from the data. Specific analysis procedures are discussed further in Chapter 4: Findings.

Validity

Conducting a study within the natural setting of a sixth grade classroom presented its own set of validity benefits and challenges. A benefit of conducting educational research in the school setting in which I taught was that I did not have to spend time prior to the study building trust with my study subjects. As the building art teacher I maintained a “prolonged engagement” (Erlandson, et al., 1993; Glesne, 1992/2006; Maxwell, 2005) with the students who participated in the study. Trust had been established the year before when working with the same students during fifth grade art class. In fact, since I had been working at the school for five years prior to the study, I also had built trusting relationships with subjects’ older siblings and parents. The close relationship shared between me and my students allowed students to trust my intentions in
wanting to know more about their learning. This trust was in place from the beginning of the study and grew as the year progressed.

Having a close working relationship with my students, however, presented its own challenge. It was critical that I worked so as not to unduly influence students with my artistic preferences. I had to work to make sure students were not doing what they thought I wanted (Raider-Roth, 2005), just to please me. It would be impossible in a school classroom to eliminate all teacher influence. I did, however, work to minimize the effect by keeping a detailed teachers’ sketch journal (Ernst, 1997), which served as a research journal. In this journal I kept detailed notes of students’ actions, students’ verbalizations, and my own thoughts related to student work throughout the study. This practice, common to qualitative study (Erlandson, et al., 1993; Glesne, 1992/2006; Maxwell, 2005), served as a reflective device for me to test ideas, write down observations and assumptions I was making throughout the study. Those ponderings played a major role in shaping the study as it progressed from P1/P2 into P3/P4.

The MDJs offer the strongest testimony to the validity of this study as they allowed students to, in effect, speak for themselves. While the exact format is not the same, the MDJs in this study can be likened to the Informant-Made Videos (IMV) produced in a study conducted by art education researcher Richard Lachapelle (1999). In that study Lachappelle compared informant responses to viewing works of art. In the first series, Lachapelle conducted personal interviews to ascertain how art experts and art novices would respond to works of art in an audio interview with the researcher. In the second, each informant was asked to use a video camcorder to create an Informant-Made Video (IMV) in which they responded to additional works of art. From this study, Lachapelle concluded that the IMV was “shown to be equal to the audio taped interview as a means of collecting verbal statements” (p. 242).

Like in the Lachapelle study, this study relied upon student-made MDJs to provide data. The advantage of these MDJs, as with the IMV, was that students controlled the content and how
it was presented. The MDJ provided “visual documentation” of students’ processes. Students could add “close-ups” in the form of cropped images to correspond to verbal statements (p. 243). By combining verbal, linguistic, and visual images the MDJ effectively spoke for the student, “producing a visual record of the subjects’ experiences [mostly] from the subjects’ point of view” (p. 244). Some photographs were taken from my point of view; however students had the last say in determining how those images would be used, if they were used at all. Lachapelle contended that:

Informant-made videos are ideally suited to situations where research goals make it desirable to share or relinquish control over the data collection process in favor of the research informant; this reduces the possibility of researcher bias and increases the cogency of the information collected. (p. 256)

As the MDJs were composed I continually diverted students’ questions back toward their studio-process checklist, attempting once again not to dictate how students had to respond. The only influence I exerted into the MDJs was in asking students to label them with a title and the students’ research number. I also was not the only adult in the room. One of the teachers M/W/H was also present and assisted in monitoring student work in the computer lab. These teachers assisted students with computer skill questions, or would assist in spelling a word, if asked. Otherwise, students worked alone, sometimes in tandem, to create the MDJs that are analyzed in this study.

In reporting the findings of this study it became easy to report the incidence of a SHoM in numeric terms. Maxwell (2005) would call this reporting of qualitative data in quantitative numeric terms as “quasi-statistics” (p. 113). Quasi-statistical reporting helped to see the data in new ways which allowed me to draw conclusions and make generalizations about this particular group of students. I use numbers and percentages to talk about my findings, yet make no claims that these percentages would apply to larger populations of students.
Assumptions, Limitations, and Bias

The greatest assumption made in designing this study was that children can think in artistic terms and that documenting their artistic thinking would be significant and valuable to the field of education. I assumed that it is possible to see this student artistic thinking in a visible way through the creation of MDJs. By selecting to use the Studio Habits of Mind as the basis of the studio-process checklist, I assumed that students would relate to those thinking dispositions, finding them useful to their art making process. I assumed that students would be able to demonstrate all eight SHoM dispositions in observable ways, albeit in varying degrees. The SHoM categories introduced to assess students’ artistic thinking framed, yet also constrained those conversations; thus the SHoM themselves became a limited component of the study.

The design of this study was shaped, yet also limited by my teaching schedule. In an ideal situation it would have been best to have students learn multimodal composing while simultaneously collecting studio process data. This approach, however, was not possible within the constraints of the normal teaching day. I was afforded the opportunity to work in teaching students to digitally compose during this study because during the 2008-2009 academic year, one class period was free in my teaching schedule every-other week during P2 and P4. Through the support of my building principal, and agreement from a literacy teacher affiliated with the study, I gained permission to use that time as part of the research design.

As students used the studio-process checklist to document their artistic thinking, I thought that there was bound to be discussion amongst students in determining what counted as evidence of a particular thinking disposition. I anticipated that this talk would be an exciting part of the study and that it could impact overall analysis. As the artist-teacher I was cautious, however, to make certain to lead discussion and solicit group consensus rather than to exert my own artistic bias into the classroom, and therefore into the study. My artistic opinions were valid,
useful, and necessary in the context of the study; however every effort was made not to force my artistic preferences upon study subjects. Use of the teaching journal and a willingness to be transparent to students helped alleviate this concern.

As a researcher functioning as the classroom art teacher to subjects engaged in the study, I had a stake in how students performed. I saw their success and struggles as my own, which made me fundamentally and necessarily biased. There is a distinction, however, between acknowledging bias in my determination to assist in ensuring student success and understanding, and in inserting myself so as to unduly affect the shape and outcome of student responses. Every attempt was made to avoid the latter. For instance, during P1, a student’s clay sculpture fell apart during the firing process. Rather than telling him what happened, I showed him the sculpture and asked him to explain what had happened. Immediately he knew that he had not properly scored his clay pieces during assembly. To ensure his success in the study, I gave him a chance to remake the sculpture. Through this exchange I allowed the student to assess his own work, yet also provided him the opportunity to be successful, on his own terms.

The aim of the study was to assist all subjects in understanding and documenting their artistic thinking in each of the categories defined in the study. Since I was not an outside observer, this was not a passive task. When I noticed a pedagogical disconnect between instruction and student comprehension, on-the-spot measures were taken to remedy the condition. Teacher bias also shaped the research question. Rather than asking if students could reveal artistic thinking I was determined to see what students’ artistic thinking looked like. I assumed from the outset that some form of artistic thinking would in fact be present.

\[7\] Scoring is a technique used to permanently attach pieces of wet clay together.
Significance of the Study

In his book, *The Arts and the Creation of Mind*, Elliot Eisner (2002) describes a series of thoughts that the arts promote, which has made his book one often used and quoted as a leading source for visual arts advocacy. Eisner also makes a plea for a more thorough, context specific agenda of arts-based research. In chapter nine he stated:

I have already described an array of thinking processes that the arts promote, but what are needed are careful studies of the specific cases of such thinking. What we need are empirically grounded examples of artistic thinking related to the nature of tasks students engage in, the materials with which they work, the context’s norms, and the cues the teacher provides to advance their students’ thinking. Such studies of process would help us frame tasks and provide forms of teaching that optimize the students’ cognitive development. (p. 217)

He continues explaining: “We need studies that pick up where Beittel and Burkhart left off in tracking the decision making in the creation of an art form” (p. 218). This study is an attempt to meet that research challenge. By setting up and executing a study within the constraints of a normal classroom setting, it was hoped that this study will shed light upon the artistic thinking of which pre-adolescents are capable.

The following chapters describe my quest to find the answer to the question, what does studio process assessment reveal about sixth grade students’ artistic thinking? Chapter 2 situates this study within the research community. Chapter 3 outlines the four-phase methodology, describing how the phases unfolded; Chapter 4 suggests strong evidence for students’ artistic thinking; and Chapter 5 promotes the inclusion of artistic thinking strategies in K-12 visual arts instruction by making the case for expanding research and assessment in pre-adolescents’ artistic thinking.
Chapter 2

Review of Literature

This research is about the artistic thinking that sixth grade students revealed as they documented their studio process. In this chapter, I discuss how theories in the three following areas were merged, creating the methodology used to reveal this artistic thinking: (a) assessment, (b) multimodal literacy, and (c) self-regulated learning. Before discussing those theories, however, it is important to consider research focused upon examining art making as a studio activity.

Understanding the Art Making Process

Most K-12 art programs center around studio art production and a review of the literature showed that attention has been paid to understanding the complexities of the art making process. When art making is addressed in the literature it typically applies to understanding one of six distinct populations: professional artists (Adams & Kowalski, 1980; Dorn, Madeja, & Sabol, 2004; LaChapelle, 1988, 1991; Wild, 1992); college art students (Beittel & Burkhart, 1963; Beittel, 1973; LaChapelle, 1988; Walker, 2004); adolescents (Emery, 1989; Graham, 2003); children aged 0-8 (Lansing, 1986; Burton, 2000, 2009; Tarr, 2008); art teachers' practices (Detlefsen, 2009; Dorn et al., 2004; Hetland et al., 2004; Madeja, 1967; Pletcher, 1972; Seidel et al., 2009; Winner & Hetland, 2008); and the self-reflective inquiry of the artist/researcher (Irwin & de Cossen, 2004; Milne, 2000; Sullivan, 2005; Swift, 2009). A relationship to my study can be
found in the research surrounding each of these six populations. However, since the study occurred in my art room with pre-adolescent students, I decided to focus the literature review upon art teachers’ practices and research related to pre-adolescents, deeming those areas of research most relevant to this study.

**Art Teachers’ Practices**

Art teachers’ methods and the impact of those methods upon high school students' art making was the subject of studies conducted by Stanley Madeja (1967) and Robert Pletcher (1972). Both studies appear to have been influenced by Beittel and Burkhart (1963) who had previously identified three art making strategies college art students used when making art: Divergent, Spontaneous, and Academic.

Beittel and Burkhart claimed that college art students who used spontaneous strategies of art making were good at problem solving; they were able to trouble shoot, adjusting their working processes while maintaining a fixed goal (p. 21). They concluded that students using divergent art making strategies worked differently. Students employing divergent work strategies maintained a constant working process, yet were able to discover and innovate throughout the process, thus allowing the goal of their art making to shift as new discoveries were made (p. 22). Both working strategies were favored in the Beittel and Burkhart study over the “academic” student, determined to be more “static” (p. 21) and inflexible in their art making approach, favoring realism, with a determination to capture the whole of what they saw.

Beittel and Burkhart (1963) attempted to break new ground in examining and seeking to articulate students’ art making strategies. They did not consider, however, the possibility that students’ art making strategies might differ as they approach new visual problems and artistic
media, especially those unfamiliar to the participants. They also implied, in reporting their findings, that the students who scored higher in a series of visual-verbal personality tests (p. 24) made better art. This claim, Beittel (1964) conceded, was premature and I would argue that it was simply wrong. My art room has been populated, over the years, with students who could make brilliant artwork, yet could not pass a test if their life depended on it. Nevertheless, the art making strategies Beittel and Burkhart defined became useful to a few art education researchers.

Madeja (1967) investigated the divergent art making strategy, seeking to determine if it could be further promoted in students through divergent teaching methods. His experimental study compared high school art students, of both high and low ability, by differing instructional methods administered during an “orientation period” prior to their art making (p.12). The divergent method “stressed the concept of visual awareness and utilization of one’s environment” as the basis for making design decisions based upon one’s unique perspective (p.12); while a convergent approach focused upon the elements and principles of design (p.12) to create more conventional art making solutions (p.10).

From this study Madeja determined that the artwork produced by talented art students improved in quality as a result of the divergent teaching methods. Likewise, art work produced by students identified as having less artistic ability improved with a more defined, convergent approach (p. 19). Madeja determined that his findings contradicted the prevailing philosophy that “open-ended Divergent kinds of art experiences [were] proper instructional methods for all students regardless of abilities” (p.19). Madeja recommended that art educators rethink their pedagogical strategies to include instructional methods designed for both the high and low ability student, making certain to include more structure for the less skilled art student (p.20).

I agree with Madeja’s recommendation, in part. Educators should be employing several approaches at once to best meet the varying structural needs of our students. I am cautious, however, to accept his characterization of high and low ability students. Instead, I would suggest
that all students have both high and low ability moments. For example, in my own practice, I have seen students with high drawing ability shift, and as they paint, begin feeling a sense of low ability, which can sometimes move them to tears. Likewise, students who despise two-dimensional work of any kind may find artistic prowess when they begin working with clay. Artistic ability and the pedagogical structure needed for students to be successful, then, is also based upon the type of media being used and a students’ ability to produce satisfying results in that particular medium.

While Madeja focused upon Beittel and Burkhart’s divergent art making strategy, Pletcher (1972) was interested in examining teaching methods related to both the divergent and spontaneous art making strategies. Pletcher made a comparison of the two categories conducting an experimental study examining the art making strategies of high school students enrolled in elective art courses in two separate rural schools. Participants were divided into four instructional groups, two at each school, where participants engaged in either independent or dependent art making focused “upon drawing and painting the human figure” (p. 60). The independent group was structured around five teaching techniques: (1) Free Choice; (2) Student-Teacher Interaction; (3) Process Feedback; (4) Individual Differences; and (5) Group Interaction (p.60). The dependent study group was “teacher-centered…students were not free to choose an area in which to work in depth but were subjected to the same instructional content as the independent study group” (p. 60).

The Pletcher study was unable to make a statistically significant link between the type of teaching method used and its impact upon students predetermined to have spontaneous or divergent art making strategies (p. 61). He did suggest, however, that the “atmosphere provided by independent study [was] more conducive to learning for students with divergent strategies than those with spontaneous art strategies” (p. 61). This finding makes sense, in light of Beittel and
Burkhart’s assertion that students with divergent art making strategies are able to maintain a clear and focused process. Goal driven high school students can work independently.

It seems problematic, however, to assume that students enrolled in a high school art class would continue to work at quality levels without continuous and sustained quality arts instruction, no matter the artistic strategy. When teaching high school art, I found that students appreciated my interest in their art making. I also noticed that without some sustained adult interaction, students tended to lose interest in what they were doing.

What Pletcher did accomplish through his study was to raise an important question: “What is the primary reason for the emergence of one art strategy over another?” (p. 62) Beittel and Burkhart suggested that art strategies are causally linked to an individual’s personality. Yet, is it not also possible that one’s artistic approach would be dependent upon the nature of the problem at hand, upon the type of art instruction previously received, or upon the nature of the material being used and one’s experience with that material? These questions have remained unanswered by studies focused upon categorizing art making strategies.

While Madeja and Pletcher embraced Beittel and Burkhart’s effort to define art making strategies, others criticized their efforts. The most noted critic was Laura Chapman. A champion of K-12 public art education, Chapman (1964) read the Burkhart and Beittel study and found it to be biased, clearly favoring the spontaneous and divergent strategies over the academic (p. 26). Chapman contended that Burkhart and Beittel did not prove the working strategies cited in their study to be manifest in the products the art students produced, as claimed. Rather, Beittel and Burkhart seemed to prove, she contended, that the three art making strategies had been determined in advance through personality testing which occurred prior to the study (p. 27). Chapman contended:

Perhaps I interpret the earlier claims of the authors too literally; but it does seem to me that if the strategies do “manifest” themselves in art products, that a change in the art
product brought about through teaching should also (and manifestly) represent a corresponding change in the student’s strategy. (p.26)

Chapman’s assertion against the Burkhart and Beittel study was significant in advocating for K-12 art education, insisting that it not be judged as a banal, academic exercise. She also made a valid claim towards linking art strategies and teaching methodology to art products.

Beittel (1964) responded to Chapman’s criticisms admitting bias, even judgment stating: “Through these and other unsupported inferences, we have in our enthusiasm, transgressed against the law of parsimony, and have made value judgments concerning the Academic students, whose test scores and drawings were unlovable to us” (p. 30).

Whether or not researchers agreed with Chapman’s criticism is unknown. What is evident is that the idea of categorizing students' art making strategies as spontaneous, divergent, or academic was perhaps seen as problematic, evidenced by a lack of mention in subsequent art education journals. While I agree with Chapman’s assessment of Beittel and Burkhart’s study, I believe the tone of her criticism had an unfortunate result. In her attempt to defend the academic student, her criticisms appear to have halted an otherwise important line of study.

I commend Beittel and Burkhart for attempting to distinguish art making strategies; however I believe they went awry in attempting to create definitive categories to describe art making processes. My study focused upon students' art making process as a way to reveal their artistic thinking, yet makes no claims to categorize such processes. The goal was not to privilege one studio process over another. Instead, subjects were encouraged to work in ways that suited them, as long as they were working to achieve the goals set forth in the lessons presented. In this sense, it may be possible that I employed a semi-divergent teaching methodology. The process of presenting lessons and materials to students remained consistent across the two classes, yet I was open to student discovery and to the varied solutions students brought forward as a result of their art making endeavors.
A methodology significant to the Beittel and Burkhart (1963) study, and relevant to this one, is the method they used to gather images of students working. Using a still camera, Beittel and Burkhart took a series of timed “process-shots;” photographs taken every three-minutes to capture students' artwork during the art making process (p. 21). Beittel (1973) later refers to such photographs as “modes of mute evidence” (p. 24): evidence that could be collected without interrupting participants engaged in art making. Mute evidence, according to Beittel, constituted the use of film, television, audio recording and still time-lapse photography (p. 24). In describing his use of photographs to document the drawing process, he explained that “unlike film and T.V., [photographs] reconstruct the art process in a more abstract way, by way of time sampling and by way of excluding events outside the drawing” (p. 24).

I agree with Beittel’s determination that photographs taken of students working serves to abstract, or set aside, portions of the art making process for discussion and reflection. I also agree that when these photographs are used as tools of assessment, they are initially mute. These photographic images are “visual pronouncements” (Garoian & Gaudelius, 2004, p. 299) because they communicate information to a viewer, however, in themselves, they do not speak for the student. If viewing these images without student explanation or interaction, I become a voyeur to their art making processes. The images reflect what I think students are doing and not what students intend them to say. Encouraging students to combine photographs of their working processes with self-assessment of those processes, however, begins to free them from the oppression (p. 308) of teachers’ judgment. Shifting assessment practices toward students also serves to free me to more actively work with and come to better understand students’ artistic intentions.

In attempting to better understand students’ art making strategies, Beittel (1973) suggested art education researchers utilize “process feedback” (p. 62), an approach where students were shown images of themselves working so that they could assist in evaluating their
own art making efforts (p. 59). He also laid a foundation for the use of “student determined evaluative criteria” (p. 62). These two approaches offer methodological significance in understanding art teachers' practices.

Nearly thirty years later, another study was conducted seeking to understand art teachers' practices at the high school level. Researchers with Project Zero at the Harvard Graduate School of Education (Hetland et al., 2007) spent 2000-2001 observing five high school art teachers, in two schools, in an attempt to determine precisely what the art teachers intended to teach their students. Through direct classroom observation, interviews, and sorting of hours of videotape, their analysis concluded two major findings. First, that “studio arts teachers …organized space, time, and interactions in their classes by using variations on just three Studio Structures: *Demonstration-Lecture, Students-at-Work, and Critiques*” (p. 21). This finding is not surprising since this is also the teaching model most art teachers experienced while enrolled as college art students.

What was significant in the Project Zero study was the second finding. Researchers determined that the art teachers they observed used the three Studio Structures in order to teach eight very specific artistic thinking dispositions; what Hetland et al., called the Studio Habits of Mind, SHoM (p. 31). These artistic dispositions included a student’s ability to: *develop craft, envision, observe, understand the art world, stretch and explore, engage and persist, express*, and the ability to *reflect* within and upon the art making process (p. 31).

Simply stated, each artistic disposition identified by the Project Zero researchers was associated with observable aspects of the art making process. For instance, students who took care of materials and showed expertise in handling media were also developing the craft of art making (p. 33). Students who planned ahead were envisioning (p. 48), while a student discussion of what was observed showed an ability to see what others did not notice (p. 58). Students who experimented, or were willing to innovate exhibited an ability to stretch and explore (p. 74), while
those who buckled down to work through their frustrations exhibited an ability to engage and persist (p. 42). Finally, students were observed reflecting upon their art making as they questioned and evaluated (p. 65) their abilities to express meaning (p. 53) and connect their ideas to others in the art world (p. 79).

Prior to the publication of the Studio Thinking Framework, there existed no common set of artistic dispositions, or characteristics on which classroom art teachers could rely; no common language, apart from a discussion of practices, and materials, for which we could discuss, compare and evaluate students' art making processes. Perhaps this is why art teachers have so often reverted to teaching lessons focused solely upon the elements and principles of design. Knowledge of the elements and principles, and the language provided therein, has afforded art teachers the opportunity to communicate with one another in clear and experiential ways. This dialogue, however, has also served to steer our conversations toward art products and has limited our ability to articulate what we know about students' art making processes. A lack of such language has relegated our knowledge of art making practices to the realm of subjective hunches and intuitive impulses, rather than toward concrete and observable artistic dispositions that can be documented by both art teachers and students alike.

There are, however, two criticisms that could be made of the Project Zero study. First, one could take issue with researchers finding that the art teachers in their study used three studio structures in their teaching since they specifically sought out schools specializing in studio-based instruction. While the naming convention may be new, the fact that studio classes are taught through these three strategies is not. I contend that it was not an unexpected finding, and was perhaps something the researchers must have assuredly realized ahead of time.

Secondly, one could take issue with the SHoM themselves. Viewing their research through the lens of my own teaching practice, it seems plausible that all eight SHoM were indeed present. But, was that all? What about the concepts of creativity and originality; were they absent
from these studio classes? When Dorn et al. (2004) surveyed professional artists to determine what they most valued in the art making process, originality ranked top of the list (p. 36). Since the art teachers in the Project Zero study were also exhibiting artists, would they too have not emphasized originality, to some degree, within their own art programs?

These seem tenable, yet minor questions to ask of the study. The Studio Thinking Framework, for all it has to offer an art teachers' practice, has been met with resistance. Resistance not in challenging whether the habits of mind they cite are valid; that fact seems to have been accepted, as there is no evidence in the literature to dispute their claims. What has been questioned is the value in advocating for studio instruction at all. Jerome Hausman (2008), a noted figure in art education, reviewed the book, Studio Thinking: The Real Benefits of Visual Arts Education and practically dismissed it as a nostalgic throwback to the traditional studio class that has since been replaced by “new media and technologies” (p.14). Hausman suggested, in his review, that the book promises more than it can deliver and called for an expanded concept of “studio” (p. 14).

The mistake Hausman made in his review of the Studio Thinking Framework was in placing undue emphasis upon the studio. Art teachers, for instance, know that the art studio is an intellectually expansive place where ideas are expressed and transformed. The look, location, and equipment vary depending on the nature of creative work occurring within the studio space. In this study, for instance, the primary studio was a well equipped, dedicated art room, and at times, it was the school computer lab. The significant contribution Hetland et al. (2007) have made is to add to the studio of art teaching praxis a clear and expanded vision for the artistic thinking to be facilitated within that creative, instructional space. The SHoM provides language that students can use to consider, organize, and reflect upon their art making processes, language that art teachers can utilize in planning, observing, and assessing those artistic practices.
Studies of high school art teaching practices are not the only ones relevant to better understanding of art making strategies. Sydney Walker (2004), a university professor, introduced reflection into her teaching praxis. Concerned that art teachers often do not understand the art processes they teach in real and tangible ways (p. 6), Walker led pre-service art educators enrolled in her college studio class in reflective art making practices. She had students create art work which focused around a “big idea” of the students’ choice (p. 8). In reflecting upon this experience she wrote:

A crucial aspect of this art making experience was maintaining reflective documentation of the process as it evolved. Over the 10-week period, students recorded decisions, changes, and insights which shaped their art-making and thinking in regard to the art making process. Without this reflective documentation, an awareness of the conceptual nature of the artmaking process would most likely have been lost on many students. (p. 8)

Walker’s students gained meaning through the art making process and through reflecting upon the approaches they made in addressing a self-selected “big idea” (p.12).

Walker concluded, that to assist students in making meaningful works of art, art teachers need to include reflection upon art making processes as part of their pedagogical practice. Doing so, she suggested, would create more inventive artistic practices evidenced by students’ ability to delay closure, take risks, search for contradiction, and better tolerate ambiguity (p.12). With similar aims, I have worked to make my students aware of their artistic thinking, while Walker has attempted the same with those who would be their teachers. Walker used reflection upon art making to assist students in understanding the conceptual notion of the big idea; whereas I emphasized the inverse, using a lesson progression utilizing one big idea to assist students in focusing upon their art making practices.
Pre-Adolescents

There are few scholars who have been interested in the art making strategies of pre-adolescent students; those aged 10-12. Textbooks such as Lowenfeld’s *Creative and Mental Growth* (1964/1987), Churchill’s *Art for Adolescents* (1970/1971), and Chapman’s (1978) *Approaches to Art in Education*, each offered some insight into the “average expectancies” (Michael, 1986, p. 39) of this aged learner. Brent and Marjorie Wilson (Weider, Wilson, & Wilson, 1977) helped to shift the discussion of children’s art making to their making of culture. Lee Emery (1989) discussed the benefit of the pre-adolescent belief in art making processes; while Joseph Amorino (2009) reawakened artistic expression in a slightly older population, high school adolescents.

Lowenfeld was most noted for his work with children, children with disabilities (Michael, 1981), and for his text, *Creative and Mental Growth*, first published in 1947. Lowenfeld valued the process of making art over the product and considered the development of children’s individual artistic processes the central aim of art education in schools (Lowenfeld & Brittain, 1964/1987, p.11). To facilitate this goal, Lowenfeld worked to make art teachers more aware of the various stages children were likely to develop through, characterizing six stages of artistic growth: The Scribbling Stage, ages 2-4; the Preschematic Stage, ages 4-7; the Schematic Stage, ages 7-9; the Gang Age, ages 9-12; the Pseudo-naturalistic Stage, ages 12-14; and finally, Adolescent Art, ages 14-17 (p. 37).

During the Gang Age, Lowenfeld claimed, children begin to realize that they are members of society. Children begin to associate with one another in groups, and begin seeking the approval of these social groups over that of adults (p. 306). This development manifests itself, according to Lowenfeld, in the pre-adolescent desire to focus upon realism in drawing; not a realism that seeks to capture a photographic depiction of reality, but a sense of the real as in the
emotions, memories and observations that become real to the child (p. 308). Lowenfeld and Brittain stated that:

One of the greatest needs of children during this period is to find themselves, to realize their own power, and to develop their own relationships within their own group. They need to discover their own sincere relationships to the environment and to the people, objects, and materials that make up this environment. (p. 342)

Viewed within the context of this study, the environment in which students can develop this discriminatory power over their art making relationships exists within the art classroom: Classrooms where as students sincerely learn, discover, and document the complex array of thoughts and decisions connected to their art making, they begin to realize, even see the power of their own artistic thinking.

Angiola Churchill (1970/1971) focused her text, *Art for Adolescents*, exclusively upon children in grades 5, 6, and 7. Influenced by Lowenfeld, she too discussed the role gangs\(^8\) play in helping children to learn about themselves, characterizing child groupings as “improvised schools” whose purpose is to facilitate the “emotional weaning” of children from their parents (p. 23). She described this aged learner as being interested in the facts and reality of the “physical world, about themselves, and about their relationship to others” (p. 32). Churchill encouraged art teachers to allow students to have input in designing art projects (p. 63) and encouraged art teachers to engage pre-adolescent learners in “the creative process of self-appraisal” (p. 177). She stated that:

Assessment of performance and growth must come as much from [the student] as from the teacher, whose role is to clarify individual pupils’ ideas, ambitions, and goals, along with helping them develop the skill to proceed. (p. 178)

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\(^8\) The term *gang* was used to refer to a group of similarly-minded children. In the 1970’s, this term did not possess the negative connotation currently associated with gangs who perpetuate violence.
Churchill claimed that the art teacher plays a vital role in helping pre-adolescents to “sustain and judge [their] own work” (p. 179). She believed that students’ future artistic development could be positively affected if teachers would help students to become more aware, that as they create art, that they are “appraising every minute, censoring, discarding, obliterating, [and] beginning again – a creative routine that grows in depth and sensitivity the more it is carried through” (pp. 178-179). Two of the activities Churchill recommended to promote self-appraisal were used in this study; the creation of a journal (p. 189), and photographs of student work-in-progress (p. 190).

Laura Chapman (1978), like Lowenfeld, used her text, *Approaches to Art in Education*, to characterize students’ artistic development. Rather than describing children’s mark making at specific stages, however, Chapman envisioned an art education that sought to develop in children a sense of personal fulfillment, an awareness of artistic heritage, and an awareness of how art could serve society. She outlined this vision, suggesting ways art teachers could couple general knowledge of children and how they typically think and behave at various grade levels, with an art making process that consisted of three stages: the inception of an idea, elaboration and refinement of that idea, and the execution of the idea into media (p. 45).

Chapman noted that, often, those reaching pre-adolescence begin to have what she called a “crisis of confidence” (p. 187) as they experience an artistic disconnect between the skills they possess and the ideas they wish to express. One way art teachers can assist students in working through this crisis, she suggested, is by helping them to “master” at least one particular medium; to learn effective strategies and shortcuts that could be perfected through practice (p. 192). The implication is that the confidence gained from this mastery would enable pre-adolescents to develop their own working strategies, even their own artistic style (p.190) as they seek to tackle more complex processes and ideas (p.191). With greater confidence, Chapman contended that pre-adolescents “can begin to use the criterion ‘What did I learn?’ to judge their experiences”
and, she believed, that this practice could occur without continuous prompting from adults (p. 194).

Chapman’s text was instrumental in helping me to adjust from learning about pre-adolescents to actually working with pre-adolescents early in my teaching career. In those moments when I was grappling with my inability to reach a particular student, I could rely upon her insights to help me to see the student more objectively. She helped me realize that my role in helping pre-adolescent learners is to assist them in developing their artistic confidence.

As Lowenfeld, Churchill, and Chapman worked to categorize student development, Brent and Marjorie Wilson (Weider, Wilson, & Wilson, 1977) entered the discussion. With empathy for the adolescent learner the Wilsons were concerned that art educators were becoming dependent upon the fixed idea that students must progress through specific stages of development gained only through direct experience. They suggested, in contrast, that the “iconoclastic” (p. 30) drawings of adolescent learners not only emerge from experience, but also from their perceptions and experiences with graphic depictions created by others (p. 33). Teenagers, they observed, were copying and appropriating images from the world around them and uniquely adapting, repurposing, and elaborating upon them to create meaning for themselves (p. 33).

Brent Wilson (2005) has called this teenage propensity to draw outside of school the “first pedagogical site” (p. 18): a place where children can draw free from adult judgment and constraint. He envisions the art room, as the second site, and speculates about a third pedagogical site where “adults and kids collaborate in making connections and interpreting webs of relationships” (p. 18). While I agree with Wilson’s premise, I believe his generalizations go too far in assuming that teacher-student collaborations do not currently take place in school art rooms. Advocating for such collaborations, however, as new or different, could help art teachers to envision a pedagogy that relies upon mutual respect and a common understanding of artistic practices.
Post-graduate students affiliated with Latrobe University in Melbourne pursued another avenue to better understanding the pre-adolescent learner. They suggested that a belief in the value of artistic processes may be just the catalyst needed to overcome this “crisis of confidence” to which Chapman referred. Emery (1989) described a year long study in which a class of 35 children was observed. The children, aged 10-12 years, were each given visual arts instruction as part of an “Arts Bath” initiative (p. 237). Ten children from the class were then treated as case studies. The study determined that pre-adolescent artistic production was not only influenced by peers, but that it emerged through a continual negotiation in transforming students’ ideas into representations that could hold up to influences of the socially interactive environment in which they were working (p. 239).

The notion that pre-adolescents are influenced by their peers is not an unexpected finding and is supported by Lowenfeld and Churchill, as previously discussed. What was unexpected, however, was the role belief played in artistic making and thinking (p. 241). Belief, defined as a “willingness to step inside the artistic process” (p. 241), was deemed significant to those students possessing a “capacity to persist with tasks and…to display pleasure for artistic making and thinking…as satisfying work” (p. 241). This belief, or artistic empathy, is what helped students to negotiate between their ideas, their peers, and the artistic choices they wanted to make in representing those ideas (p. 241).

Emery described characteristics of students who had developed empathy for artistic making and thinking. The pre-adolescents could see and sense that the process of making art was, in itself, satisfying work (p. 241) and to that end, those students preferred to make formulas rather than follow them (p. 242). They realized that artistic purpose was something to work toward, rather than something present from the beginning (p. 243). Students understood that “expression involved a meaningful search for qualities which showed how experience was lived, felt, and understood” (p. 247), which caused students to make a “cyclic” recommitment to the process,
providing momentum for students to continue working (p. 245). Students unable to develop such empathy for the art making process were observed resorting to “borrowed, imitative ideas” (p. 245).

Emery sheds light on how students attempt to engage in art making and thinking with, and sometimes in spite of, their peers. In negotiating this space he concluded:

The product then cannot be the result of mere self-indulgent action, but becomes an appropriate and meaningful process within a given context. Belief is thus personal and shared. It is for this reason that the child shows her work to her parents or teacher for approval; for approval is a stamp of shared belief. (p. 248)

Emery does not address the fact that while some students may develop artistic empathy in representing the world the way it is to them, that in art classrooms children must also often contend with perceptions of the way things ought to be. I worked in this study to break students free from this tendency. Study participants were encouraged to trust their own artistic instincts and judgments. Rather than seeking my approval before making a decision, I encouraged students to share what they had done after having made their own artistic choice, or, if needed, to consult with me or their peers when they needed assistance in making a decision. Students knew that, whether sharing decisions, or requesting a consultation, artistic decisions would have to be made by them, rather than by me.

Joseph Amorio (2009) led his students in making artistic decisions. As a teacher/researcher Amorio used an Artistic Impetus Model to motivate 20 adolescent males enrolled in his studio art course (p. 219). His “sensory-based method of teaching” (p. 228) showed students how to take a sensory visualization activity of “a person I don’t see any more” (p. 224) through emotional, expressive, and kinesthetic processes with the aim of translating their ideas into unique and meaningful paintings (p. 219). Amorio’s pedagogical efforts clearly showed that adolescents developed artistic thinking. Participants in his study connected their ideas to
others (p. 226), developed a “dramatically heightened” (p. 227) ability to envision their ideas, and developed not only studio skills, but personalized ways of using the skills they acquired (p. 227). Amorio argues that his study proves that adolescents can experience a “re-enlivening of authentic expression” (p. 214), through a more artistic pedagogical approach.

Previous research focused upon the artistic lives of pre-adolescents suggests that 10-12 year olds are disposed toward investigating the complexities of the art making experience, in wanting to think about how it all works, and in believing themselves capable of authentic artistic production. These same students are able to reflect upon their own practices and can even assist in documenting their own learning.

**Assessment**

Knowing that I would be asking students to engage in long-term assessment of their art making processes, I turned to the literature to determine how research in assessment might impact the design of the research methodology. Prior to this study, my own work with assessment had been mostly teacher-directed, and generally limited to summative assessments.

Gruber and Hobbs (2002) confirmed my knowledge that, “historically, the field of art education has not emphasized assessment” (p.13). For instance, the topic of assessment was simply not addressed in my undergraduate art education program, and through continued teaching I soon discovered that art teachers do not like to talk about assessment. Art teachers resist assigning students concrete grades. They become defensive when administration suggests they teach shared concepts and will almost walk out of the room if told they must use a particular artistic medium in their curriculum, even if a change could result in improved instruction. This “love-hate relationship” (p.16) between art teachers and the idea of assessment exists, as Gruber
and Hobbs suggest, because while art teachers are taught to value and promote expressive practices, they are rarely offered any advice on the “technical procedures” for evaluating such practices (p.15).

Donna Kay Beattie (1997) sought to remedy this situation through publication of her book, *Assessment in Art Education.* There she defined assessment as “the method or process used for gathering information about people, programs, or objects for the purpose of making an evaluation” (p. 2). This documentation, as evidenced in the book, can take any form, however in art classes it generally takes the form of traditional or electronic portfolios, journals, tests, quizzes, essays, checklists, completed artworks, or any combination thereof, all providing information to assist art teachers in assessing student learning. These assessment tools are often used by teachers to “diagnose student needs” (Bensur, 2002, p. 19) and are useful, when viewed at the conclusion of a lesson, in providing summative information which can then be used in evaluating classroom instruction (Beattie, 1997, p. 104).

These evaluations can change programming, assist student learning, and often do correlate to the assigning of a grade. Grades are an essential aspect of classroom instruction as they serve to communicate student progress to parents (Guskey & Bailey, 2001, p.51). Guskey and Bailey, leading experts in grade reporting research, stated that;

In essence, grading is an exercise in professional judgment. It involves the collection and evaluation of evidence on students’ achievement or performance over a specified period of time…Through this process, various types of descriptive information and measures of students’ performance are converted into grades or marks that summarize students’ accomplishments, usually in reference to specific criteria or standards. (p. 9)

Grades can take the form of traditional letter grades, or they can be converted to numeric indicators that correspond to more descriptive grading rubrics. Rubrics look different from letter grades; however they are often used the same way. For instance, students readily understand that
a 4 on the rubric will translate to an A on the grade card. Grading, however, is not assessment. Assessment of learning, whether systematic or arbitrary, occurs prior to assigning of grades or the reporting of data. The assessment of learning, when done well, helps art teachers to know what is or is not occurring in the classroom. Lowenfield did not believe in grading student’s art products. He suggested, rather, that:

   It would make more sense to grade the teacher, for it is the teacher who has been able to motivate the child to do excellent work, or has not been able to motivate some youngsters, or who may have failed to involve a few youngsters at all in the art activities.

   (Lowenfeld & Brittain, 1964/1987, p. 175)

While Lowenfeld assuredly would have objected to both standardized instruction and standardized testing, he did believe that learning in art could be measured. Gruber and Hobbs (2002) pointed out that, “Lowenfeld… suggested that progress indicated learning, and that progress could be measured” (p.13). While there has been some focus upon art making processes in research, much of the discussion surrounding assessment in art education has focused upon the product of artistic practice, rather than the process of making.

   *Formative assessment* is assessment that occurs during the learning process. Like summative assessment, formative assessment relies upon gathered evidence for making an evaluation. The difference is that formative assessment occurs during the teaching/learning process and allows for immediate feedback (Beattie, 1997, p. 101). Formative assessment is conducted to gauge student learning to determine what curricular adjustments or modifications need to be made. Teachers proficient in formative assessment identify students not responding to the initial teaching strategy early in the process and then devise alternate teaching scenarios to better assist the student in meeting the aim of the lesson. Formative assessment is not a graded process; rather formative measures are employed to assist in the learning process.
Art teachers make informal, or formative assessments, daily, every time they scan the room to determine which students are working well and which ones need assistance, especially in handling new materials. Formative assessments occur so regularly, I contend, that many art teachers are not even aware they are engaged in the practice of formal assessment. Art teachers easily design product criteria, but could use assistance in devising ways to develop what Guskey called “process criteria” (quoted in Gruber, 2008, p. 41). For instance, art teachers could assist students in creating “formative portfolios [to] document the level of involvement, learning, and thought processes that have taken place over a period of time” (p. 44).

W. James Popham (2008) envisions formative assessment as a means for transforming education at four levels, beginning with the teacher, then the students, the classroom, and ending with a “schoolwide adoption” of the practice (p. ix). He described what could occur in the classroom, suggesting that:

Formative assessment represents a complete change in the culture of a classroom, shifting the overriding role of classroom assessment from the means to compare students with one another for grade assignments to the means to generate evidence from which teachers and students can, if warranted, adjust what they are doing. (p. ix)

Popham (2008) explained that formative assessment “is a process rather than a test” (p. 8), “a process used by teachers and students during instruction that provides feedback to adjust ongoing teaching and learning to improve students’ achievement of intended instructional outcomes” (p. 5). Making reflections and judgments during the art making process can assist students in “determining how to adjust their learning tactics” (p. 29) as they engage in the art making process. Popham contended that formative assessment has the potential to become the catalyst that spurs both teachers and students to routinely make evidence-based decisions about learning (p. 142).
Research conducted by Seidel et al. (2009) supports Popham’s position. Seidel et al. conducted a study, *The Qualities of Quality: Understanding Excellence in Arts Education*, through Project Zero at the Harvard Graduate School of Education (p. 46). They concluded that “thinking deeply about quality—talking about it, worrying about it, continually revisiting ideas about its characteristics and indicators—is essential both to the pursuit of arts education and its achievement” (p. 49).

Realizing that the process of achieving quality was a necessary component in attaining quality led Seidel et al. to recommend that adults begin having “explicit conversations” with students “about the decisions they are making” (p. 49). They suggested that teachers begin to realize that “students' art experiences are the primary product” and that there is value in the “documentation of learning in action—recording in various ways what actually happens in classes, and discussing those experiences in reflective, analytic ways that include consideration of how to improve the experience for everyone involved” (p. 50).

A group focused specifically upon developing ways to document student learning is the Making Learning Visible (2010a) research project, a Harvard Project Zero and Reggio Emillia Collaborative. One of their three goals is to determine “how observation and documentation can shape, extend, and make visible children’s and adults’ individual and group learning” (para. 5). The ability to capture formative learning moments helps teachers to understand what students are learning, and is essential in helping students to reflect upon the decisions they have made, as well as the ones yet to come.

An additional art education researcher, Mary Stockrocki (2005), has claimed that “everyday assessment of classroom learning is crucial because it provides feedback directly to students in the process of their learning, more than mere measurement or rubric ranking does” (p. 15). She urged educators to engage students in these reflective practices, especially during pre-adolescence, when students are interested in understanding how things work (p.15).
These researchers each make a compelling case for formative assessment. As art teachers recognize value in documenting students’ art making processes, the question will arise, how is this done? Traditional portfolios are adequate; however, with expanded computer capabilities, students can now create multimodal products which allow them to combine written reflections, with digital photographs, drawings, video footage, etc. Stanley Madeja (Dorn et al., 2004) suggested that this type of electronic portfolio, or journal, is significant as it provides a visual model of what students are trying to communicate about their learning to a wider audience (S. Madeja, personal communication July 30, 2008). He explained that:

The modeling experience organizes data in one or more sense modalities into a coherent ‘whole,’ where a portfolio becomes the documentation of what has been learned over a defined time frame. Within that time frame, the [student] or the teacher determines the points of interaction in the information streams where the [student] can interpret or analyze the data or information collected …The portfolio becomes the record of that process, the [student’s] reflection, analysis, interpretation, and judgment of the process, and the record for determining what has been learned. (Dorn et al., 2004, p.55)

Dorn (2004) encouraged art teachers to be more comprehensive in evaluating the whole art experience, not just the end product. Dorn et al. (2004) suggested that when considering the art making process that art teachers rely more on the characteristics valued by professional artists as a starting point for their conversations with students. This recommendation was based upon a survey that Dorn et al. administered to art teachers, art students, and professional artists to determine what each group valued about the art making process. Their study found that the art teachers and professional artists surveyed had different aims in evaluating artwork. Art teachers most valued student artwork that showed evidence of the elements and principles of design, a use of space, and whether the student followed directions (Sabol, 2006, p. 7); whereas, professional
artists valued originality, growth, use of technical skill, and the development of personal expression in their own work (p. 9). From this study Sabol suggested that:

Art teachers…need to think more broadly about the purposes of their teaching and whether the outcomes of their teaching go beyond simply meeting the objectives of the lesson or curriculum standards and address the qualities of art making that make it unique;…art teachers might revise their list of purposes to include criteria more reflective of the purposes of artists…Such changes may positively impact the quality and content of art production at all levels of instruction and improve learning about art from mastering concepts and skills to creativity, critical thinking, problem solving, and personal meaning that art making involves. (p. 11)

As students employ contemporary documentation processes, they begin to develop what Marshall called (2008) a “strategic knowledge,” an awareness and understanding of the how of art making (p. 39). This is precisely the distinction Leslie Cunliffe (2005) made between procedural “know how” and declarative “know that” knowledge. He suggested that while students often “know that” about any number of topics, they rarely “know that” about themselves. Cunliffe asserted that “‘knowing that’ declarative knowledge also serves that most complex form of thinking described as meta-cognition, which allows a student to ‘know that’ about their ‘knowing how’ capabilities” (p. 205).

Research supports the assessment of artistic processes and suggests that the documentation of such formative processes may not only engage the learner (Sabol, 2004b, p. 7), but that such documentation strategies also provide a visual model that serves as evidence of student learning: Visual models, which in turn, become products for reflection themselves. The evidence to support these assertions is still forming; however, as will be discussed in Chapter 5, findings from this study provide an optimistic example of students who were able to become engaged in their own learning, and capable of communicating that learning to others.
Multimodal Literacy

A review of the literature in multimodal literacy shows that most researchers talking about the use of multimodal communication are language teachers. They are concerned, yet intrigued by the way the concept of literacy is shifting. In its simplest form, American literacy of the past focused upon learning to read and write by combining 26 letters into meaningful linguistic statements. Those possessing the ability to do this with a degree of proficiency earned the label, literate. This was literacy before the Internet and other, what Coiro et al. (2008) have called, Information Communication Technologies (ICT).

These ICT products provide information to users though multiple modes of communication (p. 1). For instance, when navigating a strong web page design, one can see images, read text, play a short film, or listen to an audio description, which thus creates a multimodal display of information. Children use ICTs daily when playing their favorite Xbox™ or Wii™ games, relying on multiple modes of communication to both understand and successfully navigate the games they play. As iPhones®, iPads®, Blackberrys®, and other ICTs infiltrate our daily lives, those committed to literacy research have started looking for ways to comprehend how these ICTs are currently impacting concepts of a new literacy.

The use of ICTs classifies literacy as new, according to Coiro et al., because with the speed at which the internet operates it affords the introduction of new concepts, new literacy technologies, able to reach populations on such a wide scale, faster than ever before. Coiro et al. state that, “no previous technology for literacy has been adopted by so many, in so many different places, in such a short period, and with such profound consequences” (p. 2). They claim that “[literacy] has now come to mean a rapid and continuous process of change in the ways in which we read, write, view, listen, compose, and communicate information” (p. 5).
Paul Duncum (2004) also views multimodality through a wide, cultural lens. Intrigued by the meaning making capabilities afforded by multimodal literacies, Duncum is interested in helping students to understand how global capitalists are utilizing multimodal communication to seduce them for their own gain (p. 262). He suggested that art educators need to “rethink” their “exclusive focus on all things visual” (p. 253), and instead, assist students in focusing upon what happens “between” the images and other modes of communication (p. 256). Duncum further suggested that while “the visual does exist as a mode of both representation and communication that is independent of the verbal” (p. 257), that it can also be nearly impossible to discern the meaning intended in the visual, without further explication (p. 252).

As new literacy theorists examine what they have called the “digital divide” (Coirio et al., 2008, p. 4) that exists between nations with full Internet access and those without, and the relationship this access has to global “economic, educational, and political opportunity” (p. 4), others have remained focused upon classroom pedagogy. Their research suggests that a pedagogical digital divide exists between students and teachers, a divide that could be bridged if teachers realized that teaching and learning, by their very nature, are multimodal acts (Jewitt, 2003, p. 83).

Albers and Harste (2007), authors interested in defining the art in Language Arts, explained that multimodal practice engages students in the material framing of ideas to produce meaning. The key dimension of this process, they suggest, is the design, the way students use what is available to them at the time they create their multimodal representations (p. 13). They explained that:

Design is one of the most important parts of multimodal expression because it encourages imagination, vision, and problem solving, when learners become the designers. In most school settings, teachers are the designers of the product, and students are the producers.
who try to create design that the teacher has in mind. When students are both designers as well as producers, strong principles of learning can emerge through design. (p. 13)

Albers and Harste found the use of this new literacy significant as its reliance upon technology allowed students to focus not only on what was being said, but also on how it was being said (p.15).

Carey Jewitt (2003) described research in which London students, year 10, used writing and drawing (C. Jewitt, personal communication, May 13, 2010) to display their multimodal understandings of the writing convention, character, while studying a visual CD-ROM version of Steinbeck’s novel, Of Mice and Men (p. 85). As she observed students access various components of the CD-ROM, she realized that what students pay attention to could give educators insight into students' understandings of what was being taught and learned. As art educators contemplate assisting students in moving between palettes and pixels, they might consider Jewitt’s claim that:

Multimodality…challenges the assumptions about learning…and the traditions embedded in educational assessment. The multimodal character of teaching and learning means that each student is involved in making personal sense of the combination of modes as they are organized in the classroom. The task before the student is to know what signs from this multimodal ensemble, or their experiences in the classroom, to include and what to exclude from their accounts in order to construct an appropriate response…for assessment. (p. 84)

Carmen Luke (2003) describes this shift from looking at text as a form of linear processing to one of “parallel processing” (p. 399), where individuals look for connections that exist between text, images, and sounds. She contends that:

in digitized knowledge and networked environments, critical understandings of the relations among ideas, their sources and histories, intertextual referents and
consequences, are as important if not more so than mastery, reproduction, and recombination of discrete facts, or units of information. (p. 400)

Luke’s perspective suggests that as students become more proficient in making intertextual connections that pedagogy transforms as well, as students move from collecting knowledge to connecting knowledge (p. 400).

Len Unsworth (2008) took this thinking further, devising categories that could be used as a form of discourse analysis when analyzing and discussing the information contained in multimodal products. He suggested three ways in which the information from one mode can relate to information presented in another: Ideational concurrence: what is represented in one mode is equivalent to that in another (p. 387); Ideational complementarity: what is represented in one mode may be different but complementary to that represented in another (p. 389); and Ideational divergence: the thought or idea represented in one mode differs, or runs parallel to the idea represented in another mode (p. 391).

Multimodal strategies are not without their pitfalls. Peggy Albers (2006) came to the following realization as she worked with pre-service teachers (PST’s), to investigate “the possibilities of multimodal curriculum design” (p. 96):

I find that PST’s become so enamored with multimodality that they can lose focus on the actual literature they were asked to teach. They wanted to integrate art into their planning, but linking this artwork with the literature sometime eludes them. (p. 96)

Teachers who employ multimodal strategies need to express explicit goals, directing students toward making focused expressions of meaning. Otherwise, the propensity for multimodal connections can become so endless that the production of meaning becomes lost.
Self-Regulated Learning

Both the formative and summative measures utilized in this study were implemented, based upon a review of literature that examined a learning construct researchers have called self-management (Heward, 1980/2003), self-monitored (Alberto & Troutman, 1982/2006), or self-regulated learning (Boekaerts & Corno, 2005; Hughes et al., 2004). These theories emerged through special education research, a field of study which seeks to define quality teaching practices able to assist all children in learning, especially the exceptional child (Heward, 1980/2003).

Self-management strategies are based upon the premise that children experiencing emotional and behavioral difficulties, whether temporary, intermittent, or chronic, have difficulty maintaining focus on academic goals in the classroom (p. 306). This lack of focus, Heward suggested, is actually the student feeling a lack of control over their circumstances, causing them to act out (p.306). He suggested that students could regain a sense of control, thus improving behavior, by learning to self-manage, to actively monitor behaviors as they occur, or to self-evaluate, by comparing their behaviors to a particular standard of expectation (p. 306).

Alberto and Troutman (1982/2006) also describe self-monitoring as a process of self-recording and self-evaluation in which students either “make a record” of their performance, or “compare their work to a standard” (p. 365). They further explained that students can make these notations at cued and/or noncued moments (p. 366). A classroom timer, for instance, could cue a student to pause to determine whether they were exhibiting the appropriate classroom behavior. Conversely, a student proficient in noncued self-recording is able to document their own behaviors as they occur. Data from either of these strategies can then be used to facilitate a discussion between the teacher and student regarding the documented behavior. Whether teachers
use self-managing or self-monitoring pedagogical strategies, emphasis for their use has typically been to eliminate disruptive behavior in the classroom.

Boekaerts and Corno (2005) and Hughes et al. (2004) approached self-regulation from a different perspective. These researchers advocated for the use of a combination of strategies that lead students in self-regulation that focuses on the positive behaviors teachers want students to exhibit, as well.

Hughes et al. (2004) described self-monitoring, self-evaluation, and self-instruction as strategies of behavioral self-management (BSM). BSM strategies are significant to educational practice because they employ the student in observing, recording, prompting, and evaluating their own classroom behaviors (p. 2). Common instructional components of BSM include: giving students a rationale for the behavior change, defining the target behavior, modeling the behavior for students, and allowing students adequate time to practice the behavior (p. 20). BSM can prove vital to art teachers who balance delivering studio instruction amongst an array of students with varied ideas and abilities. BSM strategies can help teachers gain a more complete, holistic view of student performance (p. 2). To better understand the significance of BSM practices, Hughes et al. reviewed 20 studies where BSM strategies were used with adolescents aged 13-18. Each study reviewed focused upon the use of BSM with students identified with learning disabilities and behavioral disorders (LD/BD). These studies were published in scholarly journals between the years 1981-2002 (p. 6).

Two findings from the Hughes et al. analysis are relevant to this study. First, they concluded that BSM has been proven to show increases in student productivity among those identified as LD and LD/BD (p.17). Productivity improved especially when BSM measures were geared toward student performance rather than student attention (p. 23). The Hughes et al. distinction is significant to this study, because students self-monitored a sequence of
performance, where each step was designed to lead students towards creating more complexity in their artwork. The art making required attention, but attention alone was not enough.

Secondly, Hughes et al. suggested that “students who monitored both appropriate and inappropriate aspects of their behavior had better outcomes than students who only monitored positive behaviors” (p. 19). This finding was also significant to this study. Although students' behaviors were not classified as positive or negative, some aspects of the SHoM would initially be seen as negative to students. Students were not accustomed to valuing their struggles. By documenting instances where they worked through frustration, a characteristic of the SHoM engage and persist, students would learn that those so-called negative moments are also a valued and necessary part of the artistic process. This Hughes et al. finding suggested that students would benefit by self-recording all aspects of the studio process, not just the positive ones.

Boekaerts and Corno (2005) are interested in knowing how self-regulated learning (SRL) can lead toward student development and acquisition of volitional strategies. Using the metaphor of a train, Boekaerts and Corno suggested that learning consists of two tracks running parallel to one another. The “learning” track is the one a student navigates when they “have access to well-refined volitional strategies,” strategies which become “manifested as good work habits” (p. 199). This track, the authors contend, is characterized by growth, intention, and an “awareness of and access to volitional strategies” (p. 206), the possession of which makes students “more likely to invest effort in learning” (p.199). The second track, perhaps more survivalist in nature, is one the student diverts to when they perceive a threat to their well-being, or to their ego (p. 203).

Put simply, Boekaerts and Corno contended that when students are self-engaged in meaning making activities for which they possess skill, a habit of use, and some degree of choice, that it was easier for them to stay focused upon learning; they became less likely to be thrown off track. They further suggested that rather than regulating undesirable behaviors, that students learn to regulate behaviors that will assist them in mastering the subjects they study. In developing
artistic thinking, however, I believe the framing of volitional strategy development is problematic when seen through the metaphor of a train. The notion of simply being on or off the track is too limiting.

Instead, an argument for students' acquisition of volitional artistic strategies might be better served by the metaphor of a roadway (S. Williamson, personal communication, May 4, 2010). While a student may outwardly appear to have been derailed, it is more likely that the artistically engaged student is changing lanes, checking out an unmarked side street, or stopping off at a roadside rest to expend frustration, change a tired idea or to replenish their intellectual resources. Within a roadway metaphor, effective teaching strategies form the road; some providing expressways to advanced learning; some providing thoroughfares to previous development; while others take a leisurely, yet more scenic view of ideas as they develop in the moment.

The train metaphor is also problematic for it separates a students' concept of well-being from the learning process. I believe that one’s sense of well-being does not run parallel to learning; rather it works in conjunction with one’s intentional desire to pursue meaningful learning goals. Actually, the learning situation itself, by the nature of the activity, can cause the focused, intentional learner to feel threatened, or at a loss, especially when breeching the threshold of new skill acquisition. This easily happens in art making when a student, focused and intent upon building height with clay, is suddenly faced with the reality of gravity. Consider, rather, that one’s harmonious well-being is a component of the fuel, the motivation that propels learners toward the next intellectual destination.

Boekaerts and Corno list strategies teachers have used to assist students in acquiring habits of volitional performance. One such strategy is the think aloud. The think aloud (p. 210) is a process where teachers pause when reading aloud to explain to students what they are thinking. The premise of a think aloud strategy is that students will become more self-reflective in their
own reading by mimicking the process. An example of the think aloud becoming a volitional strategy was documented by multimodal researcher, Sara Kadjer (2006).

Kadjer devised the visual think aloud (p. 67). Using multimodal technology Kadjer taught her students to combine text and images to document the sparks they had when reading Lois Lowery’s book *The Giver* (p. 69). Sparks, as she called them, were moments when students would think aloud about what they were reading. Kadjer described how Rai, a reluctant reader, was able to use one of Mark Rothko’s paintings, “Untitled—1969…to represent his understanding and thinking about fear” (p. 76). The visual think aloud enabled Rai to become more confident in his reading ability. When reflecting upon the visual think aloud Rai was able to claim, “[the visual think aloud] helped me to see what I was supposed to be seeing as a reader all along” (p. 78).

Kadjer contended that multimodal connections were essential to reading comprehension because “not only do student readers need to learn to develop these ‘mental movies’ from the words on the page, but they absolutely must explain their own storytelling, a process of constructing and communicating meaning for others” (p. 67).

An additional volitional strategy was modeled to students through demonstration-lecture. During this instructional time, I explained what I was doing, and why I was doing it. I also critiqued my own artistic efforts, in the moment as needed. Boekaerts and Corno (2005) suggested that this teaching strategy serves to “apprentice” students “to the inner workings of a discipline” (p. 218). This form of “reciprocal teaching” (p. 218) takes the think aloud one step further. After releasing students to work, I continued to think aloud about students’ art making processes while they worked (p. 218). In turn, students started to think aloud and share their art making practices with me, and with one another.

The review of SRL literature helped me to develop the theoretical position that SRL would provide a sense of purpose and encouragement in helping students to make volitional
choices from a range of artistic strategies, codified in the SHoM. Assimilating this theory with the literature surrounding educational assessment and multimodal literacy enabled me to envision a research methodology that answered the research question: What does studio process assessment reveal about sixth grade students’ artistic thinking? This methodology also points toward an *artistic pedagogy* where students work in public, think aloud, and where the assessment of learning is shared.
Chapter 3

Methodology: A Four-Phase Naturalistic Study

In chapter I describe the research methodology used throughout the study. Beginning with the rationale and design considered in employing a four-phase naturalistic study, I then describe the role of the researcher and participants within that framework. In the remaining pages of the chapter, each phase of the study is described as it was envisioned, employed, and reflected upon, with the final results published in Chapter 4 as resultant findings of the study.

Research Setting: A Sixth Grade Art Room

The study described in this dissertation was conducted during the 2008-2009 academic year at a fifth/sixth grade public Intermediate School situated in an urban school district in central Ohio. While the district is classified as urban, the Intermediate School is located in a more suburban area. The specific school name is withheld to maintain subject confidentiality and is simply referred to as the Intermediate School throughout the dissertation. During the year the study was conducted, the average daily student enrollment of the Intermediate school was 484; 96% of students were classified as White, non-Hispanic; 16.7% were classified as Economically Disadvantaged; and 13.3% were identified as Students with Disabilities (Ohio Department of Education, 2009). I was employed as the school’s only art teacher for the sixth consecutive year.

The Intermediate School art room was selected as the research site primarily because the research question warranted it. After all, the goal of the study was to develop a better understanding of my students’ artistic thinking; therefore it made sense to situate the study in my
classroom, with my students as participants. Erlandson et al. (1993) called such a study naturalistic inquiry since the study occurred within a “natural setting” (p.16) rather than one that was artificially created. As the school art teacher I had previously worked with each subject the year before, while they were fifth grade students. The natural setting of the Intermediate School, coupled with my “prolonged engagement” (p.132) as the school’s art teacher, enabled me to more readily “build trust and develop a rapport” (p.133) with subjects in the study.

I valued the emergent nature of naturalistic inquiry because while subjects were asked to respond to pre-planned learning progressions, I recognized at the outset that the learning sequence was a plan and not a mandate. The lesson sequences ebbed and flowed as adjustments were made in response to students’ abilities and understandings of what was being taught. As the lesson sequences progressed subjects revealed their understanding of the eight SHoM (Hetland et al., 2007) “on their own terms” (p.132). By locating the study within the context of the art room, meaningful insight was gained into how sixth grade students’ artistic thinking emerged, evolved, and was impacted by the situation in which their ideas developed (p.16).

Aside from the formal nature of research, this inquiry was seen by building staff and parents as a normal part of students’ art class. I intentionally embedded the study within the structure of the school day because I wanted the manner in which the study was conducted to be meaningful and relevant to classroom art teachers working the trenches of K-12 art education. By setting up and executing a study within the constraints of a normal classroom setting, I hoped that this study would serve as a comprehensive model to classroom practitioners and to teacher-researchers contemplating classroom-based research.
Role of the Researcher and Participants

My role in this study was complex. As an artist/researcher/teacher (Irwin & de Cossen, 2004), I was responsible for every dimension of the study (Erlandson et al., 1993). Functioning within the tri-identity of artist/researcher/teacher, I also became a significant instrument for data collection and analysis (p. 39). I was in a position to shape the study, allowing small shifts to occur in response to participants’ actions, responses, and thoughts. Inhabiting this “borderland” (Irwin & de Cossen, 2004) between artist/researcher/teacher allowed me the opportunity to integrate three kinds of thought, “knowing, doing, and making” (p. 29), into the study and into the development of sixth graders’ artistic thinking. Working within the lived space occurring in-between the roles of artist/researcher/teacher (p.33) allowed me to make in-the-moment observations and modifications to the study, assisting in helping students to see the meaning in what they were coming to know, do and make.

The study shifted as it progressed with design changes emanating from the study itself (Erlandson et al., 1993, p.16). While planning for anticipated circumstances, it was understood that I could not know, in advance, what questions would be asked, what help would be needed, or what decisions would need to be made until working with student participants within the group context of the classroom (p. 67). Even then, it was anticipated that the mood and personality of the group would shift as study participants evolved through the multiple phases.

Functioning within the classroom as an artist I demonstrated and modeled the artistic process, serving as a creative mentor in talking with students grappling with their own idea development. As a teacher, I was responsible for being a supportive presence (Levine, 2003, p. 7), creating a welcoming, safe, nurturing, environment where all students felt invited to participate (Paley, 1992). I established classroom work routines and clean-up procedures making sure that the curricular learning progression flowed at a pace students could follow, making
adjustments and modifications to instruction regularly so as to best meet the individual learning needs of study participants. As the artist/teacher assigned to this classroom, to these students, the additional role of researcher was paramount to the design, implementation, and analysis of the study.

As a researcher I communicated the intention of the study to parents and participants, documenting observations, thoughts, decisions, and reflections into a research journal. I made sure students understood the artistic dispositions and could successfully self-record their documentation of this thinking onto a studio-process checklist designed specifically for this study (Appendix A). I was responsible for setting up and prompting students to use audio recording equipment, as well as demonstrating how to use multimodal software to organize their stages of artistic thinking into digital journals which served as “visual [learning]models” (Madeja, 2004, p. 11) of their artistic thinking. Additionally, I became responsible for taking process-shots of students working, and photographs of artworks completed as a result of the two learning progressions.

The participants in this study were purposefully selected. In 2008, sixth grade students attending the Intermediate School were assigned to one of five teaching teams comprised of two homeroom teachers; each teacher was assigned a maximum of 26 students. From this potential pool, a sixth grade team, led by homeroom teachers M and W, and supported by special education teacher H, was purposefully selected for the study because their students represented the widest range of learning abilities I would instruct that year. I believed that working with students of varying abilities would yield the greatest potential for insight into their artistic thinking. Because the study was embedded into my regular art class, everyone participated in the lessons described

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9 Initially I thought each student would bring in a camera for documentation. It was simply easier to carry a small digital camera in my art apron and take photographs as needed.
in this dissertation. All students on the team were eligible to participate in the study, however, artifacts produced only by students consenting to participate in the study were kept and analyzed.

The consent/assent process began on August, 25, 2008, when a school open house was held, two days prior to the start of school. As parents met homeroom teachers M and W they each received an introductory letter (Appendix C) explaining the aim of the study along with two letters of consent that I had pre-signed (Appendix D). The introductory letter asked parents to sign and return the two letters of consent to their child’s homeroom teacher, M or W, in a sealed envelope, which I provided. Signed letters were collected during the following week by teachers M and W. The homeroom teachers countersigned each letter of consent and then mailed one copy to each parents’ home address in a pre-stamped envelope, which I also provided.

On September 3, 2008, teachers M and W administered and witnessed the verbal assent for children choosing to participate in the study (Appendix E). On September 5, 2008, all consent/assent forms were collated by teachers M and W and mailed to Dr. Yvonne Gaudelius where they were held until the end of the study. At no time did I know who had or had not consented to participate in the study. In order to identify individual student work while maintaining subject confidentiality, each student on the team was assigned a code. The first character of the code was either a W or M, corresponding to the homeroom teachers’ last name. The remaining character was a number 1-26 which was randomly assigned to students once the study began. Each student and all corresponding work was referred to by this alphanumeric code throughout the study (e.g., Student M7, or W22).

The study concluded on May 18, 2009, at which time I contacted Dr. Yvonne Gaudelius requesting that all letters of consent/assent be returned. Once received, all forms were reviewed to establish which students would be included in the study. This review allowed me to ascertain which student data to maintain for analysis. The following information was determined in reviewing the letters of consent/assent:
Throughout the school year 51 students interacted as members of the M and W teaching team. 50 of those students were present at the beginning of the school year and were solicited for participation. As evidenced in the letters of consent/assent, 46 parents granted consent for their children to participate in the study. Of the 46, one student did not assent to participate, reducing the total number of subjects to 45. Finally, two consenting/assenting subjects moved from the team early in the study. Since their data was never collected, they too were removed from the subject pool, reducing the total number of subjects to 43.

**A Four-Phase Strategy**

To better understand students’ artistic thinking, I incorporated two seasoned and comprehensive art making projects into a year long study that encouraged subjects to document the artistic thinking that occurred while making art. The first learning progression focused on leading students toward creating an original ceramic sculpture (Appendix F), while the second featured the creation of personal narrative painting (Appendix G). After each art work was complete, subjects looked at the data collected and each created a multimodal digital journal, MDJ, to show others the artistic thinking they believed was used in making that particular art work. The study was conducted through four major phases (P1, P2, P3, and P4) during the academic year: P1: Making Organic Clay Sculpture (September 8, 2008 – October 31, 2008); P2: MDJ Creation (November 3, 2008 – January 5, 2009); P3: Making Narrative Painting (January 20, 2009 – March 20, 2009); P4: MDJ Creation (March 23, 2009 – May 18, 2009; Appendix H).

The combination of P1 and P2 served as a pilot study, within the study, allowing me to introduce subjects to the idea of research and documentation, to the SHoM, and to the technologies and multimodal software utilized in the study. P3 and P4 were then modified based
upon assessments made during P1 and P2. The data collected in P3 and P4 serve as the basis for the study findings which are discussed in Chapter 4. Additionally, P1 and P3 were conducted in the Intermediate School art room and P2 and P4 were conducted in the Intermediate School computer lab under my direction, with supervisory assistance from teachers M, W, and H.

**Advanced Preparation**

Before the study began three steps were taken to promote its success. First, time was taken to solicit school district support for the study. On August 13, 2008, I sat down with the school district Superintendent and shared my research question and context-specific strategy. The idea of conducting research to assess artistic thinking was new to this Superintendent. With some convincing, he expressed support for the study, acknowledging value in helping students to become self-aware and able to articulate their own processes. The conversation with the Superintendent gave me perspective from outside of my own research bubble while also informing him of the research endeavor about to begin within the school district.

Secondly, since I would be working with human subjects, an application was submitted to the Pennsylvania State University Institutional Review Board (IRB) outlining the parameters of the study. The IRB application was approved the morning of August 25, 2008, allowing me to proceed with announcing the study that evening.

Finally, I determined that computers in the Intermediate School art room and computer lab did not have sufficient RAM to run the computer program designated for the study. My school Principal agreed to assist with funding,\(^\text{10}\) so I ordered the necessary RAM and prearranged

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\(^{10}\) The principal paid $1000 for the computer upgrade with the understanding that an art fundraiser would be held to replenish the funds before the end of the school year, which it was.
for a district computer specialist to install the hardware once it arrived. With district support, IRB
approval, and updated technologies on the way, the study was ready to commence with P1.

P1: Making Organic Sculpture (September 8, 2008 – October 31, 2008)

P1 was designed to test the use of documentation procedures with students, to introduce
research terminology, set-up storage procedures, and prepare me for teaching and conducting
research simultaneously. P1 corresponded to the first of four grading periods. Class M subjects
participated during 18, 45-minute art classes (13.5 hours)\(^\text{11}\) while Class W subjects were engaged
for 20, 45-minute classes (15 hours; Appendix H).

As the study began each subject was given a research number, a 9 ¾ " x 7 ½ " lined paper
journal in which to record their thoughts and observations, a pen, and a yellow studio-process
checklist (Appendix A). Subjects were each assigned a classroom storage cubby labeled with
their research number where they stored research materials. The storage cabinet was locked each
night and opened each morning as students entered the art room. This procedure was maintained
throughout the study to ensure subject confidentiality and to keep students from unintentionally
losing research materials. Over the designated time frame, each subject participated in a series of
lessons designed to build skill and understanding of three-dimensional sculpture, with the result
being the successful creation of one final organic clay sculpture per subject.

Throughout P1, I recorded reflections and observations in a research journal. In writing
this dissertation and reflecting back upon P1, it is clear that my observations were specific to the
three roles I inhabited: research management, curriculum design, and artistic assistance.

\(^{11}\) Class M was scheduled to meet on September 15, 2008, however schools were closed city-wide due to
wind damage incurred from Hurricane Ike.
As a researcher I was especially aware of needed adjustments to research management. I found myself wanting to write about specific groups of students quickly, yet had not included a way to do that prior to the start of the study. I decided to cut large numbers out of black construction paper and placed them on the base of each of the seven wooden tables in the art room (personal notes, September 10, 2008). With numbers in place I could then write comparatively about the work habits of individual groups of students without having to refer to students by their individual subject codes. I also recognized the need for and challenge of treating each class as a new group with fresh and “wonderful ideas” (Duckworth, 2006; personal notes, September 16, 2008). With each new lesson I would get excited to see how students would react to our conducting research. Yet, since Class W started each new lesson in the curricular sequence I found myself having to muster a similar enthusiasm in repeating the lesson with Class M.

Shortly after the study began the hardware in each computer was installed and updated with Windows XP, enabling me to downloaded free multimodal software used to produce subjects’ MDJs. There was difficulty, however, getting the classroom microphone to work consistently. The audio capabilities were therefore not fully functional for the first month of the study (personal notes, October 8, 2008). This glitch required me to take time outside the school day coordinating with the building technology consultant until the problem was corrected.

It occurred to me early in the study that student subjects could offer insight into managing the research. This realization came as M23 wanted to know if he could have copies of the photographs I was taking during class for his journal. I explained that he would be able to see the digital photos during P2, but that it would be too time consuming and costly to print out all the pictures onto photo paper at that time. He asked if I would be downloading the pictures onto my computer that night. I confirmed that I would be doing just that. He then explained that I could simply print a thumbnail view of all the photos and then print them out onto one sheet of paper. He further explained that students could then cut them apart and tape them into their
research journals (personal notes, September 18, 2008). I told M23 that his idea was brilliant and went home to test it out. His idea proved beneficial for managing the images taken in P1.

As a researcher I noticed that subjects’ use of and reference to the studio-process checklist during P1 was sporadic. My best intentions to cue students often got waylaid by questions and general classroom management issues (personal notes, October 19, 2008). Class W was much more involved with the checklist because subjects W12 and W15 raised questions, almost daily, about its proper use and function. These questions prompted me to discuss their questions with the entire class. This same curiosity did not exist in Class M. I therefore did not cue students as often in this early phase of the study.

Finally, it also became apparent that students would not be bringing in their own cameras from home and that I would be taking the majority of photographs used during the study. This solution allowed subjects to have photographs taken at any time without needing to clean up, allowed me to literally see the work being produced throughout the class period, and also eliminated any concern of camera storage and theft.

As a teacher, curriculum design was foremost on my mind. I felt early in P1, that the research process was making me a better teacher. It was causing me to slow down and to be more thorough in my use of terms; more thorough in making sure students understood the concepts as we went along (personal notes, September 11, 2008). By slowing down and looking at student responses I discovered that my own curriculum was not as clear and focused as I once thought. For instance, I had included lessons distinguishing between sculpture in-the-round and relief; created group discovery activities focusing on texture, height, and clay experimentation, all prior to introducing the organic clay assignment and exposing students to exemplary artist sculptures. Yet, in reviewing student storyboards created at the end of P1, it became clear that what students valued as being significant to the creation of their final sculpture differed from what I had included in the curricular sequence. Subjects rarely included the group exercise, nor did they
include the preliminary relief and in-the-round exercises (personal notes, October 26, 2008) as being significant to the created sculptures.

The use of narration in the classroom helped to reveal a linguistic gap in my curriculum. In listening to students narrate their process I initially felt embarrassed, not wanting others to hear how limited students sounded in describing their artwork. I then realized that I was not giving students adequate terminology to describe their art making processes. I had to ask, where are the written terms (personal notes, October 14, 2008)? I was good at using artistic language in demonstrating how to make art, yet had not made a point to post relevant and new artistic terms within the classroom setting. I also realized that students were searching for the language to describe concepts I had not considered. For instance W15 wanted to talk about the stability of her sculpture, a concept not previously emphasized. Narration helped me to become aware of the construction points students wanted to talk about, points relevant to their own art making.

Discovery critique had been a time designed into the curricular sequence for students to learn from one another through whole group discussion. However, I soon realized that the formalist project design lacked a theme, or big idea, making it tough to have class discussions that seemed relevant to everyone (personal notes, October 8, 2008). I abandoned the idea of discovery critique as previously conceived (personal notes, October 25, 2008) and adopted a simpler mini-critique approach; meeting with only a few students at a time, as needed throughout the class period. Students were encouraged to consult with me while working as they had a question or concern. These mini-critiques were consultations that proved useful as student-initiated conversations; and while the consultations seemed private in comparison to a class discussion model, they were often overheard by and useful to multiple students. Through these consultations I functioned more like an artistic facilitator, rather than a teacher mandating what had to be created. I questioned, encouraged, suggested, and helped subjects problem-solve, all in an attempt to assist them in creating the artwork they envisioned.
Working as an *artist* within the classroom caused a pedagogical paradigm shift to occur during P1. Because I was interested in understanding how students could think like artists, I found myself starting to see them as artists, more than as students. I noticed myself treating subjects with the level of respect typically reserved for artistic peers. For instance, as a teacher I must admit that with time and budget constraints in mind that I have often not allowed frustrated students to start a project over again. However, as an artist I often start and restart until I feel my artwork is headed in the envisioned direction.

I realized that if I was to encourage students to act and subsequently think like artists, then I needed to treat them as such. A few subjects expressed frustration and were permitted to start again with fresh clay, as they deemed necessary. M2 produced a strong sculpture; however she was not satisfied with the work. She asked if she could re-do her sculpture at home. Rather than trying to convince her that her work was good enough, I packed her an art-to-go kit and allowed her to work at home, which she did (personal notes, October 29, 2008).

As an artist I also became much more aware of my role in developing students’ ability to utilize specific artistic techniques. In working with clay I had to ask myself, do students feel any sense of mastery (personal notes, October 20, 2008)? Many subjects had not previously worked with clay, and those who had had limited experience with a few one-day clay projects completed in elementary school. For instance, I demonstrated scoring, a technique for attaching pieces of clay, yet as I removed sculptures from the kiln I noticed that M9’s sculpture was in pieces because he had neglected to score any parts during assembly. While I did instruct all students in this attachment technique, I viewed the absolute omission in this instance as an oversight on my part. To remedy the situation I took the subject aside, demonstrated the technique again, and then encouraged him to construct a new sculpture, which he gladly did (personal notes, October 27, 2008).
When this same question of mastery was put to Classes M and W in a final P1 class discussion, several subjects suggested that while I talked about using coil, slab, and pinch construction techniques, that I did not allow them the opportunity to actually become proficient in using each of those clay forming techniques prior to beginning construction on their organic sculptures (personal notes, October 25, 2008). W2 suggested that she might not have had to start over so often had she been more proficient in clay hand building techniques, prior to beginning a more complex sculpture.

Thinking like an artist caused me to re-order my lesson sequence. I usually expose students to artwork and ideas first, and then explain project criteria. Yet, if I wanted students to connect their art making to that of others, it occurred to me that I should explain the goal of the art making first. Once students knew what they were expected to create, they could make decisions about how to proceed. They could look at exemplary artwork with a new and critical eye, to determine whether the artist had used ideas that could be assimilated, adapted, or modified for their own art making purposes (personal notes, October 2, 2008). As students became more comfortable with their role as artists I noticed them taking more initiative to ask for what they needed. Some asked to see the artist exemplars again. Some wanted to know the colors of glaze available, while others asked to see the kiln (personal notes, October 3, 2008).

As P1 neared its conclusion I came to realize that when students worked with clay, they all required some specialized instruction; the key was in helping students to define their needs and to then seek assistance on their own (personal notes, October 13, 2008). I also felt as though I was learning more about my teaching than I was about my students’ art making (personal notes, October 20, 2008), noticing curricular gaps that became evident as students created storyboards depicting the sequence and flow of their art making experience (personal notes, October 22, 2008).
I noticed that subjects seemed to become empowered as a group: directed, even driven, acting with more purpose than my other classes. Subjects in Classes M and W were much more willing to keep trying, especially when typical students would normally be too frustrated to continue (personal notes, October 25, 2008). Finally, I noticed that while writing in the paper journal seemed to help subjects stay focused, that it was the taking of digital photographs, and the attention paid to students who wanted to narrate, that most informed my own understanding of subjects’ progress and curricular understanding (personal notes, October 25, 2008). In-the-moment visual and auditory assessments were that most efficient way to gauge student performance amidst the full teaching load I was maintaining, in addition to the study.

The Revised Studio-Process Checklist

I created a studio-process checklist and gave it to subjects on the first day of P1 (Appendix A). This checklist included a list of ten bulleted statements believed to represent seven of the eight SHoM; observe was initially omitted. From the beginning, I knew that this version of the studio-process checklist would be revised. I wanted students to use the checklist during P1 so they could then assist me in redesigning the checklist, hoping that a collaborative redesign would make students feel more connected to the particular points listed, and to reveal gaps in understanding the SHoM. At the end of P1 I took time to talk with each class, specifically about their use of the checklist.

A few subjects in each class said that they felt the checklist was clear and easy to use. Subjects in both classes mentioned that they felt they did not have time during the class period to use the checklist; that it was tedious trying to wash clay from their hands so they could write something down. Several said they were doing the things listed on the checklist, but they forgot to write it down because they were focused and did not want to stop working.
Through our discussion I also realized that the checklist was too vague: too open-ended; and not visual enough (personal notes, October 25, 2008). Students were eager to indicate times they changed their mind and to note when things did not work as planned. It was difficult, however, for subjects to correlate the items listed on the checklist with the SHoM posted in the classroom because the SHoM icons were not included on the checklist. For instance, students had no idea when looking at the checklist that the first item listed, an idea of what you think your artwork might look like before you start making it, was an act of envisioning. I did mention the correlation in class; however without a title and graphic reminder it seemed several students simply became overwhelmed with the volume of text. It also became too confusing for students to check the thought and the mode in which that thought was being expressed. To assist subjects in making a correlation between the items listed on the checklist and the SHoM I created a template for the revised studio-process checklist.

The revised checklist included icons for each of the eight SHoM. I decided to add observe to the list because it became clear that for students to determine that another artist, teacher, or friend influenced their art that they would have to be engaged in the act of observing to make that determination. I decided to revisit the SHoM research conducted by Hetland et al. (2007) to identify a broader range of actions within each SHoM (personal notes December 16, 2008). After working to expand each category, I simplified the language into discrete action statements underlining the key point in each phrase, similar to the approach taken when offering students guided notes. The revised studio-process checklist (Appendix B) was presented to subjects at the beginning of P3.
P2: MDJ Creation (November 3, 2008 – January 5, 2009)

P2 was designated as a four-week block of time for subjects to explain the art making that occurred in P1. By creating a MDJ, or movie, each subject told the story of their P1 art making experience. The Intermediate School computer lab was used during P2 because it had enough computers for each subject and had a LCD projector enabling me to demonstrate how to use the software through whole group instruction. The lab had a scanner which was used as well. Microsoft Photo Story 3 was the multimodal software selected for P2 because it allowed for a multimodal display of information, was a free download, and because I was familiar with its use.

During P2, subjects were asked to use their studio-process checklist, notes written in their paper journal, digital photographs taken, and any narration previously recorded, to begin making a movie that would convey to others the decisions, thoughts, and techniques actually used in creating their clay sculpture. Subjects could also add images, text, narration, and music not previously collected, in an attempt to better tell their art making story. Subjects were explicitly asked to indicate moments where they thought like an artist. Since it was anticipated that students would not be familiar with multimodal software this beginning time was spent learning the technology to determine how its features could be used to communicate artistic thinking.

Supervision in P2 differed from P1 because I was not the only adult in the room. The time slot used for P2 happened to be a free, non-teaching period for me, but was normally used as literacy time for the M/W/H team. Teachers M and W accompanied their respective classes to the computer lab with teacher H filling in on days when teachers M and W were unavailable.

In the original design, each class was scheduled to meet in the computer lab once a day for two weeks, or 10, 45-minutese sessions (Appendix H). After meeting with the teaching team, however, we decided to modify the first two days of each class schedule. Instead of meeting with

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¹²P2 comprised four weeks of instruction; however since the weeks were scheduled every-other-week, P2 took eight weeks to complete.
the entire class in the computer lab, we met on day one with ½ of each class and with the other ½ on day two (personal notes, November 3, 2008). This shift allowed subjects to receive explicit direct instruction on how to use the multimodal software program. On day three we resumed meeting with the entire class where each subject was then scheduled to work in the computer lab once a day for 45-minutes, for an additional eight days. Otherwise, the P2 timeline was followed as planned. The only hiccup came on Thursday, November 6, 2008 (personal notes) when an impromptu fire drill interrupted work in the lab. Students were extremely concerned about losing their work as they rushed outside to line up. The work was fine; however this event did assist students in understanding the value of regularly saving digital work completed in the computer lab.

In preparing for P2 I decided it would be helpful to establish assigned seating for subjects while working in the computer lab. Subjects’ computer knowledge and capabilities were informally surveyed to determine a seating arrangement: one that placed a computer savvy student, willing to assist others, in each row (personal notes, October 22, 2008). This arrangement allowed students with simple where-to-click questions to more readily gain assistance from a peer sitting nearby. This strategy saved time for students and allowed me to circulate around the lab offering assistance to more substantial questions.

To determine where students would sit, I asked each of them three questions on a computer questionnaire. Question one sought to determine how comfortable subjects felt using computer technology. Subjects could indicate that they preferred not to use a computer at all; that they liked using a computer, but sometimes got confused; or that computer usage was very easy. The second question sought to determine, despite level of confidence, whether a subject could save digital information into a digital folder. Question three asked whether students preferred to ask questions or to answer questions, acknowledging that while a subject may have computer
confidence and skill that they may also not feel comfortable taking leadership in assisting other subjects with their computer-based questions.

Results from this survey helped me to determine which students had leadership ability in the computer lab, which had computer confidence, and which subjects appeared to need computer assistance. In Class M six subjects were identified as leaders, six expressed confidence, and nine appeared to need assistance. Likewise, in Class W nine subjects were determined to be leaders, four expressed computer confidence, and nine acknowledged needing computer assistance.

A digital folder was created for each subject prior to P2. Each folder contained a multimodal software template. The pre-made template allowed subjects to begin constructing their digital journals right away and ensured that MDJs would be saved as the correct type of document (personal notes, October 2, 2008). These folders were organized by class and saved on the school server. I also took time prior to the start of P2 to sort all of the digital images taken during P1 into the appropriate subject folder (personal notes, October 29, 2008; November 3, 2008). Organizing this information ahead of time allowed me to spend the first day leading group instruction, ensuring that all students could directly begin work on their digital journals without delay.

During the first lab session, subjects learned to find and open the multimodal software program. They were shown how to navigate to their digital folders and instructed on how to open the template saved in that folder. Using the LCD projector I modeled how to download digital photographs into subjects’ templates. As subjects completed downloading images they were encouraged to begin arranging the photographs into a sequence that told the story of their art making (personal notes November 3, 2008). During subsequent class periods students were shown how to add text, narration, and musical accompaniment.  

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13 Subjects were permitted to add music since it was a feature of the Microsoft Photo Story 3 program; however musical selection was neither emphasized nor analyzed as part of the study.
It became obvious at the outset that the seating arrangement worked very well. Students stayed in their seats and most were able to get questions answered immediately by their peers. Technological novices gained immediate assistance from peers with greater expertise. This “informal mentorship” (Jenkins, 2009) enabled students to get a quick response to their questions allowing subjects to stay focused on their digital journals. Questions were directed to me when students wanted to know if they had permission to do something (personal notes, November 11, 2008).

The level of focus was noticeable. Teacher W expressed amazement, noticing that all students were very engaged. As one student explained his process to a peer, Teacher W nodded toward the two students and leaned to me whispering, “Listen to them…They all seem to know what to do” (personal notes, November 5, 2008). Through our conversation I realized that subjects were perhaps more focused than usual. It also seemed that having photographs of themselves at work gave students a solid position to begin constructing their art making stories.

It also became clear on the first day of P2 that I needed to add a folder with the digital artist exemplars used in class (personal notes, November 3, 2008). Students who connected to these artworks wanted to download them into their journals; I therefore created a community folder providing a digital cache of famous artists’ art works for subject use.

Throughout P2 subjects worked at varying rates, placing emphasis on different aspects of art making, and upon different forms of communicating that information. I became especially intrigued with subjects’ use of language noticing that students did not ask for help in composing text they wrote, although as students began adding text to their journals they were concerned about their spelling. They kept asking me how to spell specific words they wanted to use (personal notes, November 6, 2008); perhaps because they knew their journals would be seen by others. On occasion some students used so much text that it was difficult to read. On those
occasions, I encouraged, yet did not require, students to reduce paragraphs of text down to the key point they were working to express.

When subjects narrated, however, I noticed a compositional difference. Students who narrated often asked me if they could say something, as if they needed permission, or confirmation that what they intended to say was adequate (personal notes, January 7, 2009). I suppose students asked because they had less experience and therefore felt less comfortable recording narration. I also noticed that students were very attentive to intonation. For instance, W17 re-recorded three frames of his movie narration at least ten times, working to get just the right intonation. Finally satisfied, he said “There...Now it sounds like I was finished and didn’t have anything more to say” (personal notes, December 17, 2008). The challenge in working with subjects composing their narration came in coaching them to know how to narrate without telling them what to say. Subjects wanted me to hear what they were saying and then to confirm that it was okay (personal notes, December 18, 2008), which I did.

Halfway through P2, and once I was sure students knew how to use the multimodal software, I decided to have subjects view and analyze a few of the MDJs to see how well they communicated information to an audience. I met with each class as a group and showed them a sampling of MDJs in-progress. Students responded enthusiastically to seeing the work of their peers, yet they were also very specific in offering critical feedback. Students pointed out problems with text visibility, short transition times between photographs, volume inconsistencies, and surprisingly, students agreed that too much variety made the movies too confusing for others to understand (personal notes, December 8, 2008). Students seemed to enjoy seeing the work of their peers. I found myself surprised and delighted by students’ need to applaud after each movie. Their applause was genuine and enthusiastic, reminding me to slow down and allow students to enjoy what they were doing (personal notes, December 8, 2008). After this brief critique, subjects
were encouraged to continue working on their MDJs and to make adjustments to their own MDJs, as needed.

During P2 I noticed that a few subjects were using exemplar photos in their journals because they looked cool, rather than because the artist had had a direct influence over their artwork (personal notes, November 7, 2008). It seemed that students were including these images because they felt they had to, rather than because they had made a viable connection to the artist. I reminded students to only include aspects of artistic thinking they thought they actually used. I also reminded them that there was no penalty for leaving something out, emphasizing that if they did not think in a particular way, then it was okay not include that SHoM.

Working with Class M and W in the computer lab gave me insight into subjects’ artistic thinking. During P1, for instance, I struggled to connect to subjects in Class M; they were much quieter, less verbal than subjects in Class W; less verbal than I am. I noticed in P2, however, that Class M subjects tended to be more attentive to detail, as a whole. Their attention to detail rejuvenated my interest and commitment to working with Class M and reminded me that just because students do not actively talk in class, that it does not mean that they are not motivated and thinking about the concepts being presented.

Viewing these initial digital journals allowed me to glimpse what students were valuing, telling me what they placed emphasis upon (personal notes, January 8, 2009). Some subjects were enamored with their ability to keep going, to engage and persist despite repeated attempts at creating the sculpture they envisioned. Others focused on the glazing process. Few subjects described what their artwork expressed, perhaps because this was not encouraged within the parameters of the lesson sequence. To this end, the P2 MDJs seemed to say as much about my teaching as they did about student learning and artistic thinking (personal notes, January 8, 2009).

I also felt relief in finally seeing the MDJs and in knowing that the research I had spent so much time preparing was starting to take shape. During these first two phases it seemed that my
curricular shortcomings continued to be revealed causing me to continually have to fend off feelings of inadequacy. For instance, I was concerned that I would be unable to accomplish all the steps in the learning progressions, as previously designed (personal notes, September, 17, 2008); that students were initially off-task and disinterested (personal notes, September, 18, 2008); that my committee might take issue with the direction my research was heading (personal notes, October 3, 2008); or that in allowing students to make their own decisions that I was giving them too much freedom (personal notes, October 6, 2008). At the root of all of these feelings was the fear that my efforts would somehow prove that I was not a good teacher.

As humbling as the fear of public scrutiny was, it continually served to connect me to the fear my students were perhaps facing in openly documenting their own artistic practices. At least one student must have wondered; What if we prove that I don't think like an artist?

**P1 and P2: Findings and Adjustments**

By designing P1 and P2 to function as a study within the study, I was able to gain insight into how to better engage students in artistic learning. Through observation, class discussion, and in viewing both their working processes, and MDJs I was able to establish five important findings. These findings thus shifted the design and implementation of P3 and P4.

**List Target Behaviors**

I determined through observation and group discussion that the SHoM needed to be expressed more succinctly. The checklist and the classroom posters were therefore revised to include target behaviors students could consider when contemplating the use of a specific artistic disposition (personal notes, December 15, 2008). For instance, in P1 a student could only indicate
their ability to engage and persist by acknowledging that they worked through frustration, yet, not all students felt, or became, frustrated. In P3, however, a student could indicate their ability to engage and persist by making any of four choices. They could claim to be: focused, motivated, losing a sense of time, or acknowledge that they worked through frustration. By expanding the concept of each SHoM, and by listing multiple target behaviors for each SHoM, it was believed that more students would relate to the SHoM, and that the SHoM itself would become more dynamic to students.

**Include Artists' Motivations**

Working with subjects during P1 helped me to realize that they wanted to know more about the artistic thinking of the famous artists whose works were shown as exemplars in class. They wanted to know more about how those artists thought when they too made artwork. So in designing my curricular presentation of artists for P3, I attempted to more closely model the SHoM. This was a significant pedagogical transition, realizing that I generally had included exemplars only for visual reference. The exemplar presentation in P3 was therefore expanded to include artists’ thoughts about the art making process, along with the meanings they hoped to create in their artwork, which required me to further research the two featured artists.

I also decided to include my own artwork in the presentation. By linking my art making process to the exemplars, I hoped to connect the student to the artist, and thus make the artistic process more accessible to students. Rather than standing before the class to deliver a lecture, I decided to use the multimodal software to create a narrated presentation that included images and quotes from each artist’s personal writings and reflections. Including artistic reflections upon the studio process into the presentation was informative and served as a visual model for students to
emulate. Showing the presentation as a *movie* afforded me the opportunity to observe students as they related to the presentation, rather than being the subject of the attention myself.

*Photos by Request*

I determined early in P1 that one digital camera would be used rather than multiple cameras. Digital images of subjects working proved useful in assisting them in later recalling what they were *doing* at a particular moment in the art making process. It was not convenient, nor practical, for subjects to stop working to take photographs. Instead, I circulated around the room throughout class taking photographs. I initially had to cue and encourage students daily to request photos be taken at varying stages of the art making process. Eventually, students were being cued by classmates requesting photographs be taken. In walking around the room I was also able to take photographs of students who were so engrossed in their work that they simply forgot to request a photo be taken. The combination of photos initiated by me, and those taken by student request, were used to begin the MDJs in P2. Since this photographic documenting process worked well in P1, I decided to repeat the procedure in P3. The photographic process became much easier to manage in P3 because once students saw how the photographs were used in P2 they more readily began to consider when and if they would need to have a photograph taken.

*Create a Cache of Images*

A cache of images was created and placed into a public folder located on the school server for use during P4. This cache was added to assist students in better communicating their artistic intentions because while photographs taken in P1 may have been helpful in reminding subjects what they had previously done they were not necessarily helpful in communicating to me what
subjects were thinking as they made their sculpture (personal notes, November 7, 2008). As I reviewed MDJs made in P2 it became apparent that it was difficult to determine exactly what a student was thinking if there was no text or narration added to explain an image. Three types of images were therefore added to the cache for students to add into their MDJs in P4: SHoM icons; painting materials, tools and procedures; and art exemplars used in the Personal Narrative presentation. Inclusion of these images allowed students to make reference to the concepts in their MDJs and provided me with a visual cue, connecting a students’ artistic intention to a particular SHoM.

See the Data Quilt

Finally, an unanticipated result of P1 and P2 was the identification of my need to see the data. The visual artist in me yearned to see the resultant artistic thinking in a way that seemed clear, cohesive, and visually exciting; hence the Data Quilt was formed.

Early in P2 I had my own “wonderful idea” (Duckworth, 2006, p.1). As a researcher I had recently read Corrine Glesne’s (1992/2006) advice on displaying qualitative data; on the need to make the data visual (p.155). The artist within wanted to respond visually (personal notes, November 12, 2008) to the work my students were accomplishing in the study. I wanted to make my own data observations visible so students could see. I realized that visible data would allow subjects to observe and comment on the research process and could even motivate us all (personal notes, November 13, 2008).

The P1 Data Quilts were made using data gathered from subjects’ studio-process checklists and were initially designed to display data, after-the-fact. The class M quilt, seen in Figure 1.1, was made first.
Using whole cloth construction I drew a table onto cotton fabric. Along the X axis I stamped each subject number. Above this row of stamps I sewed a strip of fabric aligning a photo transfer of each subjects’ finished sculpture above their research number. Along the Y axis I transferred the eight SHoM icons descending in the order they were shown on the revised studio-process checklist. Using a hand-carved spiral stamp, I noted each instance a SHoM was checked on a subject’s checklist by stamping the spiral into the corresponding square. One quilt was made for each of the two classes. The class W quilt, seen in Figure 1.2, was made on a smaller scale making it easier to transport and share with students.

Figure 1.1. P1 Class M Data Quilt

Figure 1.2. P1 Class W Data Quilt
Excited to reveal my own thinking, I decided to share my idea with students during P2, showing them how I was charting the evidence of their artistic thinking onto their respective Data Quilt. Students were intrigued, even impressed at seeing photographs of their sculptures sewn onto the quilt. After viewing, several students asked to see their checklists again to make sure they had included the stamped items into their MDJ (personal notes, November 24, 2008). The quilt became an external cue, allowing me to deliver both praise and feedback, thus prompting those students needing adult feedback to continue working (Alberto & Troutman, 1982/2006, p. 367). At a basic level, I was visually communicating to students that I was noticing their ability to document moments when they thought like artists.

Making the quilts allowed me to physically experience the summative data as it was stamped and collated. When examining the quilts, I noticed that some students whom I believed did think like artists had no stamps, while others who seemed a bit less thoughtful had all sections stamped, even though they provided no evidence of that artistic thinking in their P2 MDJ. The quilts helped me to notice gaps in student understanding and served as an experiential graphic reminder, helping me to stay visually connected to and focused upon the outcome of the study.

I became intrigued by quilting the data and decided to make a second pair of quilts so that during P3 student data could be stamped onto the data quilt as subjects progressed through the painting project, rather than waiting until the project was completed (personal notes, November 24, 2008). Working on the P3/P4 Data Quilts kept me focused upon the aim of the study and also served to satisfy my own need to make art; a need I often experience when motivating students to do the same.

Working through phases P1 and P2 allowed students to become familiar with the idea of research, with terminology of the study, and allowed me to make critical changes to the design of the study. These piloting phases within the study also allowed me to merge my roles of artist/researcher/teacher by devising a way to artistically display research data throughout the
upcoming curricular cycle. With these modifications and additions made to the study, P3 and P4 were conducted.

P3: Narrative Painting Learning Progression (January 20, 2009 – March 20, 2009)

In P3 subjects in Class M and Class W worked through a series of lessons each leading toward the creation of a Narrative Painting (Appendix G). Lessons in the personal narrative progression were designed to help subjects create a thoughtful gouache painting that would tell the story of their lives. The progression started with students creating simplified symbols connected to their personal interests, and progressed toward them mining what lived deep in their hearts (Atwell, 2004). This collection of assignments became an idea portfolio each student used in determining what they wanted to express in their narrative paintings.

On the first day of class each group was reminded that the aim of the study was to facilitate the documentation of their artistic thinking. I wrote on the board and explicitly told subjects the following:

I want you to become more aware of the eight SHoM and able to document your use of them during the art making process. I want you to come closer: to using all eight habits: to matching what you think, to what you can show us you are thinking. (personal notes, January 21, 2009)

I emphasized to subjects throughout this phase that I wanted to prove to others that they could think like artists (personal notes, January 28, 2009). I tempered this reminding-to-include all eight SHoM, by cautioning students to also only self-record those SHoM they believed they actually used in making their painting. I assured students that they would not be penalized for leaving areas out and that their art grade would not be impacted by their artistic documentation.
Since I had a good rapport with students over a prolonged period of time, they came to know that they could trust my assurances.

Students were, once again, encouraged to document their artistic thinking in paper journals, have photographs taken, narrate, and respond to a revised studio-process checklist (Appendix B). As in P1, all materials were locked in the art room storage cabinet each night and digital images were saved on the school’s server. The schedule progressed as planned (Appendix H), with three exceptions. The first day of school scheduled during P3 was cancelled due to excessively cold weather (personal notes, January 21, 2009) and two days were cancelled for snow and ice (personal notes, January 30, 2009).

As students worked during P3 they appeared to feel more comfortable in documenting their work habits. I did notice, however, that students did not write in their journals as often as they did in P1. Initially, I thought this was because students were losing interest in the research process, yet over time I realized that students were not writing as often because their idea was not shifting as much as it did in P1. During the clay sculpture project, student work and their response to it changed almost daily as students responded to the unpredictability of their clay forms. In the painting project, however, once students were clear about the ideas they wanted to depict, very little actually changed from day-to-day. Subjects were able to document struggles with using the paint, however as a whole, their envisioned ideas remained consistent. Students continued to request that photographs be taken throughout P3, with far less prompting than was required in P1.

Students’ competence in using the documentation strategies freed me to assist them in recognizing the complexity of their own thinking. I was able to coach students to see connections they were making to the SHoM, but were perhaps missing. For instance M7 accidentally dripped black paint across part of her painting. I knew this occurred because of the audible gasp I could hear across the room. Catching her in that moment of frustration I was able to offer her two suggestions: she could start her painting over, or she could find a way to make it work. She
elected to add an image over the drip, effectively hiding the mistake. Still she did not recognize that she was working though frustration. Once I pointed out that she was working like an artist by making her mistake work, she was able to check it off her list as a SHoM that she did use.

Through P3 I worked to track student responses to the studio-process checklist onto the Class M and Class W Data Quilts. It became clear to me through this process that determining the mode in which a SHoM was presented was confusing (personal notes, February 26, 2009). Since each student needed to first create a drawing of their idea for transfer to the painting surface, drawing was the mode. However the simplest way to document the drawings for use in the digital journals was to take photographs of the drawings. Since these photographs did not provide new information to the viewer, it seemed redundant to list drawing and photography as the mode for documenting the idea. The mode in which a SHoM was documented also seemed much less relevant than the fact that a SHoM was being documented in the first place. Since tracking the mode of documentation for 43 subjects was confusing for both me and the subjects, I decided to simplify the process by eliminating it. M for mode remained on the checklist; however students were encouraged to disregard it throughout the remainder of the study.

An unintended benefit to the study came when a student was absent the day I presented the painting assignment. Since my presentation was made as a multimodal movie presentation I was able to have the formerly absent student sit at one of the computers with a headset to watch the presentation upon his return (personal notes, February 27, 2009). This allowed the returning student to receive information identical to his peers while allowing the rest of the class to proceed with the painting project without interruption. It also allowed me to be free to continue to work assisting students without having to take time to explain all the details of the project in person.

P3 concluded as students completed their narrative paintings. Since I was asking students to think like artists, I also wanted them to have a sense of what it was like to have their paintings on display in an art museum, just like other artists. Working with the local city art museum I
arranged to have all 43 paintings placed on display at the conclusion of the study. Subjects knew that their final paintings would be placed on display during the month of May and that they would be taking a field trip to see them at the museum toward the end of the school year. Initially, a few students were nervous that their paintings would not be good enough for display. Sensing their anxiety, I stopped mentioning the exhibit. As the paintings neared completion, students started asking about the exhibition, making sure to let parents know to put it on the calendar.

**P4: MDJ Creation (March 23, 2009 – May 18, 2009)**

During P4 students once again worked in the computer lab using multimodal software to create MDJs that would tell the story of their P3 art making. Class W was scheduled to work 10, 45-minute sessions, and Class M was scheduled to work nine, 45-minute sessions (Appendix H).

A new template was placed into each student folder prior to the start of P4. Subjects were encouraged to use photographs taken during P3, combined with a cache of images stored on the school server which included: SHoM icons; painting materials, tools and procedures; and art exemplars used in the Personal Narrative presentation. A quality photograph of each P3 painting was also taken and placed into corresponding subject folders. A crop feature within the multimodal software enabled subjects to effectively zoom in on specific areas of the painting they wanted to emphasize. Additionally, subjects could add text, narration, and music as functions of the software. Some took time to scan images from their journals, some added digital images acquired from the Internet, while other subjects created original drawings with a popular paint program.

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14 The scanner stopped working partway through P4 therefore digital images were taken and downloaded when needed (personal notes, April 2, 2009).
In P4 each subject was required to start their digital journal with a title slide, and to end their journal with their research number written on the last slide (personal notes, March 23, 2009). Consistently starting and ending each journal with the same format assisted in identifying the creator of each MDJ.

Since subjects were already familiar with use of the technology, emphasis was placed upon creating movies that better communicated individual processes and the use of SHoM indicated on the revised studio-process checklist. Students seemed much more focused than in P2, having a better sense of how to approach working on their P4 MDJ (personal notes, April 2, 2009). Given that subjects already knew how to use the computer software, many did not need all days scheduled to work in the computer lab. Most worked during six of the scheduled sessions. Subjects who did work longer in the lab focused on editing words, checking for spelling errors, adding music, and reviewing checklists looking to add evidence of artistic thinking (personal notes, May 1, 2009).

As in P2, after a few work sessions into P4, time was taken to show students a few MDJs in-progress. I especially emphasized how featured subjects were creating as sense of flow and pacing as they customized the timing of their journals. Subjects were encouraged to distinguish their process from others, emphasizing that there was not one studio process; rather, there were multiple approaches in defining the painting process. I also emphasized the need to check and double-check all spelling (personal notes, April 14, 2009), especially since others would be watching the movies.¹⁵

One addition was made to the curricular sequence at the conclusion of P3. Realizing that subjects had a lot to say about their paintings, but little class time in art to write those thoughts down, I asked Teacher W for assistance. Teacher W agreed to allow students to use a block of

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¹⁵ In addition to displaying final paintings, the museum agreed to publicly screen digital journals in their auditorium.
literacy time to write about their paintings (personal notes, April 2, 2009). I provided a template to get students started (Appendix I) along with thumbnail images of their completed paintings. Teacher W supervised students’ writing and once completed, students brought their written reflections to the lab, adding this writing to the collection of resources which they could employ in determining which SHoM to exhibit in their P4 digital journals. Having students complete this writing after having made their paintings helped students to clarify their motivations. Many then included these motivations in their MDJ (personal notes, May 13, 2009).

A discovery was made in P4 when one subject experimented with the audio recording capabilities on the lab computer. He determined that if he got close enough to the built-in speaker, that his voice was audible, thus allowing him to add narration to the journal from his lab computer (personal notes, April 2, 2009). Previously, subjects wanting to narrate had to go to the art room to use a stand-alone microphone because when initially testing the built-in computer microphones I could not hear my voice. It had not occurred to me, however, to put my mouth right up to the device. This student discovery allowed all students to narrate as they wanted without having to go to the art room, although some still chose to use the art room microphone because they preferred the clarity of the stand-alone microphone and preferred recording what they had to say in private.¹⁶

As P4 concluded, the teacher in me felt confident in knowing that my students had produced thorough, thoughtful work. The artist remained curious to see a visual relationship between subjects’ use of the studio-process checklist and the SHoM evidenced in the P4 MDJs; while the researcher realized that in analyzing the MDJs that I would soon determine what they would reveal about my students' artistic thinking (personal notes, May 15, 2009).

¹⁶ Subjects were not left alone. Once sure they knew how to record, I quietly prepped art supplies for other classes. This distraction created a sense of privacy for subjects recording in the art room during P4.
Data Sources, Collection, and Confidentiality

Four forms of data were collected during this study: A teacher’s sketch journal; two studio-process checklists-- two checklists per subject, one for P1 and another for P3; two MDJs-- two per subject, one created during P2 and another during P4; and 86 photographs of student art-43 sculptures created in P1 and 43 paintings created in P3.

Teacher’s Sketch Journal

Notes and observations made throughout the study were handwritten into a 5 ¼” x 8 ¼” Moleskine ® journal. The size was selected because it was large enough for note taking, yet small enough to carry in my purse and computer bag. Notes were handwritten because it was easier to jot down notes quickly by hand between classes without having to travel across the room to use the school computer. I also knew that I could write faster by hand than when typing. I anticipated drawing in the research journal as I typically do in personal journals, however this did not prove to be the case. Most notes made in the research journal were written either first thing in the morning, before my teaching schedule began, or at the end of the school day prior to my leaving for the evening. When possible I wrote notes immediately after Class M or Class W left the room. Occasionally, I wrote occurring thoughts over the weekend when I had time away from the study to reflect. These notes were then reviewed, providing vital information informing both the research methodology and the findings described in Chapter 4.

17 At the conclusion of P4, W23’s blue checklist could not be found.
Studio-Process Checklists

Each student received a studio-process checklist (Appendix A) during P1 where they self-recorded data through cued and non-cued moments (Alberto & Troutman, 1982/2006, p. 366). The checklist contained categories corresponding to the SHoM. The first studio-process checklist was printed onto yellow cardstock. After reviewing the checklist prompts, students were instructed to look for those behaviors listed and were encouraged to check them off the list if they noticed themselves engaging in the listed behaviors while making their clay sculptures. Each checklist was labeled with the students’ alphanumeric code, kept with student journals, and placed into individual student storage cubbies housed within the art room. The cubbies were locked each evening with a key lock, and opened each morning just prior to students’ entry into the classroom. This precaution was taken to ensure subject confidentiality and to make certain that subjects did not inadvertently take research materials home. Data self-recorded by a student onto this checklist was then used in creating the P2 digital journal, at the students’ discretion. The checklists were reviewed during P2 and data entered by students onto the checklists were stamped onto either the class M or class W Data Quilt (Figures 1.1; 1.2). Each Data Quilt was then shown to its respective class, so subjects could see their own recorded data in comparison to the rest of the class.

The second, revised, studio-process checklist (Appendix B) was printed onto blue cardstock. Each student received this checklist during P3. After reviewing the checklist prompts, students were instructed to look for those behaviors listed and were encouraged through cued and non-cued moments to check them off the list if they noticed themselves engaging in the listed behaviors while making their narrative paintings. These checklists were also locked in student storage cubbies as previously described. Data self-recorded by a student onto this revised studio-process checklist was then used in creating the P4 digital journal, at the students’ discretion. At
the conclusion of P4 the checklists were collected. I then took data entered by students onto the checklists and stamped them onto the P3/P4 Data Quilts (Figures 11.2; 11.3).

**MDJ: Multimodal Digital Journal**

Each consenting/assenting subject to the study created two MDJs using multimodal software. The first MDJ created in P2 served as a pilot run; the second, created in P4 was analyzed as the primary data for the dissertation. Throughout phases P2 and P4 digital journals were stored on the Intermediate School’s building server so subjects could have access to their work from the computer lab. Each night journals were also saved into a teacher folder, as a precaution, should any files have been accidentally moved or unintentionally deleted by a student.\(^{18}\)

At the conclusion of the study I had MDJs from 49 subjects. Once letters of consent/assent were received from Dr. Gaudelius, and once I determined which subject MDJs would be analyzed, I deleted those MDJs belonging to non-consenting/non-assenting students. I then took both the P2 and P4 MDJs created by the 43 consenting/assenting subjects (Appendix E) and burned them onto two sets of CD-ROM discs. One set has remained with me during the analysis of data and writing of the dissertation, and the second set remains locked in a bank safety deposit box, along with the letters of consent/assent for safe keeping. The P4 digital journals were then transcribed frame-by-frame and the content analyzed. A description of this analysis and resultant findings is the subject of Chapter 4.

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\(^{18}\) Fortunately, no digital work was lost or sabotaged during the study.
Photographs of Student Art

Digital photographs of P1 sculptures and P3 narrative paintings were taken at the conclusion of the respective phases and labeled with subjects’ alphanumerical codes. These images were saved into individual student folders and used along with other photographs taken throughout the study to create student MDJs. These same digital images were also printed onto iron-on photo transfer paper, ironed onto white cotton fabric, and sewn into one of the four Data Quilts made throughout the study. Final images of P4 paintings were also printed as thumbnails and given to Teacher W to use with students as they wrote reflections upon the painting process during literacy. The photographs of consenting/assenting subjects’ artworks were subsequently burned onto a CD-ROM and are currently stored in a bank safety deposit box for safe keeping. I anticipate that these images, along with samples of the P4 digital journals, will be used in future publications where this study is either described or further analyzed.

Assumptions Revisited

I assumed as the study began that students would be excited to use digital photography, which, as it turned out, was the case. Subjects were somewhat disappointed, however, when I explained that they could not appear in the photographs. After I explained the need for subject confidentiality, subjects appeared to understand.

I assumed that subjects would enjoy and be eager to add narration to their journals. This however, was not the case. While 14 subjects did include narration in their journals, others were reluctant to do so. A few who tried it said it was awkward hearing how weird their voice sounded. I also believed that students who had difficulty writing would rarely select it as a documentation
strategy. This too, proved to be a false assumption. Students readily included text in their MDJs and even had to be cautioned not to add too much text because it was not legible in the time it took for one image to change to another. More text was visible in P4, with the addition of the summative written reflection.

I assumed that students would improve in recognizing the SHoM, and in their use of technology, as they progressed from the piloting phases of P1 and P2 through P3 and P4 of the study. This proved to be an accurate assumption. I did not consider however, that students would understand the SHoM, yet chose not to include one or more of them as significant to their artistic process. This teacher bias was realized during P4 when M12 asked me to preview his journal. M12 had excellent facility for painting, yet made no mention of the painting materials or process in his journal. When I mentioned that he was missing evidence of Develop Craft, M12 said he did not want to include it (personal notes, May 11, 2009). Through our conversation he implied that it was obvious that he understood how to paint, and that it was banal to mention it. Student omission of a clearly demonstrated SHoM caused me to wonder: If a SHoM is omitted from the MDJ, is it missing because the student did not exhibit it, did not recognize it, or actually chose not to include it (personal notes, January 9, 2009)?

This study revealed that all subjects were able to evidence some degree of artistic thinking. The use of a studio-process checklist, combined with the creation of a MDJ, enabled students to self-regulate their own artistic learning and freed me from traditional classroom constraints, affording me the opportunity to function more freely between the roles of artist/researcher/teacher. Transitioning between the roles of artist/researcher/teacher within the studio art classroom permitted me to better envision what my students could accomplish; to notice the subtleties of their art making; and to assist students in developing the physical skills that enabled them to persist in exploring meaningful and expressive ideas. Reflection upon the
artistic process allowed each of us to reveal an aspect of what occurred during this study. My observations and reflections about what students created is the subject of the next chapter.
Chapter 4

Findings

In this chapter I describe the coding and analysis procedures used to interpret the data transcribed from 43 students MDJs, each created during P3 and P4 of the study. I further describe how the transcribed data were collated and searched for emergent categories of evidence within each of the eight SHoM. This analysis revealed that sixth graders can evidence the artistic thinking dispositions codified in the SHoM. The variety of student response to each SHoM is described in detail. Finally, I will briefly discuss the analysis of the P3/P4 Data Quilts and what they revealed about the use of formative and summative assessment measures.

Journals and checklists were utilized throughout the study as formative self-regulated learning (SRL) measures designed to focus and cue student attention each day back to the artistic thinking dispositions understood to be the SHoM. Information collected in these documents, was combined with digital photographs and digital audio narration to form the P4 student-created MDJs. These journals became visual models of the artistic thinking that occurred as subjects reflected upon the creation of narrative paintings designed and painted in P3. The P4 MDJs are the primary data source analyzed in this study.

Coding for Analysis

In order to determine whether student MDJs contained evidence of artistic thinking, I first had to determine what information the 43 subjects’ MDJs contained. Coding discrete bits of information contained in the MDJs allowed me to apply systematic analysis in a search for
meaning within the data. Coding the data began during the summer of 2009, when I spent three months transcribing, frame-by-frame, content of each of the 43 MDJs. To facilitate this process a transcription template was created (Appendix J). Using the template, each MDJ was viewed and coded to indicate: (a) subject-frame, (b) use of text, (c), use of images, and (d) use of narration.

To begin the coding process, I first opened the MDJ and systematically transcribed each frame. Figure 2, represents the first three frames of M1’s MDJ as an example.

Figure 2. Sample MDJ. The first three frames of M1’s 12-frame journal.

Table 1, illustrates the coding method used when viewing M1’s MDJ.
Table 1

**MDJ Transcript Coding - Partial Sample**

<table>
<thead>
<tr>
<th>Subject-Frame</th>
<th>Frame Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1-F1</td>
<td>W “Live Laugh Love (:”, D [pp: variety of colorful stars]</td>
</tr>
<tr>
<td></td>
<td>S7</td>
</tr>
<tr>
<td>M1-F2</td>
<td>W “These are my stick people I messed up a lot on them but I kept trying until I liked them.”, P [FP detail: four stick people]</td>
</tr>
<tr>
<td></td>
<td>S6</td>
</tr>
<tr>
<td>M1-F3</td>
<td>W “This is the first time I got finished with my painting but I re-did my painting a lot to get it how I wanted.” P [view of painting]</td>
</tr>
<tr>
<td></td>
<td>S6</td>
</tr>
<tr>
<td></td>
<td>“n. F4-F8 are omitted for brevity</td>
</tr>
<tr>
<td>M1-F9</td>
<td>W “As you can see I re-did my flower in my painting a lot.” P [final painting]</td>
</tr>
<tr>
<td></td>
<td>S3</td>
</tr>
<tr>
<td>M1-F12</td>
<td>W “Thanks for watching! By: m1” D [IM: zebra stripes]</td>
</tr>
</tbody>
</table>

*Note. W = writing; FP = final painting; P = photograph; pp = image created in a paint program; S7= SHoM Express; S6 = SHoM engage and persist; and S3 = SHoM observe.*

For instance, when looking at M1’s MDJ, frame one is represented as F1. The complete corresponding code therefore reads as M1-F1. This convention was used in each of M1’s 12 frames, and was subsequently repeated for each subject. Once each frame was coded and the total number of frames was indicated for each subject, the text was transcribed.

Next to the subject-frame code, text was transferred to the template using the computer cut-and-paste feature. Words were coded with a W, to indicate writing, and set off in quotation marks to indicate that they were the words of the subject. For instance, in Table 1, M1-F2 explained how she kept working on her stick people until she finally liked them.

Once the text was coded, I viewed each image and noted whether it was a photograph, drawing, image from the internet, or one designed in a paint program in the school computer lab. Brief descriptions were made to assist in recalling them in future analysis. This coding allowed me to realize, for instance, that while M1 discussed her stick people in M1-F2, that she also included a detail image of her final painting to illustrate the point. Finally, I listened to each MDJ
and transcribed audible narration into the template, coding it with the letter \( N \), to represent narration. As indicated by its absence in Table 1, subject M1 did not include narration in her MDJ.

Systematically coding each frame of each MDJ proved an effective strategy for “unitizing” (Erlandson et al., 1993) the data for further analysis. Each unit of datum was then examined to determine whether it provided evidence of the behavioral qualifiers previously established for each SHoM: the indicators listed through the collaborative redesign of the studio-process checklist.

**Analysis: Identifying Evidence of Artistic Thinking**

Once each journal frame was transcribed, coded data was analyzed to determine whether a SHoM had been evidenced, and if so, it was sorted into the SHoM grid of each subjects’ transcription template. For instance, in Table 1, M1 showed evidence that she could engage and persist in both M1-F2, and M1-F3 by talking about how she kept working on painting her stick people the way she wanted them to look. Her comment differed, however, in M1-F9 when she started her sentence, “Here you can see…” (M1, 2009, F9). By acknowledging the viewer, M1 positions herself as an observer, thus evidencing her ability to observe as an artistic disposition.

It became clear at the onset that the type of evidence required to prove said dispositions would differ for each SHoM. In some instances a photograph sufficed as evidence, yet in other instances only words could fully explicate student intention. The type of evidence considered is explained at the beginning of each of the following SHoM sections. Finally, any comments and images that did not fall into a SHoM category were left at the end of each subject transcript and were not considered as part of the data. For instance in Table 1, M1-F12 was a salutation which
included the subject code. This was determined to fall outside the purview of evidential requirements.

After analyzing and sorting transcripts looking for instances of artistic thinking exhibited in the MDJs, these data were charted to graphically depict the SHoM exhibited by subject, in each class. Table 2 and Table 3 depict data recorded for Class M and Class W respectively.

### Table 2

**Class M SHoM Evidenced in MDJ**

| SHoM | Subject | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|------|---------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| M    |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| S1   |         | x | x | - | - | x | x | - | x | - | x | x | x | x | x | x | x | - | x | x | - | - | - | - | x |
| S2   |         | - | x | x | x | - | x | x | - | x | - | x | - | x | - | x | - | x | - | x | - | x | - | x | - | x |
| S3   |         | x | x | - | - | x | - | x | - | x | - | x | - | x | - | x | x | x | x | x | x | x | x | x | x | x | x |
| S4   |         | x | x | x | x | x | x | x | - | x | - | x | - | x | - | x | - | x | x | x | x | x | x | x | x | x | x |
| S5   |         | - | - | - | - | - | - | x | - | x | - | - | - | - | - | - | - | x | - | x | - | x | - | x | - | x | - |
| S6   |         | x | x | x | - | - | - | x | x | - | - | - | - | - | x | x | - | x | x | x | x | x | x | x | x | x | x |
| S7   |         | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| S8   |         | f | f | m | m | m | f | m | f | m | f | m | f | m | f | m | f | m | m | m | m | m | m | m | m | m | m |

*An x indicates that a SHoM was evidenced in the subject’s MDJ

- **n.** S1 = develop craft; S2 = envision; S3 = observe; S4 = connect; S5 = stretch and explore; S6 = engage and persist; S7 = express; and S8 = reflect
- **m.** f = female subject; m = male subject
- **m.** M5, M8, and M19 were not included in the analysis
I then consolidated the data to determine overall instances of artistic thinking. Based upon this data consolidation, percentages of subjects evidencing a SHoM were ascertained. Table 4 represents the SHoM evidenced by class as well as the combined total percentages.

Table 4

<table>
<thead>
<tr>
<th>SHoM Evidenced: Class M, Class W, Combined</th>
<th>Number of Subjects</th>
<th>Combined Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Class M</td>
<td>Class W</td>
</tr>
<tr>
<td>Total Subjects</td>
<td>21</td>
<td>22</td>
</tr>
<tr>
<td>S1 Develop Craft</td>
<td>15</td>
<td>14</td>
</tr>
<tr>
<td>S2 Envision</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>S3 Observe</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td>S4 Connect</td>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td>S5 Stretch and Explore</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>S6 Engage and Persist</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>S7 Express</td>
<td>18</td>
<td>20</td>
</tr>
<tr>
<td>S8 Reflect</td>
<td>19</td>
<td>20</td>
</tr>
</tbody>
</table>
While gender was not a topic considered prior to the study, I found in analyzing the data that I wanted to know if there existed any difference amongst males and females and their tendency to evidence specific artistic thinking dispositions. In Table 5, the data are configured to represent total SHoM evidenced by gender.

**Table 5**

<table>
<thead>
<tr>
<th>SHoM</th>
<th>Class M=21</th>
<th>Class W=22</th>
<th>Overall Group Totals</th>
<th>Gender Differential</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Class F M</td>
<td>Class F M</td>
<td>Total=43 F M</td>
<td></td>
</tr>
<tr>
<td>Develop Craft</td>
<td>9</td>
<td>6</td>
<td>10</td>
<td>19</td>
</tr>
<tr>
<td>Envision</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>Observe</td>
<td>5</td>
<td>7</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Connect</td>
<td>4</td>
<td>5</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Stretch and Explore</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Engage and Persist</td>
<td>4</td>
<td>3</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Express</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>18</td>
</tr>
<tr>
<td>Reflect</td>
<td>9</td>
<td>10</td>
<td>9</td>
<td>8</td>
</tr>
</tbody>
</table>

* N. F = female; M = male

The far right column of Table 5 notes the gender differential of those subjects evidencing the listed SHoM. Male and female subjects’ ability to engage and persist was evidenced to be somewhat equal, varying by only 4%. A greater number of males provided evidence than females in the ability to: connect, observe, express, and reflect. A greater number of females, on the other hand, showed more evidence than males in: develop craft, envision, and stretch and explore.

Noting a difference in the order SHoM were addressed in the study and the degree to which they were evidenced in the MDJ, Table 6 was created to show each SHoM evidenced in subjects’ MDJ from most frequent to the least.
Table 6

<table>
<thead>
<tr>
<th>SHoM</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>S8 Reflect</td>
<td>91%</td>
</tr>
<tr>
<td>S7 Express</td>
<td>88%</td>
</tr>
<tr>
<td>S1 Develop Craft</td>
<td>67%</td>
</tr>
<tr>
<td>S4 Connect</td>
<td>51%</td>
</tr>
<tr>
<td>S6 Engage and Persist</td>
<td>49%</td>
</tr>
<tr>
<td>S2 Envision</td>
<td>49%</td>
</tr>
<tr>
<td>S3 Observe</td>
<td>49%</td>
</tr>
<tr>
<td>S5 Stretch and Explore</td>
<td>23%</td>
</tr>
</tbody>
</table>

Subjects offered the most evidence of reflect (S8) and express (S7) and the least toward stretch and explore (S5).

Analysis: Emergent Category Designation

Once all instances of artistic thinking were identified they were further analyzed, determining general characteristics and trends evidenced within the SHoM categories. Using the “cut and paste” functions in Microsoft Word, I sorted each instance of a SHoM evidenced in the 43 subject transcripts into corresponding and individual documents for further analysis. For example, all instances of Reflect were cut and pasted into a single document with the heading Reflect. This procedure was followed for each of eight SHoM. Transferring all instances of similar thought to the same document revealed the scope and complexity of said thinking disposition across the subject pool. By systematically sorting and resorting data transferred to the
SHoM topic page, I was able to notice further characteristics of each artistic disposition, as defined by my students.

**Reflect (S8)**

Each MDJ frame was examined to determine whether evidence of the SHoM, reflect was provided. Based upon the target behaviors listed on the revised studio-process checklist (Figure 3.1), 39 subjects, or 91%, provided evidence of the ability to reflect upon their artistic practice.

<table>
<thead>
<tr>
<th>Reflect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ask questions about the meaning of your art</td>
</tr>
<tr>
<td>Explain how you made your art to make it more meaningful</td>
</tr>
<tr>
<td>Know how you used skills to create meaning in your artwork</td>
</tr>
<tr>
<td>Change your artwork to make it more meaningful</td>
</tr>
</tbody>
</table>

**Figure 3.1. Target Behaviors for SHoM Reflect.**

Such evidence can be seen in Figure 3.2.

![Image of a student reflecting on their painting](image.png)

**Figure 3.2. Evidence for SHoM Reflect. M20 reflects back upon his painting and realizes that if he added more planes that it would symbolize his desire to travel around the world. He made this change to make his painting more meaningful, more connected to his future goals (F10).**

In examining MDJ transcripts for the SHoM reflect, comments were sorted into one of two categories that Hetland et al. (2007) called: Question and Explain (p. 65) and Evaluate (p. 69). Once all instances of reflection were identified and sorted into these two categories, further analysis revealed three sub-categories of evaluative comments I called Evaluative Moments of
Negativity, Evaluative Positive Assertions, and Evaluative Conclusions. Table 7 indicates the types of reflections made by each study subject.

**Table 7**

*Types of Reflection Evidenced in MDJ*

<table>
<thead>
<tr>
<th>Subject</th>
<th>Q</th>
<th>EX</th>
<th>EVN</th>
<th>EVP</th>
<th>EVC</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1</td>
<td>-</td>
<td>x</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>M2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>-</td>
</tr>
<tr>
<td>M3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>M4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>-</td>
</tr>
<tr>
<td>M5</td>
<td>-</td>
<td>x</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>M6</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>-</td>
</tr>
<tr>
<td>M7</td>
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<td>-</td>
<td>x</td>
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<td>M8</td>
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<tr>
<td>M9</td>
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<td>-</td>
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<td>M11</td>
<td>-</td>
<td>x</td>
<td>x</td>
<td>-</td>
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<td>M12</td>
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<td>x</td>
<td>-</td>
<td>-</td>
<td>x</td>
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<td>M13</td>
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<td>-</td>
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<tr>
<td>M15</td>
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<td>M16</td>
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<td>x</td>
</tr>
<tr>
<td>M17</td>
<td>-</td>
<td>x</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>M18</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>x</td>
</tr>
<tr>
<td>M19</td>
<td>-</td>
<td>x</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>M20</td>
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*Note: Types of Reflection were sorted into five categories: Q= Question, EX = Explain, EVN= Evaluative Moment of Negativity, EVP= Evaluative Positive Assertion, EVC= Evaluative Conclusion*

As indicated in Table 7, 39 subjects evidenced some type of reflection in their digital journals. Four subjects exhibited no observable reflection and one subject provided evidence of being able to question, explain, and evaluate.

**Question and Explain**

While subjects asked questions throughout the study, very few posed questions in their MDJs. Subjects did not question the merits of the assignment. They did not question their own
intentions, nor did they question why they had included particular images in their paintings. In fact, only two subjects included questions at all.

W2 questioned herself, wondering what decision to make, stating “I didn’t know which color I should do thing[s]” (W2, 2009, F15). W21 wondered whether she was meeting the assignment criteria and whether she was using the SHoM. She stated, “While I was painting I was thinking through … do I include things in my painting that represent me [?] Then I would ask myself … was I deveoping [sic] craft, envisioning, observing, streching [sic] and exploring, expressing and reflecting [?]” (W21, 2009, F12). W21’s comment revealed a reflective tendency to connect her work to curricular expectations.

Twenty-two subjects reflected upon their previous art making in an attempt to explain themselves and the decisions they had made. M13 used narration to explain that she “… decided to paint the black background first” (M13, 2009, F6). After describing the colors she first used on her peace sign, M21 explained through text why she made a change. “Instead I made it [the peace sign] red, white, and blue because most of my family was in the armed forces and I wanted them to be represented somehow “(M21, 2009, F10). Students typically reflected as they explained what occurred during the painting and design process.

**Evaluative**

In addition to questioning and explaining, 27 subjects were deemed to have made an evaluative reflection when the comment or description made was accompanied by affective language placing judgment upon the art making process, the product created, or on a subjects’ specific art making capabilities. These evaluative comments were either expressed as moments of negativity, positive assertions, or as conclusions.
Evaluative Moment of Negativity

19% of all subjects felt that there was some aspect of the painting process, product, or work habit that could have been better, or that they simply did not like. Few subjects expressed negative attitudes toward the art making process in general; however, one subject did express a dislike of cleaning up by writing, “I do not enjoy clean up but it is apart [sic] of thinking and acting like an artist” (M11, 2009, F8).

Several subjects communicated negative thoughts they had toward specific aspects of the painting they created. For instance, while W2 did come to “love” her painting, she narrated, “… When I first started painting I thought oh man this is going to be so terrible I hate the way it looks…” (W2, 2009, F23). W22 expressed a similar sentiment in writing, “I originally started out with this drawing. I wasn’t sure that I had liked it, so I decided to redo a few things on it before we started the final painting” (W22, 2009, F7). W5 liked her drawing, but partway through the painting process decided to start over. In F5 she narrated, “On my painting I started over because I thought it was bad and I didn’t like it…” W5 continued, writing, “I started over because I just put things everywhere and it looked so bad” (W5, 2009, F5-F7). Other subjects explained, “… I didn’t like the color of my background” (M2, 2009, F13), “…I changed it to a cloud because I did not like the flower at all” (M11, 2009, F11), and “… I noticed my grass was too dark near the corner and I didn’t like it” (M21, 2009, F7).

One subject expressed indifference for her painting, writing “…I realized it didn’t look like I wanted it to. I wanted [to] start over, but I didn’t… it wasn’t as bad as I thought it was going to be. If I could do this again I would change many things” (W, 2009, F20 & 21). Another subject compared his work habits to his peers, writing, “I was slow but I still worked” (M3, 2009, F4). He acknowledged that he worked slower than others yet did not necessarily appear to judge himself negatively. While this comment was included as a moment of negativity because the
subject appeared to view his working pace as deficient compared to his peers, it is also an
eexample of the subject’s ability to engage and persist. Despite his slower pace M3 still worked.

These moments of negativity were significant because while subjects appeared to
recognize aspects of the painting that they did not like, they also did not seem to internalize those
negative moments as a lack of personal artistic talent. Rather, in the context of reflection, subjects
expressing negativity seemed able to critically judge and assess their own efforts, and then make
changes, in most cases, making the paintings more acceptable to themselves. No subjects
expressed negativity toward the assignment, nor in their ability to complete the painting and
accompanying MDJ.

**Evaluative Positive Assertion**

Evaluations were deemed positive assertions if they expressed any degree of approval on
behalf of the subject. For instance, when referring to her painting M11 made a seemingly
lukewarm assertion stating that, “…at the end I thought it was ok” (M11, 2009, F11). While this
attitude expressed toward her painting was not overly positive, it was not negative. Alternately,
M22 was positively delighted by his painting. He commented, “…It’s really cool…Yeah, I like
it… It like… makes me feel good every time I look at it” (M22, 2009, F6). If a subject used an
affirmative adjective in conjunction with evaluations made within the study, then they were
deemed to be evaluative positive assertions. 49% of subjects reflecting made such positive
assertions.

Three subjects made positive remarks about the materials saying that, “using the gouache
was fun” (M9, 2009, F14), and “…. I really like how all the colors blended together when I was
positive assertions expressed feelings of pride and approval for the painting completed.
Assertions of pride emerged through comments such as: “In the end I liked my painting…” (M2, 2009, F20); “I am done and im lovin [sic] how it looks” (M7, 2009, F9); “…overall I was happy with my painting” (M14, 2009, F9); “my painting is awesome” (W6, 2009, F13); “I was proud … of my painting when I was done “(W19, 2009, F10); “… one of my greatest triumphs I have ever made…” (W3, 2009, F3). M1 expressed delight when she stated, “I showed my dad my painting and he wanted to go get it framed and put it in the house!” (M1, 2009, F11).

After starting over W11 explained, “…I’m just painting my new one and I love it… I loved it because it was so good and I actually had time to work on it and think of what I was going to put on my painting” (W11, 2009, F). W15 singled out a particular photograph taken of her art making and added narration to explain, “This my favorite picture throughout the whole process of painting… because it shows how many colors I used throughout the painting” (W15, 2009, F20).

Two subjects revealed how their initial apprehension toward painting shifted, stating “…I thought that it would be boring … but this was actually really fun!” (M10, 2009, F2), and “…I was happy plus relieved because, I was so happy with the way it turned out” (M21, 2009, F13).

Two additional subjects acknowledged liking their painting after struggling. W2 explained, “Although I had some struggles I still did really well and I am proud of how my painting looks… I really love the way it came out,” and “…After I had redone a few things on my drawing, I was very satisfied… My painting means a lot to me because it is based on my life. I love ever[y]thing I put in it “(W22, 2009, F25).

The ability to make positive assertions suggests that subjects felt pleased with the paintings produced as a result of the learning progression.
Evaluative Conclusion

An evaluative conclusion differed from an explanation. Subject explanations appeared to be directed toward a viewer of the MDJ, offering an *explanation* for what was visible or for a change that occurred during the painting process. Whereas an evaluative *conclusion* revealed a subjects’ thought or decision that was not necessary for the appreciation or understanding of the artwork. For instance, M4 wrote, “I got an idea from Mark [sic] Chagall ... but I did not include it in my painting” (M4, 2009, F5). He acknowledged an influence by one of the exemplars shown to him in class, yet made a judgment to exclude it from his painting. Knowing this fact does not necessarily help the viewer yet is significant to the subject in his reflective process. Similarly, M14 concluded, “…I would change my red back[ground]” (M14, 2009, F10), and W13 claimed, “I did not put this in my painting because [sic] I could not draw another eagle” (W13, 2009, F6). M20 reflected, “I had to rethink if I really liked my painting with the black border” (M20, 2009, F11). When subjects made evaluative conclusions they expressed a decision or judgment, often appearing to value one decision over another.

Evaluative conclusions also revealed a sense of learning, or knowing gleaned from the experience. W25 explained that, “Getting in the little spaces...Its [sic] Hard” (W25, 2009, F7). W10 determined, “In my painting I made a couple of mistakes. But the more mistakes I made the more it tells about my life…I’ve put the most effort into this painting then any other project that I have ever made” (W10, 2009, F15). W23, a student who rarely painted, concluded “…when i [sic] started to paint I realized that I was good at it” (W23, 2009, F5). One subject considered the parameters of the entire project and determined that, “The goal of our painting was to make a piece of work that represented our own life. I feel that i [sic] did just that” (W15, 2009, F24). These subjects internalized the art making process and were able to clearly articulate individualized conclusions derived from the process.
The fact that the SHoM reflect presented with the highest frequency of all SHoM was surprising. Photographs taken throughout the art making process proved to assist subjects in recalling specific thoughts, and motivations, even when viewed weeks after they were taken. Comparing images taken early in the painting process with differing images taken as the painting progressed allowed subjects to question, explain, and make assessments about their art making, after the fact; a recall which presented a surprising degree of accuracy. In a few instances, a photograph initiated conversation amongst subjects sitting at the same table as they recalled in-the-moment conversations which had originally occurred at the time the photograph had been taken. Each subject was also able to reflect on specific aspects of their painting since the computer software allowed subjects to crop and present individual aspects of their paintings as needed. The reflective writing completed with Teacher W did assist as well.

Express (S7)

Each MDJ frame was examined to determine whether evidence of the SHoM, express was provided. Based upon the target behaviors listed on the revised studio-process checklist (Figure 4.1) 38 subjects, or 88%, evidenced the ability to express as an artistic disposition.

- Create a mood
- Show an emotion or feeling
- Create personal meaning
- The artwork means more than we see

Figure 4.1. Target Behaviors for SHoM Express.

Such evidence can be seen in Figure 4.2.
If one assumes that every painting is a form of expression to some degree, then 100% of subjects did express since all participants did create a painting. The goal, however, in determining whether students could express as an artistic disposition, differed from whether they could simply express an idea. I determined that to express as a disposition of thinking, there had to be some modicum of intent to create, or a post-recognition that expression had occurred. It was not surprising to note, then, that 88% of subjects showed evidence of their ability to express, since the goal of the lesson sequence was for students to communicate the story of their lives by creating a painting with personal relevance and meaning.

In an attempt to keep from confusing subject intent with my interpretation, I determined that a photo or drawing was not sufficient, alone, in revealing a subject’s expressive intention. I determined that a child expressed a personal connection to the painting when the subject indicated so through writing or narration.

Each subject was directed to include a title slide at the opening of their digital journal and was asked to include the title of their painting on that slide. Seven subjects used titles deemed to be expressive, such as: “Live Laugh and Love” (M1, 2009, F1), “The Express Train” (W3, 2009, F1), “My Favorite Things” (M15, 2009, F1), “the stuff i [sic] like” (M3, 2009, F1), “stuff about me” (M6, 2009, F1), and “Heart-Broken” (W11, 2009, F1). M4 proved an exception. His title...
slide included no words, rather an image of seven white stick men standing in a row against a
black background, six with a ✓ on the chest and one with an X, implying uniqueness (M4, 2009,
F1). This visual image was thought to be so clearly expressed that it qualified as an expressive
comment titling the MDJ. Otherwise, the remaining comments fell into one of four categories:
Objects and Activities; Moods, Emotion, or Personality; Friends and Family; and Time.

**Objects and Activities**

Twenty-five subjects responded by explaining how an object or activity depicted in their
painting was meaningful to them. Most items were very straight-forward. Water represented
swimming (M2, 2009, F16, M3, 2009, F10) and a sun was used to show that the subject likes to
be outside (M11, 2009, F2). Most items represented material objects or athletic activities:
possessions subjects own and activities subjects enjoy. A few images were less obvious: A flower
represented a dog named Daisy (M18, 2009, F13); a fence represented a love of horseback riding
(M2, 2009, F11); and a gun represented time hunting with dad (M3, 2009, F14).

**Moods, Emotion, or Personality**

Eleven subjects attempted to create a mood, elicit emotion, or represent their personality
in their painting. W12 used a series of criss-crossed lines to represent that his life is “going in
many different directions” (W12, 2009, F13). M18 tried to achieve calm (2009, F11); W2 used
color to convey happiness (2009, F16) and W11 attempted to reveal that she was heartbroken
over the loss of friendship (2009, F8). One subject of the eleven did not use language, yet created
a somber mood in her digital journal by slowly panning toward a cropped image of a gravestone
(M7, 2009, F10) emphasizing that someone she loved had died.
**Friends and Family**

Seven subjects included imagery meant to depict their connection to important friendships. These expressions represented a cherished compliment (W8, 2009, F18), summers spent playing softball (W1, 2009, F10-11; M11, 2009, F6), friendship bracelets (W1, 2009, F16), hearts (M17, 2009, F12; W22, 2009, F19), the shared love of playing video games (M22, 2009, F7), and a random word only a friend can find funny (M12, 2009, F15).

10 of the 43 subjects emphasized the importance of their families. Some represented time spent in activities such as hunting (M3, 2009, F14), traveling to volleyball games (M11, 2009, F7), or in working with dad to learn new computer techniques (M12, 2009, F13). Others exhibited pride in a family business (W22, 2009, F20), family military service (M21, 2009, F10), and a Filipino Grandfather’s immigration to the United States (W4, 2009, F27). W1 cares about her family (2009, F12) and M10 (2009, F3) and W12 (2009, F11) acknowledged that they have kind and helpful families.

**Time**

In one of the early lesson prompts subjects were asked to write about memories from their past. Six subjects represented those remembrances in their paintings. The fear of letting go of a balloon (M2, 2009, F18), family vacations (M12, 2009, F16; W1, 2009, F16), tripping over a camera bag (W8, 2009, F15), having an egg fall from a tree onto the head (M18, 2009, F12), and a Filipino flag representing a proud heritage (W4, 2009, F24) are images representing a previous time, personally meaningful to students.

Three subjects included images that lead toward the future. M20 wants to travel the world (2009, F9); M24 wants to play in the NFL (2009, F24); and W15, who created a very complex
series of puzzle pieces, left the center of her painting open and gray to leave room for all of the
colorful pieces of her life yet to fall into place (2009, F8).

The range of imagery subjects displayed was not unexpected since I had employed this
lesson sequence with sixth graders on several previous occasions. The difference noted in this
study, however, compared to previous teachings, is the degree of specificity subjects exhibited in
explaining the reasons and rationales for the inclusion of depicted subject matter. The use of the
MDJ allowed subjects to layer text, or narration, over cropped portions of their paintings creating
a multimodal show-and-tell within the MDJs. Subjects could literally select an image, see this,
and then tell how it was significant to them.

M12 digitally cropped the video camera depicted in his painting, isolated it into its own frame, and then overlaid text where he explained:

The Video Camera and Film Roll: These are representing of my enjoyment in films, making them, and most of all editing. Ever since I was little I would make short movies with my dad, mom, and brother. And when I was 9, I started my own. When I was 10, I started to upload my shorts to online. (2009, F9)

By having the freedom to isolate this one image, from many, the subject also created a virtual painting-within-a-painting, giving him reason to further explain the significance of this image to viewers of his MDJ.

These expressive data are important because knowing what sixth graders value as significant will enable art teachers to assist them in further using artistic dispositions to create meaningful works of art.
Develop Craft (S1)

Each MDJ frame was examined to determine whether evidence of the SHoM, develop craft was provided. Based upon the target behaviors listed on the revised studio-process checklist (Figure 5.1) 29 subjects demonstrated an ability to develop craft.

- Know how to use tools & materials
- Know how to take care of tools & materials
- Know what you can and cannot do with tools & materials
- Use elements & principles of design in a mindful way

Figure 5.1. Target Behaviors for SHoM Develop Craft.

Such evidence can be seen in Figure 5.2.

Figure 5.2. Evidence for SHoM Develop Craft. M11 includes a photograph of running water over which she explains that while she does not like to clean up, she recognizes that it is part of the artistic process (F8).

In reviewing the range of responses related to the SHoM develop craft, student comments fell into one of three categories: Studio practice, studio sequencing, and technical understanding. The sum of these three categories proved that 67% of subjects exhibited evidence of the SHoM develop craft.


**Studio Practice**

Consistent with that identified by Hetland et al. (2007) this category refers to the basic care and maintenance of the art classroom (p. 33). Within the study this range of activity was generally referred to as clean-up and storage. Six subjects talked about the importance of clean-up and the need to properly care for paint brushes. Sixteen subjects felt it relevant to use a stock photo of the gouache paint and then elaborated through added text or narration that this was the paint used to create their narrative paintings. One subject included stock photos of paint brushes, indicating an awareness of the tools and materials, yet did not elaborate any further (M17, 2009, F5). These statements were generally declarative, claiming that the care of materials was important as a matter of fact, with little or no reflection upon the use of the material.

**Studio Sequencing**

This category represents the interest several subjects had in explaining the steps it took to create a particular part of their painting. The evidence did not suggest that these subjects were attempting to reflect upon the success of these processes. Instead, they appeared to simply be showing the order activity occurred during the painting process. For instance, six subjects focused on the day-to-day process of creating a painting. Four noted the quantity of work accomplished over time; one tracked the same idea as it evolved across three projects; and another explained how he made the borders and outlines of objects before painting the insides (M24, 2009, F6). These subjects appeared to be invested in explaining how their ideas were visually transformed over time as they simply stated what they did and the order in which they did it. In studio sequencing, no judgment of the process was noted.
Technical Understanding

Hetland et al. (2007) introduced the category of technique in the context of their study; however, their focus was upon the art teachers’ effort to teach specific techniques to art students (p. 33). In this study the focus was upon the individual student and the techniques deemed relevant to their art making experiences. I demonstrated painting technique in class, yet encouraged students to find ways that also worked best for them. Since students were displaying their understanding of painting technique the term technical understanding is used instead.

Like an artist developing their own approach, 11 subjects elaborated upon very specific technical understandings they came to know through the painting process. M11 wrote, “We used this paint called gouache and they are hard to open. Also each time you open it [the paint] turns a different thickness” (2009, F10). This statement was written across a stock photo of the gouache. Another student wrote; “There were many places where in order to make my painting look cool, I blended my colors” (M13, 2009, F8). M14 explained, “I decided that I would outline everything because it makes it standout” (2009, F5).

Subjects typically commented on the style of brushes they preferred, and the best ways to use the paint. One subject spoke very specifically about using the color wheel. In her digital journal W15 narrated over an image of the color wheel; “While painting the puzzle pieces I really was focused on the color wheel. I tried to keep the different colors on the pieces balanced” (2009, F29). Technical understanding was conveyed through a students’ understanding of how to best use studio tools, processes, and design concepts.

An unexpected finding came in reviewing the gender of subjects who exhibited evidence of develop craft. While 67% of subjects exhibited evidence in this category, 95% of the female subjects provided evidence, making it the highest percentage of evidence provided in a category,
by gender. In comparison, 43% of males provided similar evidence. Subject gender difference was not a focus of the study; however this difference was too great not to mention.

Connect (S4)

Each MDJ frame was examined to determine whether evidence of the SHoM, connect was provided. Based upon the target behaviors listed on the revised studio-process checklist (Figure 6.1) 22 subjects, or 51%, evidenced the ability to connect their artistic ideas to others.

- Connect to other artists
- Connect what you do in school to the world outside of school
- Have conversations with friends and family about art making that influence the design of your artwork

Figure 6.1. Target Behaviors for SHoM Connect.

Such evidence can be seen in Figure 6.2.

Figure 6.2. Evidence for SHoM Connect. M9 inserts an image of Chagall’s painting, White Crucifixion, into the MDJ to show that his painting idea was inspired by seeing this image (F9-F10).

Students were encouraged throughout the study to connect their ideas to others, be it through an influence in subject matter choices or stylistic considerations. It was determined that a subject was influenced by a particular person or image if the student said so through writing or narration, or if the subject included images in their digital journal specifically related to artwork.
or products created by someone other than themselves. Table 8 represents the eight areas evidenced to have some influence upon the creation of subject paintings.

**Table 8**

*Areas of Connection Evidenced*

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*Indicates artists introduced through the curriculum

Only 51% of subjects credited any specific connection to others in generating their painting ideas. The most striking observation is that while eight categories of influence were noted, the three artists introduced in the multimodal curricular presentation represented 52% of all connections subjects made. Of those, three students made connections to digital images presented of Marc Chagall’s paintings. One student mentioned that he was influenced by Faith Ringgold and “her unique painting” (W12, 2009, F8). Eight students made connections to my artwork. Two of my completed paintings were featured in the multimodal presentation alongside Chagall and Ringgold. What is interesting, however, is that those were not the images that influenced students. Rather, they each purport to have been influenced by one of the half-completed painting examples displayed in the classroom: The same painting examples used when demonstrating painting techniques to subjects.
Two subjects were inspired by my use of composition and color; and one interpreted a mood stating, “Ms. McComb influenced me when I was painting because…Her painting seemed calm to me, so I also tried to make my painting sort of calm” (M18, 2009, F10).

Six subjects reported being inspired by classmates. M15 noticed the subject matter his friend, M12, was creating and decided to also include a shared secret word and a smiley face in his painting as well (2009, F14). W6 observed a classmate making a peace sign and decided to do the same (2009, F11); while W8 admitted to being inspired by the image created on a W2’s earlier assignment (2009, F3). W15 saw that her friend made a heart full of puzzle pieces in an earlier project, giving her the idea to make her entire painting out of puzzle pieces (2009, F4); and W23 wrote, “This is one of the paintings that really inspired me. This picture belongs to W4. I like it because it has a lot of color in it and different things about W4's life” (2009, F16).

W13 struggled to feel motivated in his painting efforts until W9 took a strong interest in his work. The conversation amongst friends, the noticing of similar interests and the taking of a friend’s advice sparked a renewed commitment to work hard. W13 did not copy subject matter from his friend, W9, rather, the two collaborated and shared ideas. W9 was especially moved by the sharing. He often verbalized surprise in W13 taking his advice. This communication came to be interpreted as a sense of pride, particularly as W9 insisted a photograph be taken of the two subjects holding their paintings side-by-side (W9, 2009, F9).

One subject was inspired by an earlier printmaking assignment (W1, 2009, F5), while another made a connection to a specific brand of skateboard, including a photograph of the commercial logo in his digital journal to show viewers what the board looked like, compared to what he had painted (M23, 2009, F12). W4 did not specifically state that he was making a connection to his family, yet his painting made reference to both the Filipino flag (2009, F24) and to his grandfather’s journey to America (F27). He used his painting to make a connection to his pride in being of Filipino decent. W20 made a literary connection by writing on his title slide,
“‘from the outside looking in it’s impossible to imagine from the inside looking out its impossible
to explain.’ This quote inspires me” (2009, F1). This literary quote was telling as an extremely
bright subject often had difficulty expressing his ideas. The quote served to frame his painting
into a particular context.

A final student painted a window pane with the view of the mountains outside his
grandparents’ house. He explained through writing that he would often awake to a “gorgeous
sunrise” (W10, 2009, F13) looking out that particular window. His comment was considered to
be evidence of the SHoM connect because he was psychologically connecting to waking up to
this re-created view. The recollection of this view linked him to a real-world experience, which
was precisely the point of the multimodal presentation emphasizing that artists often connect art
making endeavors to their everyday lives.

While the intent of the lesson progression design was for all students to connect their art
making ideas to Chagall and Ringgold, only 9% actually did. In fact, of the 22 subjects, 14, or
64%, stated that their ideas were influenced by people in the art room: Eight were influenced by
displayed subject matter painted by myself, and seven were specifically influenced by what peers
were producing in the classroom. This raises the question; would more students have connected
to Chagall and Ringgold had the reproductions been hanging in the classroom? Is it possible that
students felt that Chagall and Ringgold were irrelevant to their own art making? If subjects had
been exposed to a greater variety of artists would there have been more connections to these
artists expressed in the MDJs?
Engage and Persist (S6)

Each MDJ frame was examined to determine whether evidence of the SHoM, engage and persist was provided. Based upon the target behaviors listed on the revised studio-process checklist (Figure 7.1) 21 subjects, or 49%, evidenced an ability to engage and persist.

![Engage & Persist](image)

- Focused
- Motivated
- Lose a sense of time
- Work through frustration

**Figure 7.1.** Target Behaviors for SHoM Engage and Persist.

Such evidence can be seen in Figure 7.2.

![Evidence for SHoM Engage and Persist](image)

**Figure 7.2.** Evidence for SHoM Engage and Persist. M10 illustrates patience and persistence in being able to wait for paint to dry before she can rework the area (F6).

Examination of subject digital journals revealed that 49% were able to stay engaged in their work, persisting even in spite of occasional frustration. These comments generally related to the use of painting materials. Six subjects addressed *time and focus* writing about being focused, eager to get to work, noting that sometimes “…it felt like [class time] time flew by” (M23, 2009, F2).

Seven subjects provided evidence of *persistent working*. Five wrote comments that showed commitment and patience when acknowledging how much work there was to do and how they needed to keep going: “I kept trying” (M1, 2009, F2); “I still worked” (M3, 2009, F4); “I
stopped and waited until it dried” (M10, 2009, F6); “…it took me a long time” (M23, 2009, F10); and “…I still wasn’t finished…I … have a lot to do” (W32009, F12, F14). Two subjects also expressed an ability to persist in achieving specific visual preferences, waiting for an area of their painting to dry so they could then paint over it with a different color (M2, 2009, F13; M20, 2009, F2).

Fifteen subjects addressed the idea of feeling frustrated, mad, and even angry at some point during the creation of their paintings. W17 expressed frustration in coming up with an idea for his painting (2009, F2) while M10, M11, and W10 each explained how they spent time correcting mistakes. The majority of subjects expressed frustration with using the paint; specifically with blending colors, controlling the paint, or with water spillage: “I got frustrated with the color of my water” (M2, 2009, F9); “I was … frustrated because the white started to crack” (M20, 2009, F8); “… it took me about three times and I was really frustrated with it” (W2, 2009, F13); “When I first got started I kept on getting frustrated ‘cause I was painting over my family’s head” (W12, 2009, F9); “While painting I got really frustrated with the gouache paint. I really didn’t like when you dipped your brush in to get some color it started to contaminate the different colors” (W15, 2009, F27). “I was angry when I spilled water on my painting” (M23, 2009, F8). An additional subject reflected upon the SHoM engage and persist stating, “Frustration is hard to work with so you can't get mad about your work” (W11, 2009, F9).

Contrary to the evidence provided in subject MDJs, engage and persist was the most prominent disposition observed during P3 of the study. While not all subjects included direct evidence of this disposition in their MDJs, it was evident through direct observation that at multiple times throughout the lesson sequence that 100% of subjects were fully engaged and actively working on their painting, often without immediate direction from me. Subjects often entered the classroom, focused on what they wanted to accomplish that day eager to get to work. It was surprising to note that this focus also appeared to foster a sense of community as subjects
worked together to distribute art materials, problem-solve, and encourage one another through varying moments of frustration. Because moments of frustration were valued as necessary to the artistic process, 22 subjects also began to see their struggles as necessary learning opportunities, rather than artistic failures.

**Envision (S2)**

Each MDJ frame was examined to determine whether evidence was provided. Evidence was based upon the target behaviors listed on the revised studio-process checklist (Figure 8.1).

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- Have an idea you cannot see and plan ways to show that image
- Plan changes to something you can see
- Imagine how you will change something

**Figure 8.1.** Target Behaviors for SHoM Envision.

Such evidence can be seen in Figure 8.2.

**Figure 8.2.** Evidence for SHoM Envision. M2 holds the drawing used for her painting to simply point out that this was a step she took in planning what would be painted (F2).

Examination of the MDJ transcripts revealed that 49% of all subjects evidenced an ability to envision during the study. The range of evidence provided for the SHoM envision fell into one of four categories which I identified as: implicit envisioning, simple envisioning, process envisioning, and explicit envisioning.
Implicit Envisioning

Subjects were required to pre-plan their paintings before beginning; a deliberate skill included in the learning progression. This act of pre-planning, by design, was interpreted as an act of envisioning. If a subject included a photo of the pre-planning without further explanation, or mentioned that time was taken to create their idea, then it was identified as implicit envisioning because it was an implicit, built-in component of the learning progression and did not necessarily provide evidence that a subject was aware of envisioning as a specific thinking disposition. A subject may have known, for instance, that they were envisioning and felt it too obvious to mention. However, it is just as likely that a photograph was included because it had been taken and was available for inclusion. Eight subjects included photographs of their drawings or mentioned that it took a while to come up with a painting design, yet they did not express an understanding that this was an act of envisioning. Implicit envisioning indicates that envisioning occurred, yet recognizes that it could have been unintentional.

Simple Envisioning

Seven subjects included images along with text or narration, which indicated an awareness of envisioning as an artistic skill. These subjects claimed to envision, showing the idea as a pencil drawing before it was painted, yet they did not elaborate. For example, M10 writes in F5, “When I first started I didn't know what to do. Then I finally had my painting all in my head, that's when I started to paint” (2009). She clearly notes that the idea was in her head, yet reveals nothing more of her intentions. The envisioning is evident, yet simply expressed.
**Process Envisioning**

Different from simple envisioning, 11 subjects clearly envisioned a painting idea and were concerned with explaining the history or material progression of the idea. Eight of these subjects focused on the historical development of the idea by including images from past assignments, showing how the idea developed toward the final painting design. For instance, M12 (2009) explains over three frames how he kept going back to get ideas:

*This is the Mining Your Heart assignment of mine* [F2: photo of heart assignment]. Often

*I would keep asking for it back for some ideas for my painting* [F3: photo of heart assignment]. *Like for my camera* [F4: photo cropped to show camera].

Three subjects interested in the material process of their thoughts explained how their ideas became visible on the painting surface. Subjects explained the order in which drawings occurred, or even described how the marks were transferred to the painting surface. The focus was on how the painting might look in the future and the emphasis was on how the idea looked during the drawing phase of the idea. In process envisioning the subject explained how their ideas originated.

**Explicit Envisioning**

Three subjects were able to articulate instances in which their envisioning was focused and detailed. They each sited a specific instance of envisioning, explaining what the vision was and how it would impact the look of the final painting. M21 wrote across a photo of her painting in progress, “At first this peace sign was going to be purple with different shades in the spaces” (2009, F9). W2 explained, “I envisioned what my painting would look like. I mostly envisioned what the pinkish red color for my back[g]round would look like and some of my objects” (W2,
W6 wrote, “Before I started my painting I realized that if my sunset had transitions every time the color changed it would look more realistic” (2009, F5). By naming specific colors, shapes, and locations, subjects explained, with explicit detail, the nature of their envisioning. While the evidence is too limited to generalize, the three subjects who did make explicit envisionings did so in response to a visible change that could be observed during the painting process.

All subjects did make a preliminary drawing. It is interesting to note, however, that only 49% of subjects saw a connection between this action and the act of envisioning their work. Since the composition slowly evolved over time, did subjects not realize that they were developing an idea? Is there a distinction between planning ahead and seeing ahead? Perhaps subjects were envisioning, yet decided not to include that SHoM in their MDJ. Envisioning was evidenced, whether implicit in curricular design or explicitly stated by a subject, by the inclusion of a sketched idea, verbal description, or linguistic explanation.

**Observe (S3)**

Each MDJ frame was examined to determine whether evidence of the SHoM, observe was provided. Evidence was based upon the target behaviors listed on the revised studio-process checklist (Figure 9.1).

<table>
<thead>
<tr>
<th>Observe</th>
<th>Notice something looks good and decide to keep it</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Notice details or patterns that others may not notice</td>
</tr>
<tr>
<td></td>
<td>Learn to see with new eyes</td>
</tr>
</tbody>
</table>

*Figure 9.1. Target Behaviors for SHoM Observe.*

Such evidence can be seen in Figure 9.2.
Throughout the study I observed students making critical observations about their artwork. Getting subjects to pause to consider those observations as significant, however, was challenging. When prompted to explain what they could observe, subjects often became speechless. Yet, when I suggested subjects explain what they were noticing, students had something to say. After examining digital journals as transcriptions it therefore became clear that a more definitive term than observe is to notice. Observing seemed to imply watching, or looking. It was passive. Whereas students who noticed did so with specificity and were able to make decisions and assessments about their artwork based upon what they had noticed. 49% of subjects were able to provide evidence of their ability to observe, or notice.

**Explicit Noticing**

Twelve subjects provided evidence of explicit noticing. They made an observation and could clearly articulate a specific realization making that observation noticeable to others. Two subjects made explicit noticings when handling the materials. For instance M9 wrote that while transferring his painting design to the painting surface that he noticed, “When I was tracing it was like the carbon paper was practically copying me” (2009, F4). Another student, W3 wrote, “… I
had notest the Panre bris Fastr than Mes Mucum ses [sic]"n19 (2009, F25). In each case, the subject noticed something about the material that seemed significant to their work process.

Three subjects commented on effects they tried to create in their paintings. M13 pointed out that, “There were many places where in order to make my painting look cool, I blended my colors” (2009, F8). She followed this frame with six images isolated and cropped from her painting where she blended colors, as previously stated (F1-13). W6 and W22 also featured sections of their paintings where they used blending to help to create a sunset (W6, 2009, F7), or to convey happiness (W22, 2009, F14).

M2 pointed out an area of frustration stating, “I got frustrated with the color of my water. It looked more like river water instead of pool water” (2009, F9). She was able to notice that water in her painting did not look the way she wanted and then worked to make it look more desirable. M20 zoomed in on a detail of his peace sign and narrated, “I was also getting frustrated because the white started to crack” (2009, F8). He could see that this area of paint was drying differently from the rest, a fact that came to bother him. While M21 did explain how she changed the color of her grass to make it more acceptable, she first commented, “I noticed my grass was too dark near the corner and I didn't like it” (2009, F7). She had to make an observation, or notice the painting as it was before she could choose to make a change in its appearance.

Three subjects made visual assessments. For instance W4 looked at his painting each day to see what it looked like, matted (2009, F9); W15 came to notice that it was easier to paint the background of her puzzle pieces prior to painting the items inside (2009, F11); and W23 carefully considered his color choices because he wanted the background colors to “pop out” the symbols on his painting (2009, F6). Each of these discrete acts required the subject to notice the current condition of the artwork and then to make visual choices, or assessments about how to proceed with the painting. M18 took this assessment beyond her own work noticing a state of “calm”

19 I had noticed the paint dries faster than Ms. McComb says.
(F11) in her art teacher’s painting as she then worked to recreate a similar effect in her own painting (2009).

**Viewer Directed Noticing**

Since subjects were aware that their MDJs would be viewed by others, eight subjects took time to make sure that the viewer of their MDJ would notice something in particular. These viewer directed noticings pointed out areas of the painting where subjects struggled (M1, 2009, F9), made changes (M6, 2009, F6) or choices (M20, 2009, F12). One subject explained to the viewer what he was doing since his hand could be seen in one of the frames (M16, 2009, F4), and another wanted the viewer to see where she was mixing all her colors (W25, 2009, F5). M23 explained that he included the letter “b” (2009, F3) in his painting to represent a brand of skateboard and then included a photograph of the skateboard in the following frame (F4).

M22, in particular, made an interesting choice. His painting changed significantly from his original drawing. In F3 he wrote over a photograph of him holding his drawing, “This is me holding my painting” (2009). He applied a black outline effect to the photograph to make the lines more prominent to the viewer because he was aware that his painting had changed and he wanted to make sure those viewing his movie would know it too. M22 then recorded narration to accompany the frame stating:

Hi. This is my favorite painting … That’s me holding my painting, but it’s not painted yet… I took the twelve out, I took the stars out and you can see a controller, an Xbox controller, a heart, a peace sign, another peace sign with a heart, and some stars but I take the stars out in this movie. Enjoy the stars while you can … it’s gonna, you’re gonna notice it. (2009, F3)
Much of his painting had changed, but M22 wanted everyone to know that it had looked different, before the changes. The time M22 took to explain this earlier version of his painting caused me to wonder; how often do students feel more pride for an earlier version of their art work?

Three subjects were deemed to have observed, yet did not expressly acknowledge such behavior themselves. W8 would have to have carefully observed in order to fix her smiley face “mess-up” (2009, F10); W10 included a photograph of himself looking at his painting as he wrote about his expressive choices (2009, F16); and W13 included a photograph of himself looking at his painting with a white mat around it, clearly looking to see whether his painting seemed complete (2009, F15).

Finally, one subject claimed to have observed. He included the SHoM icon representing observe and included both text and narration stating, “I observed what is in my painting” (W17, 2009, F12). He makes the claim, yet does not explain how this was accomplished. Nonetheless, since he claims to have observed, it was included in the data.

Art teachers may observe their students at work (Hetland et al., 2007, p.58); however, data collected in this study suggests that sixth grade subjects do not observe so much as they notice what is going on around them. This slight shift in language was instrumental in inviting subjects to understand and communicate their noticings, helping them to value minute changes in process, product, even work habits. A significant finding in reviewing this data was also in realizing that the SHoM observe/notice was rarely a disposition that stood on its own. When a student subject was noticing, they were generally also engaged in another SHoM as well. In fact, in several instances the subject noticed something because they were first frustrated, reflecting, or learning a new technique.
Stretch and Explore (S5)

Each MDJ frame was examined to determine whether evidence of the SHoM, stretch and explore was provided. Evidence was based upon the target behaviors listed on the revised studio-process checklist (Figure 10.1).

- Experiment
- Take a risk
- Try a new approach
- When you make a mistake, discover a way to make it work

Figure 10.1. Target Behaviors for SHoM Stretch and Explore.

Such evidence can be seen in Figure 10.2.

Figure 10.2. Evidence for SHoM Stretch and Explore. M11 explained how she transformed aspects of her painting throughout the process. Changes were usually made out of dissatisfaction, however she still displayed a willingness to explore new subject matter rather than to persist with the same imagery (F11).

It was surprising that only eleven subjects acknowledged that they focused on the SHoM stretch and explore. In the P2 digital journals, many students acknowledged that they had experimented and started over. However, at that time, subjects had just completed a lesson progression where they were working with clay. Student attempts frequently faltered, requiring subjects to begin the process again, in a new way. Subjects could clearly see that they were experimenting as they problem solved better ways for their clay structures to stand. Conversely, as the narrative painting project evolved over multiple smaller assignments, idea development
was much more gradual, perhaps obscuring subjects’ ability to notice all the small decisions made to shift and transform their ideas.

Of those subjects that did address the concept of stretch and explore, four discussed mistakes they made in their paintings and explained how they fixed their mistakes. Two subjects discussed additions or changes as edits, made based upon reflection during the painting process. For instance, W7 made “last minute additions” (2009, F8) and W15 changed one of her puzzle pieces to make it more visually pleasing (2009, F12). Three subjects mentioned that they needed to experiment and figure out how to use the colors. For instance, W6, having envisioned a sunset acknowledged that he worked to “figure out” (2009) how to make the color transitions move evenly from purple at the top, down to yellow at the bottom (F7).

Data transcribed from subject MDJs suggests that subjects needed to falter and start over, make a mistake in process, or come up with a better idea halfway through the project for them to realize that they were stretching and exploring. Those subjects that did stretch and explore appeared to become more confident in their art making abilities as they realized that failure and risk are integral aspects of the art making process.

**Data Quilt Analysis**

The data quilts provided a different perspective. Analysis of the quilts showed a correlation between the assessment measures used and what they would reveal about students’ artistic thinking. Each data quilt contained two layers of data, as seen in figure 11.1.
Spirals and triangles were stamped and painted onto the quilt, each corresponding to student use of the revised studio-process checklist, or to analysis of their MDJs. Checklist usage and MDJ evidence are seen in figure 11.2 which depicts the P3/P4 Class M Data Quilt.
Both layers of data were then analyzed to determine how they corresponded to one another. Table 9, shows the total number of subjects who indicated no SHoM on either the formative checklist, or the summative MDJ; those indicating SHoM only on the checklist; those evidencing a SHoM in the MDJ, and those subjects indicating and evidencing a SHoM in both measures.
Table 9

*Data Quilt Analysis: The Number of Subjects Indicating and Evidencing SHoM through the use of SPC, MDJ, and SPC/MDJ Combined*

<table>
<thead>
<tr>
<th>SHoM</th>
<th>No evidence</th>
<th>SPC only</th>
<th>MDJ only</th>
<th>SPC &amp; MDJ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop Craft</td>
<td>5</td>
<td>9</td>
<td>9</td>
<td>20</td>
</tr>
<tr>
<td>Envision</td>
<td>11</td>
<td>11</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td>Observe</td>
<td>10</td>
<td>12</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>Connect</td>
<td>13</td>
<td>8</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>Stretch &amp; Explore</td>
<td>13</td>
<td>19</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Engage &amp; Persist</td>
<td>13</td>
<td>9</td>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td>Express</td>
<td>3</td>
<td>2</td>
<td>17</td>
<td>21</td>
</tr>
<tr>
<td>Reflect</td>
<td>3</td>
<td>1</td>
<td>24</td>
<td>15</td>
</tr>
</tbody>
</table>

N. SPC = studio-process checklist; MDJ = multimodal digital journal

From analysis of the Data Quilts I was able to conclude first that the use of two measures in the study, one formative and one summative, revealed more about students’ artistic thinking than only one. The number of students providing evidence of artistic thinking in the MDJ alone was strong. Yet, instances of subjects using the SPC/MDJ combined were equally strong. As observed during the study, several subjects responded well to using the studio-process checklist, while others found it bothersome. Data analysis suggests that by incorporating both measures, a broader range of thinking was captured. It is also possible that subjects who did not explicitly indicate a SHoM on the checklist may still have been cued by the expectation of its use within the MDJ.

Analysis of the data quilts showed that very few students used only the checklist to indicate the SHoM express and reflect. These dispositions were evidenced almost exclusively in the MDJ or SPC/MDJ combined. Analysis also confirmed that students were able to recognize moments of stretch and explore, as indicated by the 19 subjects who indicated so on the studio-process checklist, yet they did not value those moments enough to include them in their MDJs.
The studio-process checklist was an effective tool for helping students to consider the range of artistic thinking dispositions. The checklist however, did not provide evidence that such a disposition occurred; it only provided an *indication* that students were having artistic thoughts. The MDJ, on the other hand, provided *explicit evidence* of what students were thinking, and even allowed students to crop images, in effect allowing them to visually point to what they meant for me to see and understand.

Madeja (1967) concluded that some students artistically respond to more structure, while some respond well to less. This study supports that conclusion, as evidenced in the P3/P4 Data Quilts. Some students preferred using the checklist, while some avoided the checklist to work straight into the MDJ, while others used a combination of the two strategies. The use of multiple assessment strategies all working in tandem toward the same curricular aim allowed students to find both the support and/or freedom they needed to document their artistic practices.

Having subjects work to reveal the SHoM set forth in this study provided the first step in better understanding the artistic thinking that occurred in the sixth grade art room. Knowledge of these findings has implications for understanding both the ways students think and perhaps reveals even more about the way studio classroom instruction is designed and assessed.
Chapter 5
Conclusions, Recommendations, Implications

When beginning this journey I sought to determine what assessment of the studio process would reveal about sixth grade students’ artistic thinking. At that time, I could not imagine the complexity of artistic thought that would be discovered. Nor did I realize that in seeking to better understand my students’ artistic thinking that I would come to know more about my own classroom praxis. In this chapter I; (1) discuss conclusions made from the research and describe how the MDJs created to reveal students’ thinking were useful products in assessing both pedagogy and the artistic thinking of pre-adolescent learners; (2) recommend areas of research that emerged from the study; and (3) foresee implications this research has in forging professional conversations around classroom pedagogy, artistic practice, and shared-assessment.

Artistic Thinking Revealed

Based upon classroom observation and a thorough analysis of 43 sixth grade students' MDJs, I was able to make the following conclusions about sixth grade students’ artistic thinking. First, nearly all students were able reflect upon their own art making practice. I believe the incidence of reflect was so high because when viewing images of themselves engaged in art making activity, students could recall what they were doing and why they were doing it. Their reflections tended to explain and evaluate their performance, rather than to question actions taken or choices made.
A large majority of students were capable of expressing meaning in their artwork, especially when they could relate that meaning to their personal interests. Sixth graders in this study placed meaning upon objects and activities; moods, emotion, and personality; family and friends; and time. Students responded to images laden with personal meaning by using text to describe the significance of the image to the viewer. A few subjects used narration; however generally, subjects preferred the written word over those spoken. These same subjects did not speculate upon what their peers were trying to express, perhaps because this was not emphasized in the study.

Nearly two-thirds of students included their knowledge of tools, materials, and design processes within their MDJs. Surprisingly, less than half of males in the study made this inclusion, while all but a few females did. I was unable to determine whether females valued care and maintenance of materials more, or whether males found care and maintenance of materials inherent to the artistic process and therefore not worth mentioning.

Roughly half of all subjects made some connection to others when designing their narrative paintings. With encouragement, prompting, and rigorous and continued reflection, students began to recognize that their art making ideas connected to the ideas of others. Yet, while a goal of the lesson sequence was for students to connect to the art exemplars, very few did. Instead, several students who evidenced a connection to others did so to the people around them. This finding partially supports Wilson (2005) who asserted that adolescents tend toward representing the graphic images from their environment. Those making a connection tended to do so to people and images within the physical space of the art room.

It was surprising to note that half of the students evidencing a connection to others were appropriating my ideas over their peers. It would seem that using an “apprentice” (Boekaerts & Corno, 2005) strategy of teaching influenced students to use not only the techniques I was showing them, but to also adapt the subject matter in making meaning themselves.
Approximately half of students included engage and persist as an artistic disposition in
telling the story of their painting experience, tending to focus on their ability to persist and
overcome their frustration in having messed-up some aspect of their painting. When students are
allowed to pursue the making of meaningful artwork, they can come to value frustration as a
necessary component of the art making process. This does not come naturally. Students walk into
the art room knowing they are going to be judged for the products they produce because this has
been their history with schooling. In this context, unexpected drips of paint, spilled water, or the
collapse of an ambitious idea can lead to feelings of failure and inadequacy. However, when the
artistic process is the focus of art making, there is a shift in thinking. During this study I watched
students emerge through frustration feeling a sense of triumph. Students knew I was honoring the
perseverance they were exhibiting to make their paintings, and because I valued those efforts,
they began to value them as well.

In teaching students to value artistic thinking, both the process and product are equally
important. By creating meaningful products, children experience confidence in their creative
ability, in their ability to communicate their ideas, and in their ability to fashion visually
satisfying results. Yet, it is through student’s becoming self-aware of their own art making
strategies that they understand the multifaceted, ever-changing, even frustrating complexities of
the creative process; that they begin to understand the artistic thinking required of the creative
process. Students gain a sense of satisfaction in knowing they can work hard to express meaning
in visually viable ways.

In teaching students to value frustration, it was essential that I valued their products as they
were created. As a teacher it is easy to value what comes last; however in artistic creation,
what comes last might not be what was best. This was the case with M22, who was much happier
with his painting before it was finished. In helping students to think like artists it can be valuable
for them to understand that artists too are not always pleased with everything they create. The
value comes in recognizing the entirety of the artistic process, not merely its products and in
cueing students to reflect upon their art making with images taken during those processes.

Approximately half of subjects were identified as having envisioned their painting. This
number is somewhat misleading, however, since pre-planning was an implicit aspect of the
learning sequence. The 14 subjects who demonstrated overt acts of envisioning used the MDJ to
acknowledge explicit ideas, or to explain how they saw the process of the painting experience as
it would progress.

Roughly half of subjects made explicit or viewer directed noticings. Students struggled to
explain what they observed, yet readily commented on what they noticed during the art making
process. Students were generally reluctant to verbalize what they noticed initially, for fear of
being wrong. As students realized that I valued what they noticed, they began to verbalize their
observations more frequently.

Finally, while students were observed stretching their ideas and finding new solutions to
unexpected problems occurring during the painting process, only about one-fourth of subjects
mentioned these instances in the MDJ. This finding appears to support the Dorn et al. (Sabol,
2006) conclusion that “experimentation and risk taking” are not highly valued by students (p.10).
Despite repeated attempts and continuous prompting to document and accept moments when their
risk taking went awry, it seemed clear that most students viewed mess-ups, no matter how
brilliant and daring, as having made a mistake.

It may also be possible, however, that the 19 subjects who did indicate the SHoM stretch
and explore only on the studio-process checklist (see table 9) did not include it in their MDJs
because evidence had not been captured during P3 of the study. Taking time to pause for a
photograph can be the last thing on a students’ mind when they are in the midst of being thrilled
with a new discovery. Since this was the first time subjects had been asked to document their
artistic thinking, it is possible that when they got excited by something new or unexpected that they simply forgot to document the event.

Consider these conclusions regarding the SHoM conversely. About half of the subjects in this study did not provide evidence of an ability to connect their ideas to others; to engage and persist in meaningful work; to envision their ideas ahead of time; or to make observations worth noting in the MDJs. Most did not evidence stretch and explore; only some did not acknowledge developing craft; nor showed an ability to express; and very few were unable to reflect upon the art making experience. Whether framed in the affirmative or conversely, what I learned about sixth grade students’ artistic thinking can be generalized in three conclusions.

The SHoM Facilitate Artistic Discussion

As a pedagogical tool, having the SHoM language to redirect students’ artistic attention was helpful in assisting them to consider the scope of their ideas, the level of craftsmanship exhibited, and whether what they were hoping to communicate was effective in doing so. Posting the SHoM target behaviors on posters on the classroom wall, and on the formative studio-process checklist assisted students in beginning to understand that the art making process involves more than making.

Students began to learn that the artistic process also encompassed thinking about the ideas they wished to express and envisioning the visual products they hoped to create. Since this was the first exposure students had to this artistic language two of the eight SHoM terms were changed to make them more accessible to sixth grade students. The eight revised habits include: develop craft, envision, notice, connect, stretch and explore, engage and persist, express, and reflect. As students became familiar with the SHoM they also became more active in understanding nuances of the dispositions. For example, one student wanted me to clarify the
difference between observing and connecting, while another pointed out that more than one
SHoM could be used at a time. The SHoM afforded our classroom community the opportunity to
talk about our ideas as dispositions, not only as right or wrong solutions to a visual problem.

Students Value Different Aspects of the Studio Process

Students place value on different aspects of the studio process, and that emphasis varies
based upon how the events of the artwork unfold. If a student struggles to make a good idea
become visually relevant, they may emphasize their ability to engage and persist when asked to
talk about their art. Likewise, if a student is able to forge a personal connection between their
artwork and the ideas they wish to express, they may emphasize expression or the ability to
connect to others.

A listing of target behaviors connected to the artistic process helped to encourage
students to consider the range of behaviors they could value and emphasize as part of their art
making. As I sought to teach explicit skills, I also allowed students to determine what they would
tell about their own artistic process. Through this approach, explicit learning was revealed.

Students Can Identify and Express Their Artistic Needs

Prior to this study, I generally decided which skills students would need to be taught prior
to teaching an art lesson. Through this study, however, I determined that some of my students
could comprehend more sophisticated processes than I had realized. Whether wanting to stabilize
a sculpture, or create more subtle color transitions in their painting, students' verbalizations made
both in the formative and summative measures afforded me insight into the studio processes that
they needed to carry out their ideas. In listening to my students as an artist and seeking to
understand the specific studio concepts they were grappling with, I was able to not only teach the studio skills I thought should be taught, but was also able to emphasize the skills my students determined they needed. The key stage in determining this juncture between skills students *have* and the skills they *need* is during the envisioning phase of the project.

It is during envisioning that students most actively talk about the ideas they have planned. This study challenged me to devise better ways for students to envision their ideas. Why must students express their ideas as drawings? I realized that I was asking students to draw their ideas because it was easier for me, not because it was necessary for them. Envisioning an idea by drawing it is but one solution to envisioning. This practice was challenged during P1 when a few students verbalized resistance to drawing their sculpture ideas. Instead of dismissing their needs or forcing compliance I asked those students to envision their sculpture ideas by building a paper maquette,20 instead. The maquette allowed students to plan their sculpture ahead of time, and also allowed me to gain a sense of what they were thinking; to know what assistance I would need to provide.

By developing a classroom environment that valued students’ explanations, and the various ways they wished to express them, students started approaching me with more thoughtful queries such as; I was wondering…What do you suppose…I was trying this but I’m not sure how…As students began to realize that I valued their processes, they began to take ownership of those processes.

20 A maquette is a small sculpture that functions like a three-dimensional sketch.
The MDJ: A Product of Process

Assessment is undoubtedly the most challenging aspect of classroom pedagogy. Knowing what to assess, when to assess, and how to report what was found are difficult questions in themselves. Add the gathering of discrete formative and summative data regarding hundreds of students, and it becomes no wonder art teachers would prefer not to talk about assessment. The methodology of this study, however, suggests that the use of MDJs, afforded through Information Communication Technologies, ICTs, proved to be an effective tool in assessing both students and classroom pedagogy.

An MDJ is not merely a product; it is a process. The process of creating the MDJs in this study required all of us, the students and myself, to collect photographs, drawings, narration, and written text to be included in the MDJ. Once evidence of the studio process was imported into the MDJ, then the reflective recreation of the art making process began. The benefit of using the MDJ was the ability to include photographs that were taken during the studio process. These photographs were helpful in stimulating student memory, effectively causing students to live the experience again. Because the photographs triggered memory, the MDJ provided more information about students’ working processes. Students responded to photographs and added explanations that would have been left out of a traditional assessment.

The benefit of using ICTs is that students gained a “glimpse of [their] working process” allowing them to engage in “self-reflective learning” (Pletcher, 1972, p.59). In adding text and/or narrative descriptions to the frame, photographs once silent to me, acquired student “voice and personality” (Fountas & Pinnell, 2001, p. 183). Giving students this freedom to self-describe their own processes created a space where, as Maxine Greene (1995) might say, students could use their own words to identify their own art making initiatives (p. 68). Students described what they
were doing, often also describing what they were thinking, which allowed me to move one step closer to understanding the moments of their art making.

The MDJ became its own creative instrument, allowing students to expand their intentions beyond the final painting created in class. It enabled students to focus their attention on aspects of the painting they felt important to emphasize. Students used the MDJ to explain details of their process, to explain meaning, and to reflect upon the final result. Thus, the MDJ promoted an expanded version of the studio process. Many students seemed to treat the MDJ as a stand alone product with its own expressive qualities.

As a product itself, the MDJ allowed for artistic learning to occur. For instance, while I did not specifically seek nor encourage ideational concurrence or divergence (Unsworth, 2008) within the study, students often used text to describe exactly what was in the picture. Some added narration, reading aloud the text visible on the screen. If asked, I would reveal this concurrence to students, who often decided to omit the redundancy from their MDJ by either deleting text, opting for narration, or vise versa. These students readily began to understand the complexity created when adding text, imagery and narration, and the benefit of adding new information to the frame by altering one of its components, or in limiting redundancy by avoiding duplication of ideas.

Where most assessment instruments are restrictive, the MDJ was the antithesis. The MDJ allowed for what Simons and McCormick (2007) called, a “rich and multifaceted interpretation and analysis” of students’ artistic thinking (p. 305). The multi-dimensional aspect of the MDJs allowed me to not only assess student learning, but also provided insight into classroom pedagogy.
Using the MDJ to Assess Pedagogy

A benefit of using student created MDJs to assess student learning was that they revealed, through omission, what was lacking in my pedagogical approach. For instance, photographic evidence revealed that I did not pay attention to all students in equal measure. This realization came when I was downloading images into student folders and noticed that I did not have the same number of photographs for each child. In analyzing the images, I realized that I took photos of students who created something new, or those who had problems, more than I took photos of other students. It was humbling to realize that I was overlooking some students, yet paying tremendous attention to others.

Narrative evidence confirmed that I was not giving students the language they needed to describe their processes. I have known that I should post vocabulary in the classroom, but never before realized how this lack of language was limiting the ways my students were able to express their individual thinking. I had given students ample space in the curriculum to develop their own thoughts, but realized I could do better in helping them to develop their own artistic voice. Teachers of English use the term *voice*21 to refer to the writer’s style (Tompkins, 1990/2008, p. 89) and suggest that it is the writing trait that “breathes life into writing” (p. 89). They analyze student writing to determine if students’ “‘personality’ resonates from the page” (Fountas & Pinnell, p. 181). Ralph Fletcher (1993) suggested that students create voice by developing “an intimacy between [themselves] and [the] subject” they are writing about (p. 72). I do well in helping my students to forge a personal, even intimate connection to their art making. I realized however, by analyzing the MDJs, that I can improve in helping my students to better articulate that connection both in their writing and speech.

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21 Voice is considered to be one of six traits necessary for effective writing. The other five traits include: ideas, organization, word choice, sentence fluency, and conventions (p. 89).
I also learned through a reflective class discussion of the MDJs that I was not giving students the time needed to master the skills I was introducing. Over the years students have often explained that they needed more time to complete projects. I assumed this expressed need for time was based upon the sentimental desire to keep making art. It never occurred to me that students wanted more time to become more proficient in developing and mastering the skills I was teaching.

In working to emphasize the eight SHoM, I realized that I could easily point out develop craft, engage and persist, and stretch and explore. I had to wonder; was this because students display them more often or because I privilege these skills and am therefore more aware in spotting them in class? The fact that few students included stretch and explore in their MDJs, yet I noticed that I emphasized it often in class created a pedagogical paradox. I needed to revisit the Studio Thinking Framework often during the study to remind myself what the skills of observe, express, and connect entailed.

Use of the MDJ effectively served to create a merger between my desire to assess student learning and the pedagogical structure in which that learning occurred. By synthesizing the MDJs, I was literally able to see and hear the results of my classroom praxis, which allowed me to strengthen its effectiveness, shifting emphasis, instead, toward pedagogical sequencing. This shift in emphasis accomplished what Elliot Eisner suggested when he stated that; “we need to treat teaching as a form of personal research. We need to use the occasions of our performance as teachers as opportunities to learn to teach” (2002, p.56).

This study provides one instance of what student-created MDJs could reveal about classroom pedagogy. Perhaps, if more teachers would agree to assess common artistic thinking dispositions, art educators could begin to better understand their own classroom practices. Perhaps with enough classroom art teachers asking the same question we could begin to generalize the results.
Using the MDJ to Assess Learning

“It isn’t hard. All you have to do is pay attention” ~W17

This comment made by one of the study participants effectively summarized students’ response to working with MDJs as a form of assessment. Students enjoyed working in the computer lab recreating the series of artistic decisions required to produce their final paintings. Students responded well to the idea that I was looking for evidence, especially since so many students watch television shows featuring crime scene investigation. Evidence, they readily understood, comes in multiple forms, whereas, most assessment measures require specific answers, predetermined to be either right or wrong. The use of the MDJ allowed students to make their own case for the artistic thinking they purport to have made.

Once students understood how their in-process documentation would later be used in the MDJ they became even more mindful to the thoughts they would need to document and the specific types of photographs they would need. Engaging students in documenting their artistic practices through varied formative measures served as a form of what Guskey and Bailey (2001) called “process grading” (p. 58). Only in this study, no grades were reported. Rather, student MDJs were assessed to determine which SHoM had been included in the MDJs.

Use of multimodal journaling in this study allowed students to each work with a varied focus and at their own pace, effectively shifting the traditional teacher-directed model of assessment to the student. While students were each given the same instruction, they were also each free to sequence their MDJs and include additional items to help to tell the story of their art making, as they saw fit. Through this shift of authority (Raider-Roth, 2005) I was able to observe the class as a whole and more closely focus on individual students needing assistance. As students were fully engaged in the artistic process I had time, a luxury rarely afforded the classroom art teacher. With this time I was able to consult individually with students about their thoughts and the progress of
their ideas. Together, we were able to determine what skills, resources, inspirations, or reflections were needed for them to be and feel successful in expressing themselves visually.

The combined sense of purpose, focus, and freedom that emerged as 43 learners worked in a highly flexible, transformative manner to reach the same aim, suggests implications for working with students with diverse learning abilities. The flexibility of documenting artistic thought afforded through the MDJs, served to normalize the classroom for learners of varying needs and abilities (Baglieri & Knopf, 2004; Blandy, 1989; Guay, 1993). The MDJ allowed students to respond in communication modes that favored their strengths. Additionally, the varied modes of process data, when seen in the context of the MDJ, served to cue and prompt students, triggering detailed and varied responses and remembrances of their former artistic behavior.

The reflections were then added to the MDJ, enhancing the overall product quality, while providing insights into what students valued within the lesson. Traditional forms of assessment can leave students feeling anxious (Dorn et al., 2004), whereas multimodal assessment left students feeling excited; students' assessment anxiety was reduced as they asserted authority over their own learning process.

**Shared Assessment: The Benefit of Using a MDJ**

The benefit to using MDJs as a form of assessment is that they offer a reciprocal, public perspective, which cues both learning and teaching. Coyne, Kaméenui, and Carnine suggested (1998/2007) that “rigorous and higher order thinking” would result through a merger of teacher-directed and student-directed learning (p. 8). This merger appeared evident in this study. By designing an assessment strategy that would reveal students' artistic thinking, the MDJ, in turn, revealed the strength and weaknesses of classroom pedagogy. The MDJ created a multifaceted
platform where my pedagogical structure and photographed observations united with the artistic thinking practices of my students. Unlike traditional teacher-created, teacher-directed formats, the MDJ assisted in creating a shared learning-centered assessment. There were times when students relied upon me to be the teacher/artist in assisting them to develop their skills and ideas. Those moments were clearly teacher-centered, teacher directed. Yet those moments often occurred as a result of students’ expressed need. Students were encouraged to develop their own art making strategies, to determine for themselves how they would talk about their art making experience, which was an approach more directed by students.

This “learner-centered” (Burton, 2000) measure and the discussion it initiated served as a curriculum-based measurement, providing ongoing information about how students were performing. At the same time, it was vital in determining whether the classroom measures I was employing were helping students to achieve the aims established in the learning progression (Heward, 1980/2003, p. 261).

The MDJs created in this study combined aspects of the electronic portfolio (Dorn et al., 2004, p. 54), with the idea of a sketch journal (Ernst, 1997). The resulting products became unique to students who understood that their MDJs would be viewed by an audience. This public characteristic of the MDJ added a performative aspect to the project. Students appeared to be conscious of how others might interpret the sequence of images, the meaning of the text, and the intonation of their narration. Students were motivated to produce quality work in front of their peers and by working together to create MDJs the classroom became a place where students were collaborators in their own learning; capable of assessing their own working process which enabled them to express their own needs.

Photographs of students working served to cue (Heward, 1980/2003) them to remember aspects of their art making strategies. Like a mnemonic picture (p.271), students looked at the process-shots taken while they worked and were reminded of decisions previously made. Once
the memory was cued, students were able to describe what they were doing at the time the photograph had been taken. This proved a useful strategy in helping students to reflect upon their art making practices, a SHoM that was most evidenced in the study. Students also cued me as they interacted with the studio-process checklist. In an active art room, it can be easy to overlook important tips, or to forget to remind students about what to do next. Students’ documented artistic practices served to cue pedagogical pacing, and questions arising from the formative measures especially provided a cue toward student understanding. Students developed work strategies that improved their ability to reflect, which also serve as pedagogical cues.

Scholars in art education have claimed that while research in assessment does exist, that scholars rarely offer concrete, practical measures that can be readily implemented (Gruber & Hobbs, 2002) into art classrooms. This study hopes to remedy that condition. By teaching students to record their artistic thinking strategies using a MDI, reflective practitioners gain insight into their students, and into themselves, and into their pedagogical practices.

Caution

As hopeful as I am in including the revised SHoM into an artistic pedagogy, I remain cautious. This naturalistic study of sixth grade students’ artistic thinking is not meant to suggest that students must exhibit rigid artistic behaviors to receive an A in their art class. Instead, it describes a research methodology specifically designed to be used as an authentic visual learning model for art teachers seeking to understand how multiple learning needs can be met within one curricular design. Adding the word authentic to the idea of assessment is also problematic.

Dorn (2002) advocated for an authentic concept of assessment, suggesting that when multiple measures are taken, especially those connected closely to the students’ educational experience, they are more “worthwhile, significant, and meaningful” (p.42). While I agree in theory, I liken
this linguistic propensity to Jonathan Kozol’s (2005) determination that the word *diverse*, as it is used in education, means just the opposite (p. 21). On the surface, the word diverse, used in describing a school population, implies variety, and opportunity. Yet, Kozol contended, what educators really mean when they use the word diverse is to say that a school is *not white*. I believe a similar linguistic veil also shrouds the term *authentic* in assessment.

The term *authentic* connotes an assessment that is well-rounded, open, objective, and real; yet in practice, these measures can become just as judgmental and rigid as standardized testing practices. I have witnessed judgmental teachers use the premise of authentic assessment to further justify their rigidity because, as is characteristic, authentic assessments “make explicit what students’ work is judged on” in an attempt to raise performance standards (Dorn, 2002, p. 42). These teachers feel even more justified in assigning struggling students lower grades because of their more “authentic” assessment practice.

Despite the propensity for abuse, advocates of an authentic approach should be applauded for their attempt to make assessment more palpable, both in concept and practice. What needs to accompany this assessment practice, however, is a change of heart. Art educators need to see the process of art making and students’ ability to become aware of that process, as a way for them to collect, interpret, and provide the data that will assist in transforming students’ artistic understanding; teachers’ pedagogical practice; and the field of art education itself. This transformed heart that values qualitative creative processes while quantifying how those processes impact students, beats within a studio-based curriculum.
Recommendations

This study modified the Hetland et al. (2007) artistic thinking dispositions, aligning them with practices of the pre-adolescent learner, to prove that sixth grade students can, and do, think like artists. These revised dispositions would make an excellent source of conversation for art teachers interested in helping their students to access artistic language and the MDJ could assist in facilitating those conversations. As teachers merge image, text, and narration, like a work of art, the MDJ could become a visual product for art teachers. As a visual product, the MDJ could initiate pedagogical conversation amongst teachers and students, amongst building staff, or amongst art education peers at all levels of instruction. Artistic practices no longer need to be kept private and behind closed doors as teachers take their artistic thoughts, decisions, wonderings, and reflections into the public arena. Perhaps, because MDJs are public, creative works, visual arts teachers will be more willing to share their knowledge and work together to develop shared practices.

As I move forward from this research I remain interested in demystifying the artistic process. I want to show students that many of the behaviors they currently exhibit are in fact, artistic practices. By helping students to believe in their artistic selves, perhaps they will continue developing those abilities as they grow toward adulthood. I would encourage educators interested in this research to consider a few questions that emerged through the complexity of the study.

Artists/Teachers. Some students took subject matter and techniques from my painting and re-imagined them for themselves. Why did they use my images over those of their classmates? Boekaerts and Corno (2005) suggested that in reciprocal teaching, students watch, and then they model the behaviors just exhibited. In this study, my role as an artist was influential in helping some students make meaningful connections in subject matter, and proved useful in assisting them in developing the skill needed to paint those ideas. If my art making practices were an
integral aspect in some students’ development of artistic thinking strategies, then I would ask, how proficient must art teachers be in making art themselves? The answer to this question could impact the design of pre-service studio art programs.

*Art Room Appearance.* A majority of students who made connections in this study did so to images they saw in the art room. I have always tried to make my room look visually dynamic, but how much does the physical appearance of the room actually impact students’ artistic development? What role do the visuals hanging in the classroom play in shaping the connections students make in creating meaningful products? The answer to this question could prove vital in assisting art teachers in acquiring funding for dedicated art rooms and visual resources.

*Audience.* Students in this study were motivated, and more careful in composing text, narration, and images because they knew there would be an audience for their ideas. Often a teacher is the only audience for a project or assignment, but what if that were different? This study concluded with students showing their matted paintings at the local art museum. I will never forget it.

I had arranged for students to take a docent led tour of the museum. As the tour concluded, all the students were directed to the Studio Gallery. The moment they walked in the door a student said, “Wow, Ms. McComb, look! Our paintings are hanging in here just like all those other artists. We really are artists!” To these students, the artistic process became real, not only because I taught them the SHoM, but because I made every attempt to actually treat them as artists. Hanging artwork in school hallways is great, but what if student artwork could hang in the same places as professional artists? In what way does the idea of audience impact the way students make art? In what ways can art teachers construct audiences for student artists? The answers to these questions have implications for the way museums and galleries use their spaces, or in how school districts design art display spaces, making them more accessible to the public.

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22 I arranged the student show during the summer of 2008 as I was preparing to begin the study.
**Documentation.** Learning how to visually document student learning was both fun and revealing. At the same time, the responsibility of taking process-shots of students working was also difficult, and sometimes discriminatory. I have to wonder, how would students document their work if they had access to a photo station set-up in the classroom? If all photographs were taken at the discretion of the student, what would their images reveal about what they value in the art making process? What would determine the *reason* for students photographing a particular artistic moment? Answers to these questions have implications for assessment practices, not just in art education, but in all disciplines that include performative practices.

**Music.** The moment students saw that they could add music to their journals, they were elated. Students wanted to add music to the MDJs right away. I repeatedly had to remind students that lab time was reserved to work on documenting their art making, not in playing with the various music features in the Photo Story 3 software. I was worried that students would start developing their own music videos and lose focus on the study, so I did hold them back from the music. However, if I were to now develop an art/music collaborative with the building music teacher, what might that look like? What significance would music have upon the interpretation of MDJs? How would students envision the relationship between the art they make and the music they select? Answers to these questions could impact that way we teach the arts; the way we plan, and could play a role in shaping the previous questions of audience.

**Peer Sharing.** Finally, it was very encouraging to see students working together, complimenting each other’s work and making content and design suggestions to one another. Throughout the study students’ ideas were both motivated and supported by their classroom peers. This is an area of research that seems especially promising in helping to influence students’ artistic thinking. Henry Jenkins (2009) and his research of participatory culture are relevant when asking, how can peer conversation be influenced to enhance artistic sharing? How might a “collective intelligence” (p. 106) shape what we learn and make when creating within an artistic
pedagogical space? If students listen to their peers more than adults, then how might we, as teachers, get invited into the conversation that is currently shaping the way peers communicate, and create with one another? The answers to these questions will undoubtedly change the shape and concept of teaching, perhaps faster than we might imagine.

**Implications**

The findings of this study have implications for conversations surrounding classroom pedagogy and assessment. Many in art education suggest topics K-12 art teachers should teach in shaping what students think about when they make art. Whether community art, visual culture, material culture, social justice, big ideas, computer art, feminist art, etc., art advocates are concerned with what we are teaching in schools, as they should be. All of these topics are certainly worthy of time and attention. Yet, little professional attention is taken to suggest how students might go about constructing this artistic work. As a profession we seem to take for granted that students know how to make art; that students know how to think through the creation of meaning when working with various media.

Art teachers purport to teach art making, and yet there has existed no codified language that describes the art making process. In an educational climate that values assessment more than ever, one has to wonder: how can art teachers assess practices that are unnamed? By embracing a set of artistic thinking dispositions, art teachers can begin to have discussions about how to best lead students in developing their own art making strategies. This study found that in only one school year, sixth grade students were capable of using both artistic language and the corresponding thinking dispositions to guide and shape their artistic practices. The language not only gave us something to talk about, it also expanded our concept of artistic thinking.
If art educators hope to, as Olivia Guda (2009) suggests, help children to believe they can influence and “shape the world” (p. 7), then we need to give them more than drawing and paintings lessons. We need to break down the stereotype of the aloof and mysterious poor misunderstood artist and reveal the studio thinking dispositions that are there and available to everyone choosing to use them. We need to bring artistic equity into the classroom so that all children become empowered through knowledge of their artistic learning. Helping pre-adolescents to both see and implement a full range of the SHoM could help them connect to their artistic selves and to influence in developing artistic voice. Development of voice in writing, or in art making, is vital not only to children, but to their teachers as well. Fletcher (1993), in writing for teachers of English, explained that

Voice is one area where older writers can learn from younger ones. Often, the work of young writers contains an intimacy not just between the writer and the subject but also between the writer and audience. Young writers regularly demonstrate an uncanny ability to reach out from the page, to converse freely with the reader. (p. 74)

In teaching students what we know about art making, they in turn can teach us about the inner workings of their rich and multifaceted artistic lives. Teachers able to develop such classroom practices need not return home at the end of a long school day feeling unappreciated. On the contrary, during this study, I often came home delighted by what I was learning about my students, and even more often intrigued by what I was learning about myself, from them.

This artistic growth has implications for professional conversation as well. Art teachers have been sharing strategies for years, only they have been limited to discussions related to developing craft and the use of elements and principles of design. Agreeing to use a set of artistic dispositions in our art making conversations would allow art teachers to begin sharing and comparing their practices and their research; a sharing not to promote scrutiny, or competition, but to facilitate learning amongst ourselves. Teachers could share ways to help students envision,
strategies for helping students to notice, to express, and reflect. The establishment of guiding artistic dispositions need not inhibit art teacher autonomy. Rather, a common language describing basic artistic dispositions would open a forum for conversations about process, product, and assessment.

In this attempt to learn more about students’ artistic thinking, my hope is that I have also answered Eisner’s (2002) call, offering a specific case of such artistic thought as it occurred in one Ohio suburban Intermediate School. If the adage is true that one person can make a difference, then in this instance, I hope that one sixth grade team made a difference in helping others to better understand the artistic thinking of sixth grade students. I further hope that this research will make a contribution toward helping visual arts teachers envision a way to share and reflect upon artistic practices with their students, with their colleagues, and with the art education profession.

Reflections of an Artist/Researcher/Teacher

How has this research empowered me to be a different kind of teacher?

The Artist: Throughout my career I have tried to make time to paint, and have even recruited students to help me to develop the discipline to do so on a regular basis (McComb, 2006). The problem, however, is that I previously saw my artmaking as being separate from what occurred at school. During this study I felt compelled to make Data Quilts because I wanted to see what my students were doing. Making the quilts while students engaged in lessons I had designed brought a new sense of rigor and excitement to my artistic life. I no longer found myself lamenting when I might make art. Instead, I found myself dashing out of staff meetings so I could get home and start to work. I found that students and teachers were excited about the art I was
making, as well, because it was about them and their classroom. I not only had a subject for art, but I also had an instant audience!

Because students were the subject of art making, I gained a very intimate awareness of what they were doing in class because their actions would have a direct impact upon the artwork I was making. Sharing the Data Quilts with the class, in-process, also allowed students to visibly see that I was paying attention to what they were doing (Making Learning Visible, 2010b). Students genuinely knew that their work was valued, which motivated them to engage in thoughtful, meaningful work. My artistic impulses were met by my students as our artmaking served to motivate one another.

The Researcher: I learned that my question was not new, but that in wondering about how students go about making art, today, I was able to bring a unique perspective to the question. It may sound corny, but at times, when I was immersed in the business of researching the history of art making, I felt I was living among friends. The language was dated, yet the concerns were the same. We each seemed to wonder: How can we offer children a better artistic life? And, will the research I am conducting make a difference in their lives? In the case of this study, I know the work made a difference in the lives of my students; I remain hopeful that it will do the same for others.

The Teacher: The SHoM language has empowered me to talk about classroom praxis in explicit, observable ways. It has helped me in communicating with school district colleagues and for the first time in 25 years, I find myself meeting with school district art teachers willing to coordinate curriculum that emphasizes similar concepts. We formed a Professional Learning Community (PLC) and are now meeting monthly, devising ways to incorporate the SHoM into classroom praxis and to creatively document the formative learning that occurs in our classrooms. I attribute this willingness to collaborate to both the specificity and generality inherent in the SHoM language.
As we meet, the use of common artistic language allows us to center conversations upon target artistic behaviors, yet it also allows us to apply those behaviors to a full range of classroom themes and content. We sit around the same table discussing ways to help students envision, for example, yet are delivering lessons within our classrooms that focus upon differing media, different artists, and even contradictory themes. These gatherings are actually fun.

It would appear that the SHoM are not only giving us something to talk about, but the language is allowing us the opportunity to play. Jenkins (2009) defines play as “the capacity to experiment with the surroundings as a form of problem solving” (p.105). The surroundings are our art rooms and school environment, and the problem is in determining how to assist others in developing habits of artistic thinking. In talking about children’s play, Vivian Paley (2010) explains that “the teacher must get in touch with …children by putting before them something they recognize, which therefore stimulates their imaginations and makes them willing to cooperate in the business of intimacy” (p.24). Play is an enduring impulse. I would suggest that the art teachers in my PLC recognize the artistic thinking dispositions inherent in the SHoM, and that recognition, that longing to be artful practitioners, is what is motivating them, motivating us, to emerge from our classrooms, seeking pedagogical artistic intimacy. Our meetings have become a place where we gather, all creating, designing, and problem solving ways to develop the artistic thinking of our students. What could be more fun than that?
Epilogue

When studying at university I found that the more scholarly work I read, the less I could see of myself. To find my own scholarly voice I returned to the place I knew best, the art room. Working with pre-adolescents, helping them to visually express themselves, breathed life into the words I was reading. From the art room, I discovered kindred spirits; researchers who also know that there is a distinct reason children thrive when learning in the arts. The research of Elliot Eisner (2002), Lois Hetland, Ellen Winner, Shirley Veenema, and Kimberly M. Sheridan (2007) effectively shifted the emphasis of arts education research to the art classroom and opened the door to me, and my students. Eisner’s (2002) claim, that “the most important kinds of research needed in [arts education] are studies of teaching and learning” (p. 215), became a platform on which we could proudly stand. Likewise, Hetland et al. (2007) recognized that something very unique occurs in the art classroom. In wanting to better understand “what the arts actually teach and what art students actually learn” (p. 1), Hetland et al. codified artistic language that, in turn, has given artistic voice to both me, and my students.

*I invite K-12 art teachers to join us. “Speak Up” (McComb, 2008, p. 7) and add your voices to the growing body of research that seeks to prove what we already know; that a place best suited to developing artistic thinking exists within a strong artistic pedagogy.*
References


Columbus-Area Writing Project (2010). *What is the Columbus area writing project?* Retrieved April 7, 2010 from, http://ehe.osu.edu/groups/writingproject/.


### Appendix A
### Studio-Process Checklist

**Studio-Process Checklist**

*Your digital journal should contain proof of the following:*

- An idea of what you think your artwork might look like before you start making it
- A new technique you are learning
- A moment when you discover something new
- Show us something that is influencing how you design your artwork: another artist, a teacher, a friend’s artwork, or something else you see
- A time when you are struggling: either in coming up with the idea or in making the artwork
  - or
- A time when you are changing your mind
- A time you feel like quitting, but don’t
- Thoughts about what your artwork means to you
- Thoughts about how your artwork could be better if you were to make it again
- Tell us about what you want your artwork to express to others
### Appendix B
Revised Studio-Process Checklist

<table>
<thead>
<tr>
<th>Studio-Process Checklist: Evidence of Artistic Thinking</th>
<th>P/3 2009</th>
</tr>
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<tbody>
<tr>
<td>❑ Know how to use tools &amp; materials</td>
<td>W M</td>
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<tr>
<td>❑ Know how to take care of tools &amp; materials</td>
<td></td>
</tr>
<tr>
<td>❑ Know what you can and cannot do with tools &amp; materials</td>
<td></td>
</tr>
<tr>
<td>❑ Use elements &amp; principles of design in a mindful way</td>
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<tr>
<td>❑ Have an idea you cannot see and plan ways to show that image</td>
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<tr>
<td>❑ Plan changes to something you can see</td>
<td></td>
</tr>
<tr>
<td>❑ Imagine how you will change something</td>
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</tr>
<tr>
<td>❑ Notice something looks good and decide to keep it</td>
<td></td>
</tr>
<tr>
<td>❑ Notice details or patterns that others may not notice</td>
<td></td>
</tr>
<tr>
<td>❑ Learn to see with new eyes</td>
<td></td>
</tr>
<tr>
<td>❑ Connect to other artists</td>
<td></td>
</tr>
<tr>
<td>❑ Connect what you do in school to the world outside of school</td>
<td></td>
</tr>
<tr>
<td>❑ Have conversations with friends and family about art making that influence the design of your artwork</td>
<td></td>
</tr>
<tr>
<td>❑ Experiment</td>
<td></td>
</tr>
<tr>
<td>❑ Take a risk</td>
<td></td>
</tr>
<tr>
<td>❑ Try a new approach</td>
<td></td>
</tr>
<tr>
<td>❑ When you make a mistake, discover a way to make it work</td>
<td></td>
</tr>
<tr>
<td>❑ Focused</td>
<td></td>
</tr>
<tr>
<td>❑ Motivated</td>
<td></td>
</tr>
<tr>
<td>❑ Lose a sense of time</td>
<td></td>
</tr>
<tr>
<td>❑ Work through frustration</td>
<td></td>
</tr>
<tr>
<td>❑ Create a mood</td>
<td></td>
</tr>
<tr>
<td>❑ Show an emotion or feeling</td>
<td></td>
</tr>
<tr>
<td>❑ Create personal meaning</td>
<td></td>
</tr>
<tr>
<td>❑ The artwork means more than we can see</td>
<td></td>
</tr>
<tr>
<td>❑ Ask questions about the meaning of your art</td>
<td></td>
</tr>
<tr>
<td>❑ Explain how you made your art to make it more meaningful</td>
<td></td>
</tr>
<tr>
<td>❑ Know how you used skills to create meaning in your artwork</td>
<td></td>
</tr>
<tr>
<td>❑ Change your artwork to make it more meaningful</td>
<td></td>
</tr>
</tbody>
</table>

*N. The target behaviors listed originated from the book *Studio Thinking*, Hetland et al. (2007). Behaviors were listed and then simplified based upon discussions with students during P3.*

*n. W = Witness; M = Mode*
Appendix C
Introductory Letter

August 25, 2008
Dear [Intermediate School] Parent:

As your child’s art teacher I am delighted to welcome you and your child to a new school year. This year, in addition to teaching your child how to better work with art materials, I am also conducting research. Your child is invited to participate in this study of sixth grade artistic thinking being conducted through Penn State University.

Formative Studio-Process Assessment and What It Reveals About Sixth Grade Students’ Artistic Thinking

The purpose of this study is to see what can be learned when sixth grade children keep track of their thoughts as they make art. This study will also look to see how children’s thinking about art making might influence other students, as well as the art teacher. By observing, documenting and analyzing students’ artistic thinking I will help them to better organize and express their ideas. You will also benefit from this study by learning more about your child and what he or she thinks as they plan, create, and talk about art making. Knowledge learned in this study will help me, and others, to plan more meaningful lessons for their students.

Students will document what they think as they make two art works during their regular art class. Each student will choose writing, drawing, photo, or voice recording to show his or her thoughts about each art making procedure. Students will keep track of these choices on a process chart. They will then learn how to place their documented thoughts into a digital journal, using computer software. Once each journal is finished, students will view and discuss the art making process to see what was learned. This study will not take any more time than usual and will not require any extra homework. The decision to allow your child to participate in this study is voluntary and will remain confidential.

Since your child is under 18 and is considered a minor, you will first need to decide whether or not you would like your child to participate in this study. If you choose to allow your child to be a study participant and to allow me to include their work in my analysis you will need to sign the Informed Parental Consent Forms attached and return them to your child’s homeroom teacher [Teacher M or Teacher W]. You may sign them tonight, or you may return them in the envelope provided. Your child’s homeroom teacher will send you one of the forms with all required signatures for your records. The other form will be sent to Dr. Yvonne Gaudelius at Penn State University where it will be kept until the end of the study.

Should you have any questions, concerns, or would like further information about this study please feel free to stop by the art room [room #] this evening, or contact me by phone at [Intermediate School phone number].

I look forward to working with you and your child this year.
Sincerely,

Camilla L. McComb, NBCT
[Intermediate School address]
Appendix D
Letter of Consent

Informed Parental Consent Form for Social Science Research
The Pennsylvania State University

Title of Project: Formative Studio-Process Assessment and What It Reveals About Sixth Grade Students’ Artistic Thinking

Principal Investigator: Camilla L. McComb
[Intermediate School]
[Central, OH]
[phone number and email address]

Advisor: Dr. Christine Marmé Thompson
209 Arts Cottage
University Park, PA 16802-6601
[phone number and email address]

1. The purpose of this study is to see what can be learned when sixth grade children keep track of their thoughts as they make art. This study will also look to see how children’s thinking about art making might influence other students, as well as the art teacher.

2. Students will document what they think as they make two art works during their regular art class. Each student will choose writing, drawing, photo, or voice recording to show his or her thoughts about each art making procedure. Students will keep track of these choices on a process chart. They will then learn how to place their documented thoughts into a digital journal, using computer software. Once each journal is finished, students will view and discuss the art making process to see what was learned. This study will not take any more time than usual and will not require any extra homework. Two art classes will be participating in this study (52 students).

3. There is no risk to your child from participating in this study beyond that experienced in any regular art class.

4. Your child might benefit by learning how to better organize and express their ideas. You may benefit by knowing more about your child and what they think as they plan, create, and talk about art making. Knowledge learned in this study will help teachers to plan more meaningful lessons for their students.

5. This study will occur during art class and will start September 8, 2008 and end on May 20, 2009.

6. This study is happening in a normal school setting, under normal, everyday conditions. Other students and classroom teachers will see the artwork your child makes. Knowledge of your child’s involvement in this study however is strictly confidential. All children will be assigned a randomized code at the beginning of the study and all work they produce will be referred to by that code, rather than by name. All information linking your child’s name to products created will be kept by myself and will be locked in my desk each night. At the conclusion of the study, all lists linking your child by name to the work they create will be destroyed. Penn State’s Office for Research Protections, the Social Science Institutional Review Board and the Office for Human Research Protections in the Department of Health and Human Services may review records related to this research study. In the event of a publication or presentation resulting from the research, no personally identifiable information will be shared and your child’s name and likeness will never be used.
I will keep a copy of your child’s process chart and digital journal for analysis. Digital journals will contain audio recordings made by your child. These recordings will be stored on a CD-ROM, locked in my desk drawer when not in use, and will remain in my possession for analysis until they are destroyed on December 1, 2009. If you would like the recordings your child makes to be used for publication in the doctoral thesis, to be shown at educational conferences, or to be used for future educational training purposes, you can give permission for the recordings to be archived with the principal investigator for those purposes.

A digital photograph of your child’s artworks will also be taken and coded. Your child’s original documents and artwork will be returned by May 29, 2009.

7. If you have questions, complaints, or concerns about this study please call Camilla McComb at [phone number]. If you feel this study is harming your child, please call. To ask questions about your child’s rights as a study participant you may call Penn State University’s Office for Research Protections directly at (814) 865-1775.

8. There is no cost for your child to participate in this study. The process chart, pens, paper, art materials, and digital journal, are provided as part of your child’s regular art experience. Students will make photo and voice recordings using school equipment. Your child may, however, bring additional art supplies to use in class if they wish.

9. The decision to allow your child to participate in this study is voluntary. You can ask that they stop at any time. They do not have to answer any questions they do not want to answer. Refusal to take part in or withdrawing from this study will involve no penalty or loss of benefits to your child. There is no connection between this study and your child’s grade in art.

You will be mailed a copy of this consent form for your records on or before September 25, 2008.

☐ I agree to allow studio-process charts, journals, audio recordings and photographs of my child’s artwork to be released from Art Class to Camilla L. McComb and the research team of this study for the purpose of understanding sixth grade students’ artistic thinking.

☐ I do not agree to allow studio-process charts, journals, audio recordings and photographs of my child’s artwork to be released from Art Class to Camilla L. McComb and the research team of this study for the purpose of understanding sixth grade students’ artistic thinking.

I give permission for my child, ____________________________, to participate in this research study.

Parent (Guardian) Signature _____________________________ Date ____________

Camilla L. McComb, Principal Investigator _____________________________ Date ____________

Homeroom Teacher Signature _____________________________ Date ____________
Letter of Consent Continued

Parental Consent to Archive and Publish

☐ I give permission for my child’s artwork, writing, digital journal, and recordings created as part of this study to be archived on CD-ROM and held by the researcher for publication in the doctoral thesis, to be shown at educational conferences, or to be used for future educational publication or training purposes. I understand that my child will not be named and that their identity will remain confidential.

☐ I do not give permission for my child’s artwork, writing, digital journal, and recordings to be published or shared once the study is concluded and understand that all such data will be destroyed on December 1, 2009.

______________________________  ______________________
Parent (Guardian) Signature     Date
Appendix E
Letter of Assent

CHILD ASSENT FORM TO BE READ ALOUD

Title of Project: Formative Studio-Process Assessment and What It Reveals About Sixth Grade Students’ Artistic Thinking

Principal Investigator: Camilla L. McComb
Art Teacher
[Intermediate School]
[Central, OH]
[phone number and email address]

Advisor: Dr. Christine Marmé Thompson
Research Advisor
209 Arts Cottage
University Park, PA 16802-6601
[phone number and email address]

1. **What is this research about?** You are being asked to participate in a research study. Studies like this one help art teachers find out how students learn about art making. This form will tell you about the study and will help you decide whether or not you want to participate. You can ask any questions you have before making up your mind. You can think about it and discuss it with your family or friends before you decide. Your parent has already given permission for you to participate in this study. It is okay to say “No” if you don’t want to be in the study. If you say “Yes” you can change your mind and quit being in the study at any time without getting in trouble.

2. **How will it help?** The study will help researchers understand the link between thinking about art and making art.

4. **How long will it take me?** The research will happen during your normal art class and will start on Monday September 8, 2008 and will end May 20, 2009. It does not require time outside of school.

5. **Voluntary Participation:** Your art grade will not be affected if you participate or decide that you do not want to participate. In fact, Ms. McComb will not know whether or not you are participating in the study. Only you, your parents and me (teacher M or W) will know if you are or are not participating in the study.
6. **Confidentiality:** All of the art ideas you express will remain confidential, meaning that they will be kept a secret between you and Ms. McComb. Ms. McComb is going to create a code for each person in class, whether you are in the study or not. She will use this code to analyze the data, but will never match your artwork, art ideas, or her observations with your name. When she summarizes, presents, or publishes the results of the research she will use this code so no one else will know it was you who was in the study.

Thank-you for considering your involvement in this research.

Verbal assent: ___________________________ has verbally indicated **THAT HE OR SHE IS**

- [ ] INTERESTED in participating
- [ ] NOT Interested in participating.

Witnessed by: ___________________________ Date ______________

________________________________________
Research Investigator, Camilla L. McComb (Signed in Advance)

Date
## Appendix F
Learning Progression One: Organic Sculpture

<table>
<thead>
<tr>
<th>EK</th>
<th>SS</th>
<th>EK</th>
<th>SS</th>
</tr>
</thead>
<tbody>
<tr>
<td>characteristics of sculpture</td>
<td>identify types of sculpture</td>
<td>elements &amp; principles relevant to sculpture</td>
<td>use space and texture</td>
</tr>
<tr>
<td>characteristics of clay</td>
<td>ways to work with clay</td>
<td>perform hand building</td>
<td>Discovery Critique</td>
</tr>
<tr>
<td>historical &amp; cultural sculptural exemplars</td>
<td>create a work plan</td>
<td>Discovery Critique</td>
<td>SS create sculpture</td>
</tr>
<tr>
<td>Discovery Critique</td>
<td>EK characteristics of glaze &amp; firing</td>
<td>SS apply glaze</td>
<td>Final Critique</td>
</tr>
</tbody>
</table>

**Target Studio Aim**
Create an Original Organic Clay Sculpture

**EK = Enabling Knowledge**
Knowledge students need in order to perform a sub skill. This knowledge is usually transferred to students through the teacher, however knowledge can come from students as well.

**SS = Sub Skill**
A discrete skill, usually observable, that students must be able perform before they can successfully reach the target aim of the learning progression.

**Critique**
Conversations that occur in a group setting for the purpose of better understanding the creation and meaning of artwork.

*N.* This is the learning progression as planned at the beginning of the study.
Appendix G
Learning Progression Two: Narrative Painting

<table>
<thead>
<tr>
<th>EK</th>
<th>SS</th>
<th>EK</th>
<th>SS</th>
</tr>
</thead>
<tbody>
<tr>
<td>functions of art: personal, social, functional</td>
<td>identify motives for art making</td>
<td>symbols, signs and pictograms: visual communication</td>
<td>create symbols of self</td>
</tr>
<tr>
<td>Discovery Critique</td>
<td>EK</td>
<td>EK</td>
<td>SS</td>
</tr>
<tr>
<td>the value of story telling</td>
<td>narrative painting exemplars</td>
<td>designing personal narrative</td>
<td></td>
</tr>
<tr>
<td>Discovery Critique</td>
<td>EK</td>
<td>SS</td>
<td>Discovery Critique</td>
</tr>
<tr>
<td>color mixing and blending</td>
<td>able to mix and blend color</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SS</td>
<td>Discovery Critique</td>
<td>SS</td>
<td>Final Critique</td>
</tr>
<tr>
<td>apply painting skill to art</td>
<td>apply painting skill to art</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Target Studio Aim
Create a Personal Narrative Painting

**EK = Enabling Knowledge**
Knowledge students need in order to perform a sub skill. This knowledge is usually transferred to students through the teacher, however knowledge can come from students as well.

**SS = Sub Skill**
A discrete skill, usually observable, that students must be able perform before they can successfully reach the target aim of the learning progression.

**Critique**
Conversations that occur in a group setting for the purpose of better understanding the creation and meaning of artwork.

_N. This is the learning progression as planned at the beginning of the study._
# Appendix H
## Study Schedule

**P1: Regular Art Class-Organic Sculpture Learning Progression**

Art Room Studio-Process Documentation: 20 Total Class Encounters = 15 hours

<table>
<thead>
<tr>
<th># 45 min. Classes</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduce Study and Gain Consent/Assent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>September 8</td>
<td>September 9</td>
<td>September 10</td>
<td>September 11</td>
<td>September 12</td>
</tr>
<tr>
<td>5</td>
<td>September 22</td>
<td>September 23</td>
<td>September 24</td>
<td>September 25</td>
<td>September 26</td>
</tr>
<tr>
<td>5</td>
<td>October 6</td>
<td>October 7</td>
<td>October 8</td>
<td>October 9</td>
<td>October 10</td>
</tr>
<tr>
<td>5</td>
<td>October 20</td>
<td>October 21</td>
<td>October 22</td>
<td>October 23</td>
<td>October 24</td>
</tr>
</tbody>
</table>

**P2: Students Analyze Daily Journal Entries: Create MDJ**

| 5 | November 3 | November 4 | November 5 | November 6 | November 7 |
| 5 | December 1 | December 2 | December 3 | December 4 | December 5 |
| 1 | January 5, 2009 Students View Completed Journals as a Team |

---

**P1: Regular Art Class-Organic Sculpture Learning Progression**

Art Room Studio-Process Documentation 19 Total Class Encounters = 14.25 hours

<table>
<thead>
<tr>
<th># 45 min. Classes</th>
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<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduce Study and Gain Consent/Assent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>September 15</td>
<td>September 16</td>
<td>September 17</td>
<td>September 18</td>
<td>September 19</td>
</tr>
<tr>
<td>5</td>
<td>September 29</td>
<td>September 30</td>
<td>October 1</td>
<td>October 2</td>
<td>October 3</td>
</tr>
<tr>
<td>4</td>
<td>October 13</td>
<td>October 14</td>
<td>October 15</td>
<td>October 16</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>October 27</td>
<td>October 28</td>
<td>October 29</td>
<td>October 30</td>
<td>October 31</td>
</tr>
</tbody>
</table>

**P2: Students Analyze Daily Journal Entries: Create MDJ**

| 5 | November 17 | November 18 | November 19 | November 20 | November 21 |
| 5 | December 15 | December 16 | December 17 | December 18 | December 19 |
| 1 | January 5, 2009 Students View Completed Journals as a Team |
### Study Schedule Continued

#### P3: Regular Art Class-Narrative Painting Learning Progression

**Art Room Studio Documentation 21 Total Class Encounters = 15.75 hours**

<table>
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<tr>
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<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>January 20</td>
<td>January 21</td>
<td>January 22</td>
<td>January 23</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>February 2</td>
<td>February 3</td>
<td>February 4</td>
<td>February 5</td>
<td>February 6</td>
</tr>
<tr>
<td>4</td>
<td>February 17</td>
<td>February 18</td>
<td>February 19</td>
<td>February 20</td>
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<tr>
<td>5</td>
<td>March 2</td>
<td>March 3</td>
<td>March 4</td>
<td>March 5</td>
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<tr>
<td>3</td>
<td>March 16</td>
<td>March 17</td>
<td>March 18</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### P4: Students Analyze Daily Journal Entries: Create MDJ

| 5 | March 23 | March 24 | March 25 | March 26 | March 27 |
| 5 | April 27 | April 28 | April 29 | April 30 | May 1 |
| 1 | May 18, 2009 Students View Completed MDJs |

---

#### P3: Regular Art Class-Narrative Painting Learning Progression

**Art Room Studio Documentation 22 Total Class Encounters = 16.5 hours**

<table>
<thead>
<tr>
<th># 45 min. Classes</th>
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<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
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<td>January 30</td>
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<tr>
<td>5</td>
<td>February 9</td>
<td>February 10</td>
<td>February 11</td>
<td>February 12</td>
<td>February 13</td>
</tr>
<tr>
<td>5</td>
<td>February 23</td>
<td>February 24</td>
<td>February 25</td>
<td>February 26</td>
<td>February 27</td>
</tr>
<tr>
<td>5</td>
<td>March 9</td>
<td>March 10</td>
<td>March 11</td>
<td>March 12</td>
<td>March 13</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>March 19</td>
<td>March 20</td>
</tr>
</tbody>
</table>

#### P4: Students Analyze Daily Journal Entries: Create MDJ

| 4 | April 14 | April 15 | April 16 | April 17 |
| 5 | May 11 | May 12 | May 13 | May 14 | May 15 |
| 1 | May 18, 2009 Students View Completed MDJs |
Appendix I
Reflective Writing Template

Painting Title: _____________________________ Student ____________________

Planning Ahead: Tell us about how you planned your painting. For example, what did you want to include and why did you arrange the pictures the way you did? Write three sentences that describe how you planned your painting.

Making Connections: How did the artwork of others influence you as you made your painting? Did you get an idea from Chagall, Ringgold, or Ms. McComb? Did something you saw in class give you a great idea? Write three sentences that describe specific ways you connected your ideas to others.

Expression: What moods or feelings did you hope to show in your painting? Is there something in your painting that has very personal meaning only to you? Tell us what you hoped others would learn about you when looking at your painting.

Reflection: As you look back and think about your painting, tell us how you worked to make your painting meaningful to you. For example, did you use certain colors, or make changes as you went that would make your ideas easier to understand? Three sentences that tell us what you were thinking as you worked on your painting.

Additional Thoughts you may have about your painting.
## Appendix J
### Transcription Template

<table>
<thead>
<tr>
<th>W/M</th>
<th>Evidence of Artistic Thinking Found in Phase IV Movie</th>
</tr>
</thead>
<tbody>
<tr>
<td>JUL/2009</td>
<td>W=Writing, P=Photo, D=Drawing, N=Narration</td>
</tr>
</tbody>
</table>

### Date Frames 1-30

<table>
<thead>
<tr>
<th>Frame</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>Envision</td>
</tr>
<tr>
<td>S2</td>
<td>Observe</td>
</tr>
<tr>
<td>S3</td>
<td>Understand the World</td>
</tr>
<tr>
<td>S4</td>
<td>Stretch &amp; Explore</td>
</tr>
<tr>
<td>S5</td>
<td>Engage &amp; Persist</td>
</tr>
<tr>
<td>S6</td>
<td>Express</td>
</tr>
<tr>
<td>S7</td>
<td>Reflect</td>
</tr>
<tr>
<td>S8</td>
<td></td>
</tr>
<tr>
<td>F1</td>
<td></td>
</tr>
<tr>
<td>F2</td>
<td></td>
</tr>
<tr>
<td>F3</td>
<td></td>
</tr>
<tr>
<td>F4...</td>
<td></td>
</tr>
</tbody>
</table>
VITA

Camilla McComb

EDUCATION

2010 Pennsylvania State University, Ph.D in Art Education
1995 Miami University, M.A. in Art Education
1985 The Ohio State University, Bachelor of Art Education

LICENSE/CERTIFICATES (partial listing)

2006 National Board Certification, Early and Middle Childhood/Art: 12/13/2006-12/13/2016
   National Board for Professional Teaching Standards: Arlington, VA

PROFESSIONAL EXPERIENCE (partial listing)

2003- The Intermediate School, Art Teacher (5-6), Central Ohio
1995 Pennsylvania State University, Graduate Teaching Assistant, University Park, PA
   Instructed Art Methods for the Elementary Teacher and assisted with the Saturday Art Program
1994 Miami University, Graduate Teaching Assistant, Oxford, OH
   Instructed 2-D and 3-D Design Courses

HONORS (partial listing)

2008 Master Teacher Designation, Ohio Department of Education

PUBLICATIONS

McComb, C. Contributor to the forthcoming text Practice theory: Seeing the power of teacher researchers.
   (Eds.). M. Buffington & S. Wilson McKay to be published by the National Art Education Association.

McComb, C. Contributor to the forthcoming text The heart of art education. (Eds.). L. Campbell & S.
   Simmons to be published by the National Art Education Association.


   discipline. Art Education, 59(4), 6-12.

PROFESSIONAL PRESENTATIONS (partial listing)

2010 Think, record, reveal: Sixth grade students’ artistic thinking. Presented at the National Art
   Education Association Conference in Baltimore.

2009 Sixth grade “moving journals” & formative studio-process assessment: A multimodal approach.
   Presented at the National Art Education Association Conference in Minneapolis.