EDUCATIONAL CHANGE: DEVELOPMENT OF A CREATIVITY ENCOURAGING PEDAGOGICAL FRAMEWORK FOR A STANDARDS-BASED MIDDLE SCHOOL ENVIRONMENT

A dissertation submitted to the Kent State University College of Education, Health, and Human Services in partial fulfillment of the requirements for the degree of Doctor of Philosophy

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August 2016
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Dr. Kyung Hee Kim’s analysis of the Torrance Test of Creative Thinking concludes there has been a steady decline in all aspects of creativity in all age ranges of the American (U.S.A) population since the 1980’s. It has been suggested that this decline may be linked to an over emphasis of memorization skills and the lack of creative development in the U.S. educational curriculum.

This Constructivist Grounded Theory study sought to explore the educational change of 14 teachers in one unique middle school environment in the Midwest with the aim of encouraging creative productivity in students. Data from 3 focus group interviews, 4 individual interviews, and the collection of lesson plans showing the development of units from both focus groups and individual participants was analyzed. The analysis of data revealed patterns which are present in the substantive theory, *The Theory of Middle School Teachers’ Encouragement of Creativity in a Standards-Based Educational Environment*. Findings reveal creativity can be encouraged in students in a standards-based middle school educational environment and also prepare students to pass standardized assessments.
ACKNOWLEDGEMENTS

Writing this dissertation was a long and trying process, which I could not have done without the help and support of God, family, friends, advisors, and participants. Praise God from whom all blessings flow! Thank you God for giving me the aptitude and patience for this process. I am thankful to my dissertation advisor, Dr. Kroeger who made sure I would finish this process. Thank you to Dr. Crowe and Dr. Tankersley for having faith and believing in me.

I’d like to thank my family for their encouragement. Thank you to my beautiful wife, daughter, and son for their constant support through the ups and downs of this rigorous process, for all of the hugs and kisses, and positive reinforcement and energy. Your love made all the difference. Thank you my Mom, Dad, Ernie, Elbert, Cynthia, all of my grandparents, aunts and uncles, John, Samantha, and Sophia for your prayers and words of encouragement.

Last, but not least, thank you to all of the participants who lent their voices to this study. Keep encouraging creativity in your students. You are making a big difference.
TABLE OF CONTENTS

ACKNOWLEDGEMENTS .......................................................................................................... iii

LIST OF FIGURES .................................................................................................................. vii

CHAPTER

I  INTRODUCTION .................................................................................................................. 1
  World Matters in Need of Creative Solutions ................................................................. 1
  The World Economy ......................................................................................................... 1
  Water Shortage ................................................................................................................ 1
  Species Extinction .......................................................................................................... 1
  Climate Change .............................................................................................................. 1
  The U.S. and Creativity in Education .............................................................................. 4
  First Generation of Creativity Research in the U.S.A. ................................................ 5
  Second Generation of Creativity Research in the U.S.A. ............................................... 14
  Statement of the Problem .............................................................................................. 21
  Purpose of the Study and Research Questions ............................................................. 30
  Significance .................................................................................................................... 31
  Definitions and Terms .................................................................................................... 32
  Summary ........................................................................................................................ 35

II  CONCEPTUAL FRAMEWORK ......................................................................................... 37
  Introduction .................................................................................................................... 37
  Educational Change ....................................................................................................... 39
    Concepts in Educational Change .............................................................................. 40
    Curriculum and Educational Change ..................................................................... 42
    Creativity Encouraging Pedagogy as Educational Change .................................... 44
  Symbolic Interactionism ............................................................................................... 47
    History of Symbolic Interactionism .......................................................................... 47
    Concepts in Symbolic Interactionism .................................................................... 50
  Symbolic Interactionism, Educational Change, and the Teacher ............................ 52
  Summary ........................................................................................................................ 55

III  METHODOLOGY ............................................................................................................. 56
  Research Questions ....................................................................................................... 57
  Research Methods ......................................................................................................... 58
  Rationale for Choosing Constructivist Grounded Theory ........................................... 60
  Participant Selection ................................................................................................... 61
IV  ANALYSIS OF THE FINDINGS ................................................................. 86
The Science Middle School .................................................................... 87
  History and Purpose ........................................................................... 87
Themes Influencing the Encouragement of Creativity in Students ............... 88
  Prior Meaning Making Experiences ................................................... 89
  Development of Reference Group Perspective ................................. 96
  Organization of Situations for Interactions ....................................... 100
  Designing the Creativity Encouraging Pedagogy .............................. 107
  Development of Meanings .................................................................. 124
Interpretations of Teaching and Learning.................................................. 131
  Additional Creativity Encouraging Resources .................................. 153
  Summary of Underpinnings to Encouraging Creativity ...................... 157
  Overview of Substantive Theory ......................................................... 158
  Summary: Preparation ........................................................................ 175
  Stage Two: Implementation ................................................................. 176
  Summary: Implementation ................................................................. 189
  Stage Three: Reflection ..................................................................... 191
Conditions Impeding the Encouragement of Creativity ................................ 192
Summary ................................................................................................ 196

V  DISCUSSION AND IMPLICATIONS ..................................................... 198
Discussion ................................................................................................ 200
  Initiating and Implementing the Encouragement of Creativity in Students 200
  Stages and Processes of Encouraging Creativity ................................ 202
  Encouraging Creativity from an Individual Domain Versus Collaborative 209
  Team .................................................................................................. 209
  Impeding the Encouragement of Creativity in Students ...................... 212
Implications ...................................................................................................................... 212
Suggestions for Future Research .................................................................................. 213
Summary ........................................................................................................................... 214

APPENDICES .................................................................................................................. 215
APPENDIX A FOCUS GROUP RESEARCH QUESTIONS ........................................... 216
APPENDIX B INDIVIDUAL RESEARCH QUESTIONS ............................................. 218
APPENDIX C INFORMED CONSENT ........................................................................ 220
APPENDIX D AUDIOTAPE CONSENT FORM ......................................................... 225

REFERENCES .................................................................................................................. 227
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>FIGURE</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Conceptual framework of this study: the relationship between this study</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>curriculum and instruction, and creativity studies</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>The Theory of Middle School Teachers' Encouragement of Creativity in a</td>
<td>159</td>
</tr>
<tr>
<td></td>
<td>Standards-Based Educational Environment</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Stage One Preparation: Process of Planning</td>
<td>160</td>
</tr>
<tr>
<td>4</td>
<td>Stage Two Implementation: Process of Exploration and Discovery</td>
<td>176</td>
</tr>
<tr>
<td>5</td>
<td>Stage Two Implementation: Process of Sharing Out</td>
<td>185</td>
</tr>
<tr>
<td>6</td>
<td>Stage Three Reflection: Process of Deliberation</td>
<td>191</td>
</tr>
</tbody>
</table>
CHAPTER I
INTRODUCTION

“…curriculum must be seen as central to the maturing process of the human race”

(Schubert, 1986, p. 6)

World Matters in Need of Creative Solutions

The World Economy

The global economy is in a fragile state. The global economy remains vulnerable to geopolitical shocks, and threats of stagnation in Europe and the continued slowdown of Chinese exports.

Water Shortage

Water shortage is the number one global risk based on its potential impact on society. Problems such as the rapid growth of the human population, industrial pollution, chemicals from agricultural spill off, and poor civic planning have decreased the overall water supply. Currently, one out of nine people lack access to clean water.

Species Extinction

Several species that human beings depend upon for food are in danger of extinction; if their numbers fall too low it may put human beings at risk.

Climate Change

Global warming has been supported by data and is considered an empirical fact. This problem will either bring people together or people will face mutual destruction.
The problems listed above are just a few of the unanswered issues in the world today that are in need of solutions. Left unanswered problems such as these have the potential to threaten the future of the world. Education is one of the primary weapons of human culture for solving the problems of the world. Walker (2003) explains that as a result of educational curriculum, “Students will be shaped by the purposes for which we teach a subject as well as by what we teach them” (p. 13). Curriculum is the ordering of content and purposes for teaching and learning in schools. Content is what teachers and students concentrate on during teaching and learning; while, purposes are the intentions for teaching content (Walker, 2003). Therefore, the purposes of the curriculum are the answers to the timeless curriculum question: What knowledge is of most worth? Looking at the problems above, it is clear there is no easy answer. However, Ken Robinson (2011), one of the leading figures in the contemporary movement to integrate creativity into the educational curriculum believes, “To face these challenges we have to understand their nature; to meet them we have to recognize that cultivating our natural powers of imagination, creativity and innovation is not an option but an urgent necessity” (p. 19). He suggests in his writing that there is a need for change in education, that the encouragement of creative productivity in students, and the contributions it has to the educational process, have a great deal to offer in providing solutions for the present and in the future. Robinson (2011) wrote,

Our times are being swept along on an avalanche of changes. To keep pace with these changes, we will need all our wits about us. It is often said that education and training are the keys to our future…To realize our true
creative potential—in our organizations, in our schools, and in our communities—we need to think differently about ourselves and act differently towards each other. We must learn to be creative (p. 286)

Research on cognition shows there are two distinct ways of thinking—convergent thinking and divergent thinking. Convergent thinking leads to right answers and focuses on bringing a variety of sources together to find the one answer. While, divergent thinking produces an array of possible answers. Generally, education has chosen sides on which way of thinking is most important. But, it is my summation that the problems of the world, as listed above, do not have easy solutions; and, as a result, require complex problem-solving skills that include the application of both forms of thinking (Baer & Garrett, 2010). What kind of curriculum must be implemented to cultivate both convergent and divergent forms of thinking in today’s educational environment in the United States of America (U.S.A)?

The top performing educational systems in the world, as measured by the 2011 Progress in International Reading Literacy Study (PIRLS), and the Trends in International Mathematics and Science Study (TIMSS), have sought answers to this question and have discovered a common element in their curricular designs -- they are recognizing the importance of creativity to the development of their youth. China, Singapore, Finland, and Taiwan, highly rated educational performers, are incorporating creativity into their curriculums in very different ways. According to Lim (2012), Singapore is moving toward cultivating curriculum through a holistic approach. Focusing less on content knowledge and more on how to process information (Lim, 2012),
Singapore has gained recognition for its integration of creative skills into its curriculum. Khazan (2012) reveals Singapore’s educational emphasis has shifted toward creative learning. In Britain, there has been a national discussion surrounding the relationship between creative and cultural education for the curriculum (NACCCE, 1999). The National Advisory Committee on Creative and Cultural Education (NACCCE) sparked this national debate. The monumental document *All Our Futures: Creativity, Culture and Education (1999)*, suggests a national strategy for balancing school curriculum to create partnerships between schools and the world. China, known in the past for their standardized education, are having national discussions about reducing high-stress and high-stakes testing by emphasizing the building of creative skills into their curriculums. According to Khazan (2012) Hong Kong’s educational ministry has created the compulsory subject “Liberal Studies” to help their youth master critical thinking and creative skills. Finland has decreased the amount of homework assigned to children so that they may engage in more creative play (Khazan, 2012). These countries are attempting to create better futures for their youth by infusing creativity into their curriculums.

In keeping with these international trends, the U.S.A., has a tradition of research in the area of creativity in education. In the following section below a brief history of the study of creativity is given to document such work in the national arena.

**The U.S.A. and Creativity in Education**

In the U.S. a host of authors, since the 1950s, have written on the topic of creativity in the field of education (e.g., Beghetto & Kaufman [Eds.], 2010; Fasko,
J.P. Guilford was the scholar who initiated this emergence on the study of creativity in his Presidential speech to the American Psychological Association in 1950. This event sparked research into creativity in all fields such as business, engineering, and education. In his speech, he pointed out that the study of creativity had been a neglected area in research and showed evidence that out of 121,000 titles listed in Psychological Abstracts only 186 had something to do with creativity (Guilford, 1950). In his speech he informed the crowd of the importance of creativity, and inspired research into its nature. Since Guilford’s address, the research of creativity in education has seen tremendous growth. This research has evolved through successive generations and continues to spur the complexities of creativity and its relationship to education.

**First Generation of Creativity Research in the U.S.A.**

The first generation of ideas on creativity was initiated with Guilford’s address in 1950 and ended in 1975 (Lynch & Harris, 2001). This generation of thought focused on eminent creativity, the characteristics of the creative person, and divergent thinking as the main result of creative production. Developments of the first generation of research on creativity in education may be seen in the categorization of topics as proposed by Rhodes (1961), who denoted a four-category system to classify research on the topic of creativity. The model classified research on creativity into person, product, process, and press. It was common in the first generation of creative studies to study each of these aspects in isolation (Plucker & Makel, 2010). Guilford and other researchers utilized and developed psychometric approaches to distinguish the creative characteristics of the individual.
Plucker and Renzulli (1999) wrote, “The primary cause of the predominance of psychometric perspectives is probably that the researchers who first became interested in creativity were already approaching other phenomenon from the psychometric perspective and continued with their methodological habits as they began to investigate creativity” (p. 36). The psychometric approach began with inquiries into the nature of intelligence. Kozbelt, Beghetto, and Runco (2010) report, “Psychometric approaches are concerned among other things, with reliability and validity of assessment, which are issues in the scientific work of creativity” (p. 29). Plucker and Renzulli (1999) write, “…psychometric studies of creativity conducted in the past few decades form the foundation of current understandings of creativity” (p. 35). Psychometricians sought the same empirical methods for measuring creativity as was found in the measurement of intelligence. Therefore, a key aspiration of Guilford and his protégé Paul Torrance was to utilize the psychometric approach to measure understand creativity and its relation to teaching and learning. First generation developments regarding creativity in education focused on individual creative potential. The concept of creative potential refers to the belief that everyone has the ability to express creativity to a certain degree. This idea lead to the general consensus that creativity could be developed as an educational goal (Beghetto, 2010). Teaching and learning, in first generation thought, seemed to be centered largely on the creative person and the creative process (which lead to products to identify such persons) and the characteristics of individuals.

As a first generation scholar, Guilford championed the development of student creative potential, and had concerns about it being discouraged in schools and
classrooms. Guilford believed learning to be creative was like acquiring skills in other domains. In his essay *Can Creativity Be Developed (1958)* he wrote, “Much better than special courses on creative thinking and special techniques would be increased attention to creativity incidental to common subject matter” (p. 168). According to Fasko (2000/2001), one of the main questions Guilford asked in his 1950 speech to the American Psychological Association was, “Why is there so little apparent correlation between education and creative productiveness” (p.444)? In an article in the *Journal of Creative Behavior*, Guilford (1967) brings to light, “The problems of creativity in the educational setting are endless…” (p. 10). In an attempt to get to answers to these questions Guilford used factor analytic methods to develop his Structure of Intellect model (SOI) through which he identified three basic dimensions of intelligence: operations, content, and products. Important to creativity was the operation of divergent production. According to Sternberg and O’Hara (1999), “Divergent Production involves a broad search for information and the generation of numerous novel answers…” (p. 252). To measure divergent production Guilford identified factors such as Sensitivity to Problems, Fluency, Flexibility and Originality (Sternberg & O’Hara, 1999). One of the lasting effects of Guilford’s work is the creation of paper and pencil or divergent thinking tests to capture and measure creative production. As a result of Guilford’s findings, divergent thinking became synonymous with creativity, even though this was not Guilford’s intent (Kim, 2006), and became the means by which creativity would be studied, of which his followers, like Paul Torrance expanded, refined, and modified.
From his research Guilford (1968) concludes the educational context is appropriate for creativity research. According to Isaksen (1987) Guilford wrote:

Of all environmental influences on the development of creativity, education has received special interest. It is the business of education more than any other institution to determine to what extent creativeness and creative production can be improved and how this shall be done: It is apparently no longer doubted that there can be improvement in creative thinking and problem solving. There is increasing realization of education’s responsibility in this direction (p. viii)

Arieti (1976) describes Torrance as the scholar who conceived of education as being a relationship between teacher and pupil based on creativity and instructional approaches. Torrance stood on the shoulders of Guilford in the continuing effort to solidify creativity research as an empirical endeavor in education. Paul Torrance followed Guilford’s example, in a pursuit of optimizing educational opportunities of students to develop their creative capacities. He, like Guilford, utilized divergent thinking tests to explain creative production. Torrance is known for the creation of the Torrance Test of Creative Thinking (TTCT), a battery of IQ like items used to measure individual creativity, usually scored by a teacher or individual psychologist. The TTCT is the most widely used test of creative skills in education to date; such work largely brought the assessment of the “gifted and talented” into the realm of the educable segment of the public school and special education population (Baer, 2013). Based off of Guilford’s divergent thinking tests, TTCT consists of a battery of tests that are scored for fluency, flexibility,
originality and elaboration. Fluency represents the number of ideas the individual is capable of producing, flexibility represents the diversity of perspectives represented in the ideas represented, originality represents the infrequency of the ideas presented, and elaboration is building upon the ideas presented. TTCT has been used in education mostly for the assessment and identification of gifted students, but it was originally planned for use in the individualization of students (Kim, 2006). Because creativity was thought to be a development of highly intelligent individuals TTCT became the test to identify individuals of high intelligence and to develop their creativity. According to Kim (2006), “Torrance’s main focus was in understanding the nurturing qualities that help people express creativity” (p. 4). Regarding the ability to nurture creativity through education and instruction Torrance (1972) wrote,

The most successful approaches seem to be those that involve both cognitive and emotional functioning, provide adequate structure and motivation, and give opportunities for involvement, and practice, with teachers and other children. Motivating and facilitating conditions certainly make a difference in creative functioning but difference seem to be greatest and most predictable when deliberate teaching is involved (p. 203)

Another addition of Torrance’s work on education and instruction was the identification of the “fourth-grade slump.” He listed educational hindrances such as conformity and achievement motivation to have a negative impact on creative thinking, and stated this as well as other reasons for the sharp decline in boy’s achievement in
middle school. Torrance (1968) denoted the age and grade related disinterest of middle schoolers, and like Guilford, showed how the rigid situation of schooling and standardization of approaches to teaching had a negative impact on the development of student creative potential. Furthermore, through his efforts, Torrance found several characteristics of American schooling to hinder the development of creativity. These distinctive qualities include: the misconception that divergence is synonymous with abnormality, the underlying orientation in education on success rather than achievement, and student peer pressure, which exerts the most pressure on youth to conform. Arieti (1976) reveals that Torrance’s work exposed five principles that benefit teachers who wish to promote creativity. Principles for teachers to reward creative thinking include:

1. Treat unusual questions with respect; 2. Treat unusual ideas with respect; 3. Show children that their ideas have value; 4. Provide opportunities for self-initiated learning and give credit for it; and, 5. Provide periods of non-evaluated practice or learning (p. 364)

These and other observations developed a foundation for understanding creativity in the educational environment, and more instrumentally laid a foundation to address problems in the educational environment.

Another interesting first generation development at around the same time as Torrance’s discoveries was a study by Jackson and Getzels (1962) which provided an alternative understanding of creativity and its relationship to intelligence and education. Before the Getzels and Jackson study it was generally thought that creativity was a subset of intelligence. As a result, it was a common belief that only highly intelligent people
were creative. Getzels and Jacksons’ study sent shock waves through the research community with contrary conclusions.

The focus of Getzels and Jackson’s (1962) study was to conduct an empirical examination of, “…the consequences of applying other conceptions of giftedness as well as ‘high IQ’ to the study of children” (p. 8). In their study they distinguished two groups of students: one high in intelligence, but not in creativity; and, one high in creativity, but not in intelligence. Their goal was to study student behavior in school, their values, their imagination, and their family structures. They deduce that a student can be high in intelligence and not creativity, and high in creativity, but not in intelligence, leading to the conclusion that intelligence and creativity may be separate. In fact, Sternberg and O’Hara (1999) recognized that creativity and intelligence are not correlated above the IQ of 120. Therefore, it is likely that individuals with a superior IQ may not be creatively gifted. However, it is also likely that a student low in intelligence may be creatively gifted.

Getzel & Jackson (1962) reveal that their data shows there are other forms of excellence in education other than intelligence, and focused efforts could be marshalled for all students, not just those with high IQ scores. Moreover, they raised the issue that education may be damaging to those who demonstrate creativity showing that teachers possess negative biases (and behaviors) toward creative children in schools. They proved that teachers desired the characteristics of the highly intelligent children over the highly creative children.

As a result of psychometric studies, an elevated interest in the discovered aspects
of creativity that could be developed in the classroom emerged. In the 1960s for example, curriculum theorists began attempting to make sense of what had been learned about creativity and began theorizing as to how it could be developed in the classroom. In her synoptic text, Hilda Taba (1962), a contemporary of Guilford, expressed the importance of cultivating creativity in education outside of the aesthetic arts experience (in other words, into the common subject matter curriculum, in further work described as domain specific creativity). She utilized Guilford’s Structure of Intelligence model in her discussion of creative productive learning to suggest implications in curriculum and instruction. Taba (1962) concluded that creativity extends the scope of learning and cultivates the human experience. Utilizing the conception of creativity of her times, she developed processes by which creativity could be integrated into curriculum and instruction by all students and all teachers. She wrote:

…one could visualize teaching which encourages learning by discovery by reorganizing and transforming evidence in such a way that one is enabled to go beyond the evidence so reassembled to additional new insight (Bruner, 1961; Taba, 1962). Such learning is characterized by active experiencing of inquiry: by structuring the very method of attacking problems, by looking for regularities and reasonable patterns, by using previous experience in the search (p. 155)

Around the same time Taba was developing ways to integrate creativity into the curriculum, Alice Miel (1967) was also developing an understanding of teaching as a creative process. In her anthology, Creativity in Teaching, Miel (1967) brought together a
number of educational theorists in a symposium on the process of creative teaching. Meil (1967) wrote:

The world around the classroom changes constantly; the teacher himself changes. The teacher has abundant opportunity to ‘be creative’ in the way he deals with all of these changing conditions. If he deliberately rejects the alternative of falling back on an unthinking, habitual response and instead consciously makes a decision based on examination of the old and the new factors present in a situation, he is engaging in a creative process (p.8) Miel references Dewey and Dewey’s conceptualization of experience in education stating, “Creativity in teaching can thus be judged by the quality of opportunities actually provided by a teacher for young people to have educative experiences” (p. 7). In the late 1960s to the mid 1970s the teaching of creativity moved from the isolated classrooms of the gifted and talented programs to the educational mainstream, promoting a more active role of all teachers in expanding their instructional approaches called the Open Schools Movement.

According to Silberman (1973), The Open Schools Movement of the 1960s and 70s was “the keystone in the arch of educational reform” (pp. 2-3). It was characterized by distinguishing features such as creative pedagogical methods, the integration of creativity into the curriculum (according to what was known at the time), and the re-engineering of learning spaces (Cuban, 2004). This child-centered educational movement stressed open space such as nooks and crannies, where individuals and small groups could learn and work at their own pace. It stressed the belief that teacher-led classrooms
were destroying student creativity and imagination (Cuban, 2004). Classrooms became home-like settings, the incorporation of learning centers, teachers worked with multi-aged groups, and students could pursue their interests. Peters (1975) wrote, “Open classrooms coupled with creative teaching methods appear to generate for learners more interest as well as intellectual power which is associated with curiosity and creativity rather than inhibition and conformity” (p. 114). Also, the reform saw the development of new academic areas and courses, working as a community, and teachers acting more as coaches than instructors (Cuban, 2004).

The problems that surfaced form the Open Schools Movement came from the informal nature of the schooling that had been conceived. The Open Schools Movement was charged with a lack of organized curriculum and rigor. The peak of the open classrooms movement was around 1974, and by the 1980’s it became a historical footnote (Cuban, 2004). Although the Open Schools Movement came to an end in the late 1970’s many lessons from Guilford, Torrance, Taba and others were learned as this exploration and understanding into integrating creativity and education remained. Although there was a general consensus that creativity could be developed in the classroom, the definitive answers as to promoting the development of student creative potential did not take hold in the classrooms in the US.

**Second Generation of Creativity Research in the U.S.A.**

The second generation of scholarship on creativity started in 1975 to our present times, and it has focused on strategies to foster the development of creative potential and creative productivity in individuals (Lynch & Harris, 2001). In second generation
scholarship, creativity is no longer viewed as a quality of eminent individuals (i.e. creative persons). Rather, the research into everyday creativity has provided evidence that creativity is a quality everyone possesses to some degree and that everyone needs to become a better human being.

By far the most significant finding of the second generation of creativity for education is the concept of “everyday creativity” (Richards, Kinney, Benet, & Merzel, 1988), a neglected concept from the first generation of creativity (Barron, 1969). The rediscovery of “mini-c” or everyday creativity has changed perceptions in the second generation of creativity research of how creativity can be used in the classroom. Mini-c creativity or personal creativity is the type of creativity found in the average person. Runco (2003) writes, “It reveals creativity is not just a characteristic of eminent geniuses nor even only productive professionals, but everyone has the capacity to be creative” (p. 321). Mini-c creativity emphasizes original and personally meaningful interpretations (Beghetto and Kaufman, 2007). Richards (2010) writes, “A teacher, for example, may want to assess learning based on where the student started, looking at creative product and the process steps along the way” (p. 193). This focus on individual understanding shows how mini-c creativity can be used as a guide in the classroom. Beghetto and Kaufman (2009) have connected the ideas of Big-C and mini-c creativity in their Four C Model of creativity. In the Four C Model they propose a developmental progression that begins with mini-c creativity, moves to little-c creativity, then to Pro-c creativity and finally Big-C creativity. The model’s intent is to provide a framework for conceptualizing and classifying various levels of creative expression and points to paths of creative
maturation (p.6). The second generation has brought light to the more personal aspects of creativity by focusing on creative potential and how it can be developed. It has gone beyond an emphasis on intelligence and personality and into the realm of the everyday classroom practice. The widely accepted consensus is that creative skills can be taught, learned, and enhanced in teaching (Amabile, 1983).

The second generation of creativity research in education has led to further studies of creativity in the field of teaching and learning. This generation of thinking and teaching produced further insights into the relationship between creativity and education. For example, new ways of looking at the conception of Rhodes’ (1961) categories of product, press, person, process, produced, were developed. As a result, today these categories of creativity are no longer viewed in isolation and creativity has come to be viewed as multidimensional.

One teaching approach, *The Creative Problem Solving Model* (CPS) of instruction developed by Osborn (1953) and further developed by Isaksen and Treffinger (1985) is an interaction of creative thinking and critical thinking. Puccio and Cabra (2010) explain, “In this way, CPS is intended to provide individuals and groups with an explicit creativity model that complements and enhances their innate creative-thinking skills” (p. 160). Research has also helped show creativity is dependent upon both nature and nurture. This is revealed by the confluence and systems models of creativity, which are major developments in the second generation of creative studies. Confluence models of creativity suggest multiple components must converge for creativity to occur (Sternberg & Lubart, 1999). The confluence of diverse aspects suggest creative expressions is much
more complex and multidimensional than it has generally been viewed as in the past.

A second generation controversy over the focus of teaching to encourage creativity as domain-specific or domain-general has not been decided. The debate is over whether creativity can be taught within methods (i.e. math, science, literature) and/or across all contents of schooling. This debate was highlighted in the *Creativity Research Journal (1998)*.

Creativity as domain-specific or domain-general was the topic of debate in a series of articles in the *Creativity Research Journal (1998)*. In this issue of one prominent journal, two creativity researchers, John Bear and Jonathan Plucker, have a series of disagreements and give their perspectives on creativity as domain general or domain specific, but leave it to the reader to decide for themselves. The domain-general argument proposes creativity is a set of skills that transcend all domains. On the other hand, the domain-general argument claims creativity skills vary from one domain to another, it is likely that both perspectives within education have truth.

The conception of creativity as domain-generality came out of the idea that creativity is similar to intelligence. It was assumed that as intelligence can be viewed from a general ($g$) factor so creativity must have a general character ($c$). Many researchers sought to find this characteristic of creativity to no avail (Torrance 1974).

Plucker (1998) argues for the domain generality of creativity, which predicts positive correlations of creativity among individuals in different domains. He does so by looking at the creative person, the history of creativity, and the purposes behind knowledge and teaching. In Plucker’s view renaissance person is an example of domain
generality. He suggests the interesting development of prevalent examples of the “universal creators” like Leonardo da Vinci, Benjamin Franklin, and Thomas Jefferson show how creativity works across disciplinary boundaries. He contends, the individual’s ability to take knowledge and transfer it from one discipline to another is evidence of general character of creativity. This idea has been further developed in discussions of creativity with experts from the areas of computer science, visual arts, and the literary arts in which almost all of them mention the same traits and skills necessary in their domains (Baer & Kaufman, 2005).

The problem with domain specificity, according to Plucker and Zabelina (2009), is its relationship to the goal of education. He refers to Resnick (1987), who proposed that the goal of school learning is “to teach general, widely usable skills and theoretical principles” (p. 15) for the purpose of transferring knowledge from one area to another. He believes as Brown et al. (1989) allude, that by situting knowledge it defeats the purpose of transferable ideas. He writes, “Students should be exposed to a wide range of contexts in which they can develop their creativity in search for an optimal interaction of ability and context” (Barab & Plucker, 2002).

In addition to the ideas listed above, Plucker addresses the notion that the history of creativity studies has assumed that creativity is domain general. He refers to the psychometric approach as an example. The Torrance Test of Creative Thinking (TTCT) is a multidimensional model of creativity that has assumed creativity to be general across content areas. Although there are separate scores calculated from the TTCT (fluency, flexibility, originality, and elaboration), the rationale is that students without a facility for
language of administration can easily complete the figural form of the TTCT (Torrance, 1974). Baer sees things differently.

Domain-specificity (Baer’s perspective) emerged as a major position in creative studies in the 1980’s, and it’s quite different than Plucker’s argument. Mainly influenced by Gardner’s (1983) theory of multiple intelligences, which suggested that individuals are creative in individual domains. Baer (1998) writes, “A growing body of evidence suggests that creative performance is domain specific” (p. 173). His argument for domain specificity rests on the belief that creativity studies have evolved from the domain general perspective, which dominated the first generation of creative studies. He defends this idea by revealing evidence previously showing creativity to be domain general does not support the interpretation. He substantiates his claim by using conclusions from recent research, which shows that the cognitive skills underlying creativity thinking are specific (Baer, 1993). As a result, Baer (1998) concludes, “…we may have to settle for many small theories rather than a single grand one” (p. 173).

Baer’s (2012) argument of domain specificity does not discount that individuals can be creative in many domains, but he shows that this is rare and should not be mistaken for domain generality. To situate this perspective, Baer writes, “Domain specificity does not argue that individuals can only be creative in a single domain; it argues only that creativity in one domain is not predictive (either positively or negatively) of creativity in other domains” (p. 21). He uses Amabile’s Consensual Assessment Technique (CAT) to prove this. The CAT, created by Teresa Amabile (1982, 1996), looks to experts in a field to judge the artifacts of that domain. The CAT technique takes
experts from the field, working independently of one another and using their own judgment, then compare their results. For example, students working on bridges to learn of the strongest construction techniques might have outside engineers evaluate their classroom projects with teacher supportive organization and structure. These assessments of creativity have been conducted in a variety of domains. Regarding domain specificity, Baer (2012) writes, “Despite working alone and without outside guidance, inter-rater reliabilities tend to be quite good…” (p. 20). He points out that these tests show very little evidence for domain general creativity.

Another line of evidence used by Baer (1996) to promote the idea that creativity is domain-specific is in creativity training used to improve divergent thinking skills in specific domains. In a study in which middle school students were trained in poetry, it was found that there was significant gain by the students trained in the concepts, who out performed untrained students (Baer, 1996). But, it was found that the concepts did not transfer because it was found that the training had no effect on the writing of short stories.

Looking at the assessment results of the Torrance Test of Creative Thinking (TTCT), Baer (2012) suggests there may be a need for multiple measures. Contrary to the beliefs of Plucker, findings in line with evidence by Torrance, show no correlation between verbal and figural divergent thinking scores. He suggests the TTCT may have been interpreted incorrectly “…producing many unreliable and invalid decisions in such arenas as admission to gifted and talented programs” (pp. 24-5).
This debate has wide-ranging implications for teaching and learning. Plucker (1998) wrote, “Determining whether creativity in one context is independent of creativity in other contexts has numerous implications for the study of creativity and for the design of educational programs that seek to stimulate, enhance, or maintain students’ creative abilities” (p. 181). Current trends in creativity studies favor the domain-specific view of creativity (Sawyer, 2011). Research in creativity shows that a growing number of researchers are adopting this domain specific view. The idea of domain-generality has taken the backseat in the discussion of domain-general versus domain-specific, which opens the discussion to a possibility of variety of creativities. Theories that were once seen as domain-general may now need reassessment.

**Statement of the Problem**

Despite all of the effort and energy put into the study of creativity in education in the U.S., as well as an extensive prior history of thought on the matter, there has been more talk about implementing creativity encouraging skills and practices in the classroom than actual study of teacher’s action. Consequently, the relationship between the encouragement of creativity and curriculum, in formal education, has been intermittent and irregular (Smith & Smith, 2010). This may partly be a result of the U.S.A. historical position of curriculum as a battleground, where the priority has been placed on global competition and crises and not on the development of creative skills (Cuban, 2004), and thus there are few practicing sites for such work. The intermittent and irregular focus in education may also partly rest on the evolving nature of creativity, which breeds a lack of agreement of what creativity in education is, and how it manifests.
The U.S.A. has concentrated most of its efforts on skills and scores, and the evaluation of convergent thinking over the last three decades, rather than divergence in thinking. In the U.S.A., known in the past for its inventive and innovative fortitude, there is no national discussion on infusing creativity into the curriculum. According to Goodwin and Miller (2013) “Instruction in U.S.A. classrooms has tended to skew toward teaching routine tasks that follow step-by-step process, rather than encouraging complex and creative problem-solving” (p. 81). Since the advent of *A Nation At Risk* (1984), the trend in teaching has been to focus on content standards and standardized testing. O’Neil and Seldon (1995) wrote, “After *A Nation at Risk* came out, we set out to change what we could through new policies: by increasing graduation requirements, for example. But we found that this first wave of reforms didn't have dramatic effects” (p. 12). Among the national reform efforts that followed *A Nation At Risk* are *No Child Left Behind* (NCLB) and the *Common Core State Standards* (CCSS).

NCLB is recognizable by its defining characteristics: standardization of curriculum, greater teacher accountability, and rigid testing. NCLB began with the laudable goal of helping all groups, including the historically disadvantaged meet basic skills of literacy and numeracy. Signed into law as the *Elementary and Secondary Education Act* (ESEA), its goals were to raise academic standards, to increase accountability of teachers, and student progress, and to prepare all students to attend college. It aimed to “improve the academic achievement of all students,” and close the academic achievement gap. The scientific-based NCLB focused on the academic accountability of districts and schools with a heavy regimen of testing. Central to NCLB
were accountability provisions all schools and districts were to meet by 2014. First, states were required to ensure the teaching of all students by “highly qualified” teachers. A second provision was that all schools and districts were to meet Annual Yearly Progress (AYP). To accomplish AYP all students and subgroups had to meet the states proficiency targets. Subgroups included major racial and ethnic groups, students with disabilities, low-income students, and students with limited English proficiency. Ninety-five percent of the student body was required for testing under the laws with a one hundred percent passing rate. Schools that failed to meet the proficiency targets were subject to a series of punitive sanctions. Ahn and Vignor (2013) list six levels of sanctions, starting with schools being placed on academic watch to a final and more significant level of total restructuring of the school. According to the Cable News Network (2011):

   Education Secretary Arne Duncan… estimates that four out of five schools in the United States will not make their "No Child Left Behind"
   benchmarks by the law's target year of 2014--and when the test scores are counted for the current school year, numbers could show that U.S. schools are already at that failure rate (para. 1)

The overemphasis of standardized testing and lack of funding has led to narrowing of school curriculums. In order to meet the math and reading proficiency mandates, many school districts have taken money and time away from their arts programs to increase the development of math and reading skills of the students. These changes did not increase academic performance in the U.S.A, nor did it reduce the achievement gap between white students and their minority counterparts as measured by standardized exams.
The most recent manifestation of classroom and teacher reform in the U.S.A. is the Common Core State Standards (CCSS). Introduced in 2014, CCSS is another standards-based reform placing further constraints on teachers by making them accountable for their students’ performance on standardized test. Funded by the Bill and Melinda Gates Foundation, and led by the National Governors Association (NGA) and the Council of Chief State School Officers, this reform claims to emphasize "world class standards." According to Strauss (2013), CCSS represents:

...a tighter and smarter set of standards focused on developing critical learning skills instead of the mastery of fragmented bits on knowledge; it requires a more progressive, student-centered teaching with strong elements of collaborative and reflective learning, and it equalizes the playing field by raising expectations for all children, especially those suffering the worst effects of the "drill and kill" test prep norms of the recent past (para. 1)

Although it is too early to tell whether CCSS will survive or fail, there are signs that it may meet the same if not a more terrible fate than NCLB. Diane Ravitch, once a staunch supporter of standards based reforms, refuses to support the CCSS on the grounds that it is experimental. Ravitch (2014) disagrees with the way in which the standards were conceived, criticizing the “…lack of any democratic process for writing, reviewing, and revising the standards…” (para. 3). She also disapproves of the amount of time the exams will take, subjecting third graders to an eight-hour test, and high school student to a ten-hour test. Moreover, she emphasizes that the plan to test students in
kindergarten is absurd. CCSS, she writes, “will turn out to be the money pit that consumed education” (para. 13).

Others in opposition to CCSS claim the standards have unreasonable goals. The one-size-fits-all curriculum ignores differences among students across the U.S. Other detractors believe there was no public debate surrounding the implementation of CCSS, that states were coerced into adopting them by the Race to the Top grants and charter school waivers. Race to the Top funding provided by the federal government provides millions of dollars toward college- and career-ready academic standards, thus indirectly supporting CCSS. In effect, the rise of CCSS represents a top-down takeover of local educational systems. Thus, a wholly convergent approach to teaching is taken in the U.S.A.

The convergent style of teaching and learning, prevalent today in the U.S.A., has a pattern, which encourages the development of fact-based knowledge, but ignores, for the most part, the encouragement of creativity in students. Mehan (1979) has named this pattern the Initiate, Respond, and Evaluate or “IRE pattern” of teaching. In the IRE process, students wait to be called on by the teacher, share their response, and wait for the teacher to confirm or deny the answer. This efficient use of time is necessary so all content is taught in a timely manner. This educational environment leads teachers to dislike unexpected behaviors that are off the beaten path of the schedule, such as constant questioning from students, and lack of order. Thus the teacher show many of the signs Torrance suggested in his research that are harmful to the development of creativity.
There has been some criticism regarding the emphasis on convergent teaching in the U.S.A. Sternberg (2012) writes, “…perhaps most importantly, this model does not prepare students for the challenges they will face in the changing world…they will need to think creatively and critically…” (p. 210). Sternberg (2012) suggests a teaching model that is critical, creative, practical, and wise thinking. Beghetto (2005) believes, “The pressure to cover curriculum, meet standards, and administer assessments may, inadvertently, result in teachers short-circuiting students’ creative expression” (p. 262). He believes standardization puts student creativity at risk when there are performance goal structures such as ranking students by ability, and emphasizing who is more capable.

Berliner (2012) calls the phenomenon of excessive emphasis on standardized and convergent forms of thinking “Creaticide.” He defines creaticide as the “…national design to kill literary, scientific, and mathematical creativity in the school age population of the United States of America” (p. 79). Berliner (2012) believes creaticide to be an unnatural emphasis on positivist curriculum, high-stakes testing in particular. A result of standardized test preparation, as noted by Berliner (2012), has been the narrowing of curriculum. The narrowing of the curriculum as legislated by the Elementary and Secondary Education Act (NCLB), allows increases in the time dedicated to the teaching of reading and mathematics. Creative subjects such as music and art are squeezed out, resulting in fewer opportunities for children to be good at something, to feel successful, to excel (Berliner, 2012). The poor suffer the most from curriculum narrowing because they have the greatest lack of resources; therefore, the most changes are made to the curriculums of schools in areas of poverty (Berliner, 2012). Noddings (2013) suggests,
“The grim enactment of lessons designed to elicit answers to test questions impedes genuine education” (p. 213). Robinson (2011), like Schubert, insists education must be a change agent, promoting the idea that teachers must encourage creativity in students as preparation for the future.

The encouragement of creativity in education has been viewed as a necessity for the future of youth in the U.S.A. Florida (2002) suggested the U.S. is in the midst of an important transformation from an industrial economy, based on the production of goods and services, to an “information” or “knowledge” economy where the ability to create new knowledge is important. He proposes the driving force in this transformation “is the rise of human creativity as a key factor in our economy and society” (p. 4). He concludes that the ability to create meaningful new forms of knowledge will mark the successful individual of the future. Florida (2007) states:

We can no longer succeed-or even tread water-with an education system handed down to us from the industrial age, since what we no longer need is assembly-line workers. We need one that instead reflects and reinforces the values, priorities, and requirements of the creative age. Education reform must at its core, make schools into places where human creativity is cultivated and can flourish (p. 254) Kaufman et al. (2008) explain that globalization and the resultant competition for goods and services have pushed creativity to the forefront of the workplace. Advances in science and technology far exceed those of prior generations obliging us to become more creative and adapt to a new breed challenges. Technological developments have spawned a quickly changing environment where problem solving and adaptive skills are becoming
more highly prized than in the past. Sternberg, Jarvin, and Grigorenko (2009) write, “Creativity is not only what enables us to come up with new ideas (whatever the field); it is also the skill that enables us to deal with new situations or problems that we have never confronted before” (p. 35). Runco (2004) states, "The flexibility of creative persons is what gives them the capacity to cope with the advances, opportunities, technologies, and changes that are a part of our current day-to-day lives" (p. 658).

As a result of the changing educational atmosphere, Canatella (2004) writes, “The lecturer who fails to stimulate students’ creativity, their being in the world, may be unwittingly inhibiting their cognitive, emotional, and physical well-being; preventing them from realizing their potential” (p. 60). Wagner (2012) explains, “So if we are to remain globally competitive in today’s world, we need to produce more than just a few entrepreneurs and innovators. We need to develop the creative and enterprising capacities of all our students” (p. 4). The creativity of U.S.A. citizens has the potential to act as a new engine of economic growth for the twenty-first century (Wagner, T., 2012).

Sternberg et. al. (2009) insist that creativity not only has societal benefits, it improves the individual’s life by enabling the development of new ideas and aids in adapting to new situations and problems. As a result, creativity researchers believe creativity is an important skill and should be addressed in classrooms and in the U.S.A. curriculum. But, how do teachers make space for the encouragement of creativity in the constrained standards-based environment?

As laboratories for preparing youth to contribute to society, the classroom is a prime environment for encouraging creative productivity in students, alongside the
traditional memorization skills. Tragically, creative thinking has been declining in the U.S.A. since the 1980s (Bronson & Merryman, 2010). Dr. Kyung Hee Kim (2011), professor at William and Mary College, came to these conclusions by conducting an analysis on a battery of the Torrance Test of Creative Thinking (TTCT). Based on her results, Kim (2011) concluded there has been a steady decline in all aspects of creativity in all age ranges. The most significant decline was found in Elaboration, which is related to the ability to build upon ideas, details, and reflective thinking. Kim (2011) reports:

The decrease in Elaboration scores which persists since 1984 indicates that over the last 30 years, (1) people of all ages, kindergarteners through adults, have been steadily losing their ability to elaborate upon ideas and detailed and reflective thinking; (2) people are less motivated to be creative; and (3) creativity is less encouraged by home, school, and society overall (p. 292)

An article in the Daily Beast entitled, The Creativity Crisis (Bronson & Merryman 2011), details an involved discussion on the findings of professor Lee. Bronson and Merryman (2011) speculate that this decline may be linked to an over emphasis of memorization skills and the lack of creative development in the U.S.A. educational curriculum. They believe the standards-based curriculum in the U.S.A. may inadvertently cause teachers to ignore the encouragement of creativity in their students due to the pressures of testing. This is not a new phenomenon. Educational policy makers have traditionally neglected creativity. According to Schubert (1986), in times of economic crisis or fear of loss of status in the world the United States of America (U.S.A.) has resorted to curriculum
reforms based on the traditionalist orientation. Accountability mandates, such as No Child Left Behind (NCLB), and currently the Common Core State Standards (CCSS), in line with traditionalist thought, have placed pressure on teachers to conform to standards. In this atmosphere students are being taught to recall and recognize facts. These skills are important for students to pass the fact-base standardized tests. Darling-Hammond and Rustique-Forrester (2005) argue that fact-based tests pressure teachers to teach to the content on tests. Teachers conform to teaching to the test by following scripts to assure they cover the required material so their students will pass the standardized tests. Thus, focus is placed on convergent forms of thinking.

Robert Sternberg (2012) believes the current high-stakes testing environment has an unnecessary and excessive focus on specific skills and calls the current system of education the Knowledge Store-House Model. In his essay, *What is the Purpose of Schooling*, he lists several reasons why this model of education is lacking. He writes, “…perhaps most importantly, this model does not prepare students for the challenges they will face in the changing world …they will need to think creatively and critically…” (p. 210).

The emphasis of convergent thinking in education, while necessary for building foundational knowledge, is unbalanced and lacks many important skills students will need to survive in the future.

**Purpose of the Study and Research Questions**

Because there is a lack of emphasis today upon creativity in education and very few schools and classrooms specifically carrying out creative approaches to teaching and
learning, this study sought to explore the pedagogical strategies of a school that
encourages creative productivity in their students. In this study, I sought to find out how
teachers encourage creative productivity in students but at the same time prepare students
to pass state standardized tests. My goal was to build upon extant literature of first and
second generational scholars of creativity, and through analysis of qualitative data and
grounded theory method, develop a substantive theory of middle school teachers’
practices to encourage creative productivity in a standards-based environment. The
question this study sought to answer is: How do middle school teachers in a standards-
based environment encourage creativity in their students? Specific related questions
include:

1. What is the curricular process, or are the curricular processes for
   encouraging creativity in students in a standards-based classroom?
2. Does encouraging creativity within teams differ from encouraging
   creativity in individual teachers’ domains?
3. Are there situations that affect teacher’s ability to encourage creativity in
   their students?

**Significance**

This study builds upon the literatures of curriculum studies, creativity studies, and
educational change. It is an attempt to explore more meaningful ways to structure
curriculum toward the preparation of youth for work in the unforeseen future. The
significance of this study lies in America’s capacity to prepare students for the future by
delivering a more rounded education, so they may have the best chance for creating
healthy solutions to the evolving U.S. society and the larger world. Creativity studies has sought a more impactful and consistent role in the field of education, but has been neglected by tradition and unfettered ritual and canonization of education dominated by such movements as NCLB and CCSS. This research study is an attempt to add to the conversation of curricular approaches in standards-based environments by exploring the pedagogical strategies of an institution that promotes divergent as well as convergent outcomes. It is also being conducted to provide teachers and school leaders with teaching alternatives that provide students with the skills to succeed in an evolving U.S.A. society.

Definitions and Terms

Encouraging Creativity through Teaching. I believe that researchers have a silent agreement on characteristics which show a creative act has taken place. First, creativity in student thinking represents something new or novel (Amabile, 1983). Second, creativity must be appropriate to the task. This latter characteristic is defined by the social context. Because second generation scholars of creativity believe creativity to be a confluence of person, product, press, and process (Rhodes, 1961) tasks and student thinking come together. Trilling, E. & Fadel, C. (2009) write:

Creativity and innovation can be nurtured by learning environments that foster questioning, patience, openness to fresh ideas, high levels of trust, and learning from mistakes and failures. Such creative or adaptive responses may begin with the ability to think critically or evaluative, to sense problems or the need to act, to see the gap between knowledge and
understanding, and to see opportunities to create new products or ways of behaving (p. 231).

This dissertation study views creativity in education as a multi-dimensional phenomenon that involves convergent, as well as divergent skills, as well as an interaction of aptitude, process, and environment, which can be encouraged in specific and general ways, which produces novel and appropriate products that are perceptible and accepted within the social context.

Encouraging Creativity. Researchers of the first and second generations of scholarship have used words such as: enhancing, fostering, or teaching for creativity; nonetheless, I choose not to use the words "teaching for creativity" because it implies that the student will be more creative on completion of the activity or training (Gow, 2014). I choose not to use the word "enhance" because it seems too unnatural and artificial. As potentially a third generation scholar, I believe teachers should "encourage" creativity because it suggests that educators can provide an environment supportive of original thought (Noddings, 2013).

Creativity Studies. Creativity Studies refers to the history, philosophy, and sociology of creativity in education. It has been a constantly evolving field influencing teaching and learning. J. P. Guilford introduced Creative Studies in a speech to the American Psychological Association in 1950. Since his speech, the study of creativity in education as developed into a second generation of research. According to Lynch & Harris (2001) the first generation was from 1950 to 1975, the second generation began in 1975 to our present times.
Approaches to Creativity. Creativity can be understood through a number of approaches. These approaches include: psychometric approach, pragmatic approach, cognitive approach, social-personality approach, and confluence approach. The psychometric approach attempts to measure creativity. The pragmatic approach is concerned with developing and understanding creativity. The cognitive approach seeks to understand mental representations and the processes underlying creative thought. The social-personality approach looks at variables related the personality, motivation, and socio-cultural environment. Confluence models believe multiple variables must converge for creativity to manifest.

This latter conception of creativity is the emphasis in this study, and resonates most closely with my philosophical beliefs. Confluence models of creativity hypothesize that there are limits for some components. For example, each individual has a threshold for aptitude or capability to acquire knowledge. Also, some components may counteract weaknesses in others. An example can be seen in the relationship between motivation and environment. The motivation of the individual may counteract environmental weaknesses (Sternberg & Lubart, 1999). Finally, the interaction of components (personality, environment, strength of teaching, individual motivation) can have a positive effect on one another. For example, intelligence and motivation combined with a strong learning environment, may enhance creativity and subsequent learning.
Summary

Alfred North Whitehead (1929) argued against the teaching of inert ideas. He wrote:

“In training a child to activity of thought, above all things we must beware of what I call 'inert ideas' -- that is to say, ideas that are merely received into the mind without being utilized, or tested, or thrown into fresh combinations... Education with inert ideas is not only useless: it is, above all things, harmful... (p. 1-2).”

In the same vein Noddings (2013), argues that creativity is a critical 21st-century goal. Noddings (2013) writes, “Students need a purpose for learning and a reason for remembering, building and using” (p. 213). She claims, "The grim enactment of lessons designed to elicit answers to test questions impedes genuine education" (p. 213). She argues for educators to turn away from narrow thinking and to encourage intellectual inputs. She believes, “Americans should remember that if they want to promote creativity in their students, they should encourage it in their teachers” (p. 215).

In this chapter I have accounted for a reasonable history of creativity and thus also argued as others have across time, that there is a need to study teacher creativity-encouraging pedagogical behaviors, as a countermand for the standardization and convergent tendencies of U.S.A. education. This rationale and purpose is followed by my descriptions of how I understand the terms within the literature and situate research questions. I have also argued within this first chapter that the situated creativity-encouraging behaviors of teachers will result in the creative skills students need to
become responsible members of the U.S. society. Chapter 2 will explore educational change. It also introduces symbolic interactionism as a way to understand teacher’s interactions with one another to make the educational change possible. Chapter 3 details the study’s methodological underpinnings and the chosen method of constructivist grounded theory, linking the problem, theory, and method of data collection and analysis. Chapter 4 provides a descriptions of the themes that emerged from this study. Chapter 5 closes this paper with a discussion of findings and implications for practice, and suggestions for further research.
CHAPTER II

CONCEPTUAL FRAMEWORK

Introduction

The central research question of this study is: How do middle school teachers in a standards-based educational environment encourage creativity in their students? In this study I am not only interested in the teachers’ solutions to encouraging creativity in students, but I am also interested in learning how the school culture for encouraging creativity was developed. Therefore, to explore this question I look to the literatures of educational change, creative studies, and symbolic interactionism. Figure 1 is a representation of how the elements of this study are related. In this study educational change are all of the actions taken by teacher to balance the curriculum by incorporating more divergent thinking skills. The balance of the convergent thinking and divergent thinking skills is what we refer to in this study as creativity encouraging pedagogy. In this chapter I begin the conversation by referring to the literature of educational change because in seeking to encourage creativity in students the school has departed from the traditional educational methods. The literature of educational change is informative to this study by helping to make sense of the planning, implementation strategies, and monitoring of the change process Next, I make an argument for encouraging creativity in a standards-based educational environment as an example of educational change. Creative studies provide insight by exposing the inherent difficulties in the application of creativity in education. Afterwards I look at what research has to say about the teacher’s
role in educational change. Finally, I turn to symbolic interactionism as a way to understand the thoughts and actions of teachers that have sustained the educational change of developing pedagogical strategies for encouraging creativity in students. Symbolic interactionism takes into account the ability of the individual to rethink, recast, views and actions by fitting them to the actions of others. I constructed the research lens as I conducted the study, analyzed, and represented data. It is my intention to offer a fresh critique on the issue of educational change by drawing on the symbolic interactionist perspective. I propose that the development of new curricular actions requires bringing together a group of individuals into a situation, and through their interactions, develop joint actions to conceive a solution.

*Figure 1. Conceptual framework of this study: the relationship between this study curriculum and instruction, and creativity studies*
Educational Change

Educational change has been an issue of interest during the last three decades, especially to educators, policy makers, and researchers who are involved in areas of education. The purpose of educational change is to put something new into practice such as curriculum changes, school improvement, or new school effectiveness strategies (Fullan, 1991). As seen in the literature, educational change takes two forms. The first form of educational change is a “top down” model in which change is imposed by an outside force such as the federal government. The second form of change is “bottom up” or “grassroots” change by which the change is initiated by insiders such as teachers, with the support from outside resources (Fullan, 1994; Wideen, 1994).

Wideen (1994) suggest five areas of educational change: curriculum development, school improvement, school effectiveness, teacher research, and development. Improvement of education from the perspective of curriculum and instruction means the utilization of better curricular materials. School improvement approaches educational change by transforming the conditions in one or more schools. School effectiveness has a concentration on definition of student achievement and the outcomes associated with achievement. In the teacher research approach, the teacher takes an active role in the research of the change process. In teacher development the teacher is active in the development of the educational change rather than one who only implements the changes. In essence, these five areas of educational change are very closely related and work together to provide a broad knowledge of education in general.
Fullan (1991) suggests the following dimensions by which educational change mostly occurs: new curricular materials and teaching technologies, new teaching strategies or activities, and the alteration of beliefs and values. Education change may take place by applying changes to one of these dimensions or to a variety of these dimensions at one time. In his *theory of probing and understanding the meaning of multiple dilemma*, Fullan (1991) gives a process for educational change.

**Concepts in Educational Change**

Fullan’s (1991) theory is composed of three phases: initiation, implementation, and institutionalization. The listing of the phases in this order does not insinuate that they are sequential. In fact, Fullan (1991) describes the phases as loosely coupled and interactive.

Fullan (1991) names three categories of indicators for the initiation of educational change: *relevance, readiness, and resources*. *Relevance* refers to the sentiments of the usefulness of the innovation. Crandall et al. (1986) found that substantial changes are received as far more relevant than simple changes because of the perception that it is worth the effort. *Readiness* details how well mental and physical resources can be harnessed for the educational change to occur. For example, it involves equipment, activities, behaviors, and practices. It also, requires individual teacher knowledge and skill to implement the educational change effectively. Finally, adequate *resources* are necessary for the implementation of the educational change to take place. Resources include financial, equipment, and materials, and time.
Fullan (1991) describes implementation as putting the new educational change (program, idea, set of activities) into action. He lists a variety of ways in which the change may be implemented such as,

...externally imposed or voluntarily sought; explicitly defined in detail in advance or developed and adopted incrementally through use; designed to be used uniformly or deliberately planned so that users can make modification according to their perceptions of the needs of the situation (p. 65).

Fullan (1991) also lists a set of indicators believed to be important to the successful implementation of an educational change. He lists nine critical factors in three main categories. The first category Characteristics of Change has for factors: Need, Clarity, Complexity, and Quality/Practicality. Need represents a good fit between a new program and the district or school needs. It suggests that the people involved in the change must perceive the needs being addressed as significant and have “buy in.” Clarity represents how well the goals and means of the change is communicated. Unclear and unspecified goals can cause frustration and anxiety especially to those who are working for the change to happen. The Complexity of the change represents the degree of the change. Change can be simple or complex. As mentioned above, research shows that complex change has more success than simple changes because it promises to accomplish more (Crandall, et al., 1986). Quality and Practicality are important to change because quality means taking the time to do things correctly, while practicality signifies salient needs or changes that fit well with those involved in the change.
The second category of implementation is Local Characteristics details the social conditions of change. This category has the following factors: District, Community, Principal and Teacher. District denotes changes across the district, which have their origins in decisions made by the Superintendent or district administration. Community changes are those that receive support from the broader community, while school board changes stemming mainly from voting can have an effect on the progress of change. The Principal influences the likelihood of change with their management styles. The Principals position is a complex affair due to the fact that they are required to deal with many sociological and psychological factors. Finally, the teacher can determine implementation of a change as individuals or as a collective group.

The final factor listed by Fullan (1991) having an influence on implementation of an educational change, under the category External Factors is—Government and other Agencies. This factor represents the “top down” policies issued to the society as a whole.

The more factors supporting implementation the more change will be accomplished in practice. Fullan (1991) believes, “…educational change is a dynamic process involving interacting variables over time” (p. 67).

**Curriculum and Educational Change**

Fullan (1991) suggests that the most fundamental level of change is the classroom or teacher level which is closest to instruction and learning. The literature of educational change indicates educational change is multidimensional (Fullan, 1991; Joyce & Showers, 1988). In addition, Fullan (1991) suggests when seeking to affect an outcome, change must occur in practice along with three components or dimensions. The three
components or dimensions necessary for implementing any new program or policy:

1. The possible use of new or revised *materials* (direct instructional resources such as curriculum materials or technologies),
2. The possible use of new *teaching approaches* (i.e., new teaching strategies or activities),
3. The possible alteration of *beliefs* (e.g., pedagogical assumptions and theories underlying particular new policies or programs) (p. 37).

Fullan (1991) puts emphasis on the fact that changes in all three components must be present in order to instigate change in curriculum. Of course, the most visible and simplest of the dimension to implement are the change of materials and resources. However, change becomes more difficult when directed toward teaching styles and approaches, and even more difficult when dealing with changes in beliefs and attitudes. A change in teaching approach or style means teachers must acquire new skills and instructional activities. But, as Fullan (1991) states, “Changes in beliefs are even more difficult: they challenge core values held by individuals regarding the purposes of education; moreover, beliefs are often not explicit, discussed, or understood, but rather buried at the level of unstated assumptions” (p. 42). Related to these components are two different approaches to change.

Fullan (1991) mentions the fidelity approach to change as well as the mutual-adaption approach as distinct approaches to educational change. The fidelity approach indicates that the innovation already exists and the task is to get the individual or group to implement it in the way it was designed to be use for by the developer. Mutual-adaption
also known as the evolutionary perspective represents change as adaptations and decisions are made by the user and as they negotiate their way around policies or programs. In this approach the policies and programs and the situation of the user equally determine the outcome.

There are several important lessons to be learned in relation to curriculum from the literature of educational change. The most obvious lesson is that educational change is multidimensional involving changes in skills, practice, and theory. Consequently, change can vary within an individual as well as within a group. Second, changing people’s conceptions about education is not an easy task because connected to this change is the individuals sense of self and occupational identity. Finally, educational change must entail the three dimensions of beliefs, teaching strategies and activities, and materials if the essential outcome is to be achieved.

**Creativity Encouraging Pedagogy as Educational Change**

The encouragement of creative productivity in students can be viewed as a case of educational change. Research reveals barriers to encouraging creativity in students by exposing factors that are specific examples to obstructions to educational change. Barriers to the encouragement of creativity in education include the teacher’s perceptions and conceptions of creativity, and the perceived effects of assessments on the classroom by teachers.

Plucker et al. (2004) lists widespread myths about creativity, which have an impact on its development in the classroom. One myth is that a person is either born with creativity or not. It is believed that the origin of this myth comes from the research into
eminent individuals. This is a widely held myth by teachers who assume that creativity is a rare trait possessed by only a few students (Fryer & Collings, 1991). Another myth draw from past research is that creative people are susceptible to mental illness. Isaksen (1987) informs us that the ideal that you must be irrational to be creative comes from the belief that to create something novel you must break rules, and to break a rule is a deviant act. Many focus on eminent creators and their alcohol, drug abuse, or mental illness as evidence of this. However, there is no clear evidence that there is a correlation between being creative and mentally ill.

Therefore, the teacher must implement decisions, many of which are affected by forces outside of the teacher. Nickerson (1999) wrote, "The literature on creativity points to many variables...that are believed by investigators to play some role in determining how creative an individual is likely to be" (pp. 407-408). But, while research shows there are many benefits of creativity-encouraging teaching, there is compelling evidence showing that in practice teachers are inhibited by their beliefs and biases. For example, Fryer and Collings (1991) research explored British teacher’ perceptions and attitudes towards creativity. They found that teachers believed that creativity was a rare trait possessed by a few. Westby and Dawson (1995) examined teacher perceptions in a two-part study. They found that teachers have negative views of creativity. In the first study they examined the teachers rating of the characteristics of their favorite and least favorite students. The second study they explored the teacher concepts of creativity. The results of this study show that the students the teachers liked the least were those who showed characteristics associated with creativity. It also showed that while teachers claim to
value creativity, they devalue the characteristics associated with it. Scott (1999) investigated teacher attitudes toward creative children. Using the Scott Teacher Perception Scale (STPS), she found that average creative girls were rated significantly higher than average creative boys. She also found teachers saw the creative students as disruptions and sources of interference. Chan and Chan (1999) conducted a study in Hong Kong to understand how teachers perceived creative students. They found that Chinese teachers valued creative behaviors less than teachers in the U.S. Aljughaiman and Mowrer-Reynolds (2005) examined teacher’s conceptions of creativity and creative students. They found several barriers to the implementation of creativity enhancement in the classroom. They reported teachers confuse the characteristics of high intellectual intelligence with creativity; teachers are unaware of the defining characteristics of creative children; teachers dislike creative behaviors; the teachers did not rate curiosity as a significant creative behavior; and, a majority of the teachers did not believe they were responsible for developing creativity in their students.

A small part of the research examined personality traits of teachers who practice creativity-encouraging teaching strategies. In fact, research shows teachers play an important role in helping to develop the creative potential of their students. Teaching behaviors that draw upon student creativity are highly productive, producing students who make significant achievement gains (Schacter, Thum, & Zifkin, 2006). Schacter, Thum, and Zifkin (2006) looked at the relationship between creative teaching and student gain. The results of their study show that out of the forty-eight teachers in their study majority of the teachers did not implement teaching strategies that foster creativity, but
the teachers that did turn out student who make substantial achievement gains. It was also found that the classrooms with a high percentage of minorities received less creative teaching. Hong, Hartzell, and Greene (2009) found that the teachers who enjoy working creatively produce an increase in their student’s creative thinking. They also found that the teachers with complex ideas about the nature of knowledge were related to creativity-encouraging teaching strategies.

Assessments have taken a prominent role in U.S. classrooms, especially those test mandated by the federal government. Research shows that assessments take up a great deal of time in the classroom with preparing students, implementation of the test, and the communication of results to the many stakeholders. Research shows that these pressures on teachers to focus on testing results lead to the teacher’s neglect of creative expression in students (Beghetto, 2005).

**Symbolic Interactionism**

Charmaz (2014) suggested the contemporary use of the symbolic interactionist perspective for studying social action such as educational change. She wrote, “Chicago school symbolic interactionist ideas…supports the development of grounded theory in directions that can serve inquiry in the area of social justice” (p. 265).

**History of Symbolic Interactionism**

Most scholars trace the origins of symbolic interactionism to the works of George Herbert Mead (1863-1931) a philosophy professor at the University of Chicago. His ideas regarding symbolic interactionism were made known to the world through his student Herbert Blumer. In order to understand symbolic interactionism, one must
recognize the branches of knowledge that contributed to its appearance. These underlying ideas include: the philosophy of pragmatism, the work of Charles Darwin, and the psychological perspective of behaviorism.

Pragmatism developed as an original American philosophy and was advanced primarily at the University of Chicago in the 20th century. Early pragmatic writers such as Ralph Waldo Emerson, James Pierce, William James and John Dewey had a common denominator. As Cornel West put it, “…its common denominator consists of a future-oriented instrumentalism that tries to deploy thought as a weapon to enable more action” (p. 5). Consequently, pragmatists see human beings as doers and actors, and it is the action that defines human ideas (Warriner, 1970)

Basically, there are four ideas from pragmatism that are important to symbolic interactionism:

1. What we see as real is a result of our activity and intervention;
2. we are constantly trying out knowledge in situations and judging its usefulness;
3. we define the objects we encounter in situations according to their usefulness;
4. understanding another individual can be inferred by their actions.

Mead was also influenced by the ideas of Charles Darwin whose theory viewed human beings from a naturalistic perspective. He believed human beings, as part of the animal kingdom, should be seen as part of nature. He further picked up, from Darwin’s ideas of evolution, such as, humans communicate using symbols by themselves and with others. Moreover, he championed the idea that the human’s ability to reason, along with the use of symbols, changes their relationship with nature. Reason provides humans with
the capacity to discover nature and the ability to invent and change their environment. Thus, the universe according to Darwin is dynamic and always changing.

The final influence of Mead, in the development of symbolic interactionism is social behaviorism. From social behaviorism Mead developed the idea that humans should be understood through their communication with other humans. This communication between individuals is the basis for the emergence of Mead’s theory of the mind and self.

Charon (1992) wrote:

Out of these roots has developed a rather unique perspective, one that regards the human being as a thinking, creative, self-directing, defining, dynamic actor, one whose ability to use symbols, define and alter the environment resulted in a unique being in nature (p. 28)

Drawing on the influences above, symbolic interactionism is summed up with four basic ideas:

1. It focuses on the nature of social interaction, the dynamic social activities taking place between individuals, which produce human action.
2. Human action is not the only cause of social interaction; it is also caused by interaction within the individual.
3. Symbolic interactionism focuses on the present, not on the past.
4. Human activity is unpredictable due to the condition of being active and having the ability to make conscious choices.

In this study the teachers acted as a group to define a culture of encouraging creativity in
a standards-based educational environment. This experience was studied using the covert and overt tools of the symbolic interactionist perspective.

**Concepts in Symbolic Interactionism**

In order to understand the educational change taken by faculty of The Science Middle School, it is important to understand educational change from the perspective of symbolic interactionism. Educational change is a social action. Blumer (1969) wrote, …sociological conceptions generally lodge social action in the action of society or some unit of society… Under the perspective of symbolic interaction, social action is lodged in acting individuals who fit their respective lines of action to one another through a process of interpretation; group action is the collective action of such individuals (p. 84)

According to Blumer’s definition educational change, can be viewed through the perspective of symbolic interaction as social change, because it must be constructed by the actor. This construction includes both covert interpretations and overt actions. Understanding how interpretations form, and actions arise require and understanding of the nature of reality according to the perspective of symbolic interaction.

**Nature of reality/situation.** Symbolic interactionists understand that there is a physical world, but they also believe that the physical world is interpreted through social interactions. Blumer (1969) wrote, “…symbolic interactionists see meanings as social products, as creations that are formed in and through the defining activities of people as they interact” (p. 5). The human lives in a physical world, but sees the world through
perspectives, and these perspectives are driven by the individual’s interactions with other individuals; therefore, reality is also social. Symbolic interactionism refers to the individual perspective as a “stream of action” or a “line of action.” Individuals, due to their personal reality (line of action), see the world according to their interactions with others. These interactions are the basis of the social realities they develop. This becomes more apparent when we look at the many objects that we encounter on a daily basis. According to Blumer (1969), “An object is anything that can be indicated, anything that is pointed to or referred to…” (p. 10). We interpret these objects according to what we learn from our interactions with others.

**Social act or joint action.** Blumer (1969) analyzes educational change from the perspective of symbolic interaction. Regarding the cause of social action (what we are referring to as educational change) he wrote,

One should bear in mind that the most important element confronting an acting unit in situations is the actions of the other acting units. In modern society, with its increasing crisscrossing of lines of action, it is common for situations to rise in which the actions of the participants are not previously regularized and standardized. To this extent, existing social organization does not shape the situations. Correspondingly, the symbols or tools of interpretation used by acting units in such situations may vary and shift considerably. For these reasons social action may go beyond, or depart from, existing organization in any of its structural dimensions (p. 88)
Because of human reason, self, and mind there will be variations in interpretation as different individual acting units assess the situation. In the development of solutions to social change it must be recognized that any change is negotiated by the interpretation of the acting units regarding the situation that confronts them. Symbolic interactionism pays attention to acting units which can be a small as an individual, but it can also be a group of individuals in a situation of change. Blumer (1969) reveals the individual’s place in social change by writing,

…any line of social change, since it involves change in human action, is necessarily mediated by interpretation on the part of the people caught up in the change—the change appears in the form of new situations in which people have to construct new forms of action (p. 89)

In this study, the acting unit are the teachers involved in the educational change. How teachers created the environment to encourage creativity in a standards-based educational environment and sustain it is the purpose of this study. Symbolic interactionism allows us to analyze how individual lines of action merged to form a unit of action.

**Symbolic Interactionism and Educational Change and the Teacher**

I turn to symbolic interactionism to aid in the understanding of how teachers manage to encourage creativity in students in a standards-based educational environment. This educational change requires an understanding of teacher’s thought and action as individuals and as groups. Fullan (1991) wrote, “Change involves learning to do something new, and interaction is the primary basis for social learning” (p.77). The
educational change at a local level is the focus of analysis. According to Wideen (1994) the teacher is a significant factor in educational change. Fullan (1991) stated, “The quality of working relationships among teachers is strongly related to implementation” (p.77). To study the teacher’s role in the process of educational change I refer to the social psychological theory of symbolic interactionism. Consequently, I utilize Herbert Blumer’s (1969) work *Symbolic Interactionism: Perspective and Method*, and Tomatsu Shibutani’s (1955) work *Reference Groups as Perspectives*, for an explanation of educational change.

According to Blumer (1969) there are several acting units in society, and among them are, “…separate individuals, collectivities whose members are acting together on a common quest, or organizations acting on behalf of a constituency” (p. 85). This study is concerned with a collectivity or group in the form of a middle school teachers as an action unit in society and how they accomplished educational change. In keeping with symbolic interactionism group action is viewed as “consisting of the collective or concerted actions of individuals seeking to meet their life situations” (p. 84). Shibutani (1955) defines a reference group as, “…that group whose outlook is used by the actor as the frame of reference in the organization of his perceptual field” (p. 565). In educational change it is the individual teacher looking to the innovations undertaken by the group. According to Shibutani (1955) reference groups have the following set of qualities:

1. It is a standard check point which an actor uses in forming his estimate of the situation…

2. It is any group with which an actor is familiar…
3. It is a group in which one desires to participate…

4. The norms are used as anchoring point…

5. The perspective is assumed by the actor (p. 563).

Reference groups are “collectivities,” “societies,” or “social worlds” by which actors attain their frame of reference, referred to by Shibutani as a “perspective.” Perspectives are shared through interactions and guide individual’s definitions of reality. Perspectives are not static, but dynamic producing unpredictable results. Thus, an understanding of perspective leads us to view the groups of actors in interaction with one another, cooperation with one another and the sharing of a culture. Teachers interacting and cooperating to develop educational change is an example of the development of a perspective or common culture.

Culture is the “generalized other” the standpoint by which each approaches the world.

It is the shared understanding for those who engage in common modes action. Through communication, set expectations reinforce the perspective. People in the cultural group are constantly supporting one another’s perspectives. Shibutani (1955) wrote, “Each perceives, thinks, forms judgements, and controls himself according to the frame of reference of the group in which he is participating” (p. 564). The perspective of the cultural group defines objects, people, the world and his or herself, and aids the actor in defining lines of action, and guide conduct.
Summary

There is no research that has been conducted in the area of educational change to redefine the middle school curriculum to include creativity encouraging pedagogy. When confronted with the situation of developing an educational program that encourages creativity in students we are interested in how the acting unit defines, labels, and names it in order to understand the situation. Such a view has considerable implications for educational institutions. It highlights the ability of institutions to take charge of their situation through joint efforts when confronted with considerable constraints. Thus, it is necessary for all involved in the process of change to be aware of the factors that might enable or constrain productive joint actions. It is also necessary to take into consideration the fact that individuals have the capacity to diverge from the generalized other when faced with extenuating constraints. Therefore, their individual actions may become separated from that of the reference group.
CHAPTER III

METHODOLOGY

In the introduction I demonstrated how creativity has been defined and debated along two generations of scholars, and in so doing attempted to reveal a problem of a gap in curriculum and instruction studies which are about creativity.

My study, which builds an argument about the need to study a curriculum that encourages creative productivity in students is laid out in this chapter. However, as I combed through the literature, it was clear to me that there is not much research to draw from regarding pedagogical approaches to encouraging creativity in students, or how to study them. This gap in the literature in combination with current national climates of standardization suggests an imbalance in the manner in which curriculum is delivered in our educational institutions, which favor convergent forms of thinking over divergent forms of thinking. Feldhusen (2006) discusses the conflict as the larger question dealing with the relationship between fundamental knowledge and learning to think more effectively. Ironically, as Smith & Smith (2010) noted, “The relationship between education and creativity would seem to be a natural one, almost obvious in its degree of ‘fit’” (p. 251). But, Baer and Garrett (2010) have found this not to be true. They found the pressures teachers feel to meet the constraints of the standards-based environment leads them to ignore the encouragement of creativity in their classrooms. This alone, while not the entire focus of the problem builds a rationale for the site I have selected for this work as well as the method of gaining information from teachers. I believe that the
standards-based environment of our times has promoted an atmosphere which causes
teachers to concentrate wholly on convergent styles of pedagogy. This study proposes
there is the need to consistently develop convergent thinking skills in students with
divergent thinking skills and thus develop creative pedagogy.

**Research Questions**

Research questions were constructed to study how academic content and
creativity are taught simultaneously in a school which was designed to do so. Wagner
(2008) wrote, “…there is no way to teach the competencies of critical thinking, problem
solving, and effective communication, and assessing and analyzing information, and so
on without also teaching academic content” (p. 263). Likewise, Sternberg et. al (2009)
wrote, “Creative and practical abilities are certainly as important in life as memory and
analytical abilities, and they can be as important in school if a school chooses to
emphasize these abilities” (p. 5).

This study explored a middle school in Northeast Ohio, and its teachers who are
employed specifically to emphasize the encouragement of creativity in their students. The
school must adhere to the state standards and standardized testing schedules as any other
public school does, but due to its unique philosophy, the value statements and aims of the
school are special.

The specific aim of the study was to reveal how teachers developed meanings and
took joint action to encourage creativity in a standards-based educational environment
and to expose the actions they take in teaching that resulted from agreed upon socially
constructed meanings within the community. Therefore, this grounded theory qualitative
approach (emphasizing various types of interviews and to linked analysis as well as
documents) was used to explore lived experiences of teachers who encourage creativity
in the current national educational environment.

The specific question this study explored is: How do teachers encourage creativity
in their students in a standards-based middle school environment? Related questions
include:

1. What is the process, or are the processes for encouraging creativity in
   students in a standards-based classroom?

2. Does encouraging creativity within teams differ from encouraging
   creativity in individual teachers’ domains?

3. Are there situations that affect teacher’s ability to encourage creativity in
   their students?

Research Methods

Constructivist Grounded Theory was chosen as the method for this study to
explore teachers’ creativity encouraging pedagogy in a standards-based educational
inductive, comparative, emergent, and open-ended approach…” (p. 12). The flexibility of
the method was used in this study to freely interact with the participants when it was
necessary to gain further insights.

Charmaz (2006) recommends letting your problem shape your methods, thus
shared experiences and relationships with the information from interviews created the
data set. In Constructivist Grounded Theory the phenomenon takes priority in the study
and both data and analysis are created from the participant’s shared experiences and relationships (both with each other and with the phenomenon of creativity) and other sources of data (Charmaz, 2014). The Constructivist Grounded Theory method allowed me to co-construct knowledge with participants.

The Constructivist Grounded Theory theorist studies meanings; more specifically, \( how \) –and sometimes \( why \)–participants construct meanings and actions in situations (Charmaz, 2014), and thus my aim was to understand how these teachers understood their work with creativity and why they did what they did instructionally or pedagogically. Constructivist Grounded Theory methods of research consist of systematic procedures for collecting and analyzing data to build theoretical frameworks that explain the collected data and its ultimate meanings.

Constructivist Grounded Theory highlights the constant comparison of data, and as a result, engage in detailed analytic processes that requires repeated verification of potential patterns revealed in data. In the constant comparative method, the researcher goes back and forth collecting data through theoretical sampling, creating codes and categories, and memo writing until saturation is achieved. In this study I interviewed teachers and the data from the interviews were compared along with collection of documents to create codes and categories to explain the data, memo writing was used to document progress of comparing data until the substantive theory emerged. The beauty of grounded theory is the researcher can start with a broad view of the interactions and gradually narrow the view to more specific forms of interactions bringing them closer into view. Charmaz (2006) writes, “The give of grounded theory allows the researcher to
add new pieces to the research puzzle or conjure entirely new puzzles” (p. 34).

Rationale for Choosing Constructivist Grounded Theory

Charmaz (2014) suggests the researcher should, “Let your research problem shape the methods you choose” (p.27). I was interested in analyzing the actions teachers took to encourage creative productivity in their students in the standards-based educational environment. My concentration focused on how teachers’ interactions, meanings, and thus, actions in their environments accomplished the task of encouraging creative productivity in students. Teachers are actors, and teaching is the dynamic social process in which teachers interact. According to Charon, “We act in a world that we create through interaction with self, influenced in part by interaction with others” (p. 131). In the case of this study, I was interested in the teacher revealing their motives or stated reasons, and goals, or definitions that lead to actions. Therefore, I was interested in studying how and why teachers act as they do to encourage creative productivity in their students in conjunction with a standards-based educational environment. Constructivist Grounded Theory gave me the inductive, emergent, and open-ended approach to accomplish my goal.

In Constructivist Grounded Theory the resulting theory is an interpretation made by the researcher, and the emerging theory depends on the researcher’s view. As a result, I attempted to get inside the experience of the participants, while maintaining awareness of hierarchies of power that perpetuate forms of pedagogical practices. I used data from interviews and documents to help understand the meanings, language, and thought behind the actions of the teachers. By understanding the meanings, language and thoughts behind
interactions in the classroom, I was able to understand the participants’ subjective experience and response in their interactions. The resulting theory attempts to interpret the phenomenon based on the interpretations of both the participants and the researcher.

Constructivist Grounded Theory is the method used to describe how teachers construct meaning, language, and thought behind interactions in the social process of education in order to encourage creativity in their students. This grounded theory study relied on interviews and collection of documents.

**Participant Selection**

This study utilized purposeful sampling to identify participants with lived experience in relation to the questions of this study. The teachers in my study were all from the same Midwest U.S.A middle school having a focus to teach for creative and inventive responses in their students. The teachers were both male and female, and the age range was age 30 years to 65 years. For the focus group interviews I approached the teachers (by grade level) who were present the first year of the school and who had been part of the process of developing the school. Next, I approached the teachers (by grade level) who joined the original teachers during the following years. The focus of the participants was dual: they were chosen for their collaboration leading to the encouragement of creativity in students. The individual interviews were also chosen according to the teacher’s experience with the school, and for their ability to encourage creativity in students in their individual domains (subjects). The variety of approaches to interviewing the teachers helped me to get two different perspectives of how creativity is encouraged in the students of the school. Due to the diversity of ways of the
encouragement of creativity in this school, I sought to gain an adequate amount of data for this study. All teachers who had worked together to develop a problem-based learning (PBL) unit for a given grade level were interviewed together to understand how creativity was encouraged in collaboration. Then, I chose individual teachers to help me understand how the encouragement of creativity takes place in individual domains.

All of the teachers in this school were not interviewed. My aim was to develop a substantive theory from the participants’ words, that communicated the thoughts, meanings, and actions within the school, and from the information, develop a substantive theory. Theoretical sampling took place until I was assured I had answered the questions of this study thoroughly.

**Researcher’s Relationship**

I am the investigator in this research and have a professional relationship with the participants of this study. This relationship between the researcher and the teachers of the school aided the study by helping the researcher to locate the teachers who were part of the original group of teachers in the school start up and teachers who have been successful in encouraging creativity in students.

**Ethical Considerations**

Treating participants with respect was the number one task of the researcher in this study. There were no physical or psychological risks associated with this study. I ensured participant confidentiality by providing pseudonyms for the teachers, school, and district, for anyone who may want to search for the school of study. Also, I protected all information relative to this study by storing data in a safe place, by giving each
participant a pseudonym, and by sharing data only with my advisor.

**Data Collection**

Each interview was set up at a convenient date, time, and location of the participants choosing. All of the interviews took place in the classrooms of the middle school in which this study took place. Prior to the first interview I provided all participants with information about the study, and attained informed consent. I reviewed the consent form with the participants and explained to them the actions I would take during the interview. After all teachers had signed the informed consent form the interview began. All interviews were audio-taped and transcribed. All participants were informed that they would be given pseudonyms to protect them.

After receiving consent from the participants, I began the interview by turning on the recording device and proceeded to ask questions. I used a semi-structured interview format to help participants reflect on their interactions with students, teachers, and other professionals. Each interview was prepared as a conservation between myself and the participants lasting an hour for individual interviews and up to an hour and a half for focused group interviews. It was aided by a list of prepared questions to keep the conversation on track. The participants were allowed to speak freely as memories and recollections came to mind. All interviews ended by asking participants if they had additional information that would aid in understanding how to encourage creativity in a standards-based middle school environment.

After the initial interview I returned to the participants as needed for further clarification on their actions to encourage creativity in students. I returned to participants
to get answers to puzzling questions that arose. For example, a participant informed me in an individual interview that he used routines as a means to acclimate his students to the workings of his classroom. I went to the participants I had already interviewed to find out if they used routines, and if so, how they were used? Also, the substantive theory was shared with the participants as it was constructed so the participants could share in the development of an authentic framework which explains their behaviors. The first model of the framework was shared with each of the participants to find out the participant’s thoughts. After hearing the thoughts of each participant the model was changed until there was a consensus amongst the participants.

After receiving permission to conduct this study, from the Principal Administrator of the school, I began collecting data. Two types of interviews were used in this study: focus group interviews and individual interviews. Seven interviews were conducted in all: three focus group interviews with a total of fourteen participants, and four individual interviews.

**Focus Group Interviews**

A focus group is a discussion among a group of selected individuals from a similar social or cultural background, who have similar experiences. The individuals gather together to engage in a dynamic discussion about a specific issue (Liamputtong, 2009). According to Wilkerson (2004), there are two broad types of focus groups: a structured approach, used mostly in market research; and, a less rigid approach used mainly in the social sciences. This study was based on the social construction of knowledge; therefore, it focused on the latter less structured approach. As the mediator of
the focus group discussion I sought to be a facilitator rather than a director.

This interview schedule emphasized focus group interviews by grade level Professional Learning Communities (PLCs). This study utilized three focus group interviews. The first focus group interview was composed of Two interviews were for the purpose of constructing a substantive theory and the third was for theoretical sampling to test the theories strength. The focus group interviews were designed to gain insight into the shared meanings, interpretations, and actions taken concerning the processes teachers together use to encourage creativity in students. This was done by having the teachers reflect on the common experience of teaching together to encourage student creativity.

The aim of the focus group interviews was to tap into the experiences of the teacher’s encouragement of creativity through experiences such as PBL. The focus group interviews were arranged to explore how teachers collaborated to encourage creativity in students and what their process or processes were for doing so. Moreover, these interviews were designed to understand the general encouragement creativity in students in an educational environment. Each focus group interview session lasted between sixty and ninety minutes and took place in a convenient place for the teachers.

Focus groups were asked to describe their experience in encouraging creativity by reflecting on the meanings and processes, which led to the act of encouraging creativity. It was made clear that approaches to teaching will not be judged, but the intent was to learn how teachers go about encouraging creativity in their students in a standards-based environment. It was made known to the participants that I would return to them after the first interview to collect further information.
The researcher often sparked reflection about the topics by asking for details, which include examining meanings, processes, and actions. For example, it was revealed in an interview that the school schedule allowed for teachers, by grade level, to spend a great deal of time together which included: lunch time, as well as a common planning period, and PLC. I asked teachers to elaborate further about what was gained from spending time together related to the encouragement of creativity in their students. During interviews, I listened while the group members agreed, disagreed, or modified each other’s statements, allowing me to understand their work. All interviews were recorded and developed into transcripts for analysis by the researcher enabling another layer of listening to data.

**Individual Interviews**

Individual interviews provided information about how the participants encouraged creativity in their individual domains. As said by Charmaz (2014), “Because the interviewer seeks to understand the research participant’s language, meanings and actions, emotions and body language, intensive interviewing is a useful method for interpretive inquiry” (p. 58). Of the fourteen participants in the study I approached four teachers for individual interviews. This selection of individuals and timing after focus groups was concerned with exploring how individual teachers of certain methods or domain specific topics encouraged creativity in their classrooms. Specifically, in individual interviews, teachers were asked how they encourage creativity in their students within their individual classrooms. These individual intensive interviews were oriented toward specific language, meanings, thoughts, and actions. However, the findings were
also compared to those of the focus groups to aid in the constructions of the categories of the substantive theory.

The meanings and actions of the individual interviews as well as the focus group interviews were used for both comparison as well as contrast. A comparison of actions found in the interviews were used for the building of the categories of the substantive theory, while contrasts were sought to explore the differences between teaching from a domain specific or domain general perspective. For these interviews, I sought to represent the variety of content areas in the school. I contacted the four teachers first by e-mail, and scheduled a meeting with each of them to inform them about the study. During this meeting the first interview was scheduled. The relationship was developed in a way that I could return to the participant for questioning after the initial interview. I returned to the participants for their advice about the substantive theory model, as well as for their opinion of the interpretations about the encouragement of creativity in the individual domains as compared to the encouragement of creativity in a general setting where many teachers are collaborating.

Charmaz (2014) writes, “Intensive interviews create an open and interactional space in which the participant can relate his or her experience” (p. 57). These interviews were conducted to understand the individual meanings teachers give to encouraging creativity and how these definitions manifest in their classrooms as actions. I focused on the research participants’ statements about their experiences and what it meant to them (Charmaz, 2014). The intent was to attain an in-depth exploration of the topic. Each interview lasted approximately sixty minutes.
During the interviews the participants were asked to describe their experiences in encouraging creativity in a standards-based testing environment. The researcher mostly listened while the participant talked. Open-ended questions (found in appendix) were used to initiate the conversation, followed by more focused questions. The intent of the discussion was to spark reflection about encouraging creativity in students in a standards-based environment. This was done by and asking for details, which included examining events and views. Interviews were conducted in the following manner: (1) I introduced myself to the participants, and discussed the purposes of the study including how interview process will unfold. (2) I began with open-ended questioning, and from there I remained open to participant leads, probing deeper into those that would aid in understanding of how teaching to encourage creativity is possible in high-stakes testing environment. For example, in a focused group interview, participants mentioned “trusting the process,” as a means of dealing with test-based accountability. I asked the participants to speak more of “the process,” and its origin. I was mindful of time and maintained focus on the main issues.

**Collection of Extant Documents**

The study also utilized the collection and analysis of documents for the purpose of acquiring data. Charmaz (2014) informs us that, “People create documents for specific purposes and they do so within social, economic, historical, cultural, and situational contexts” (p. 46). Extant documents were used in this study to further understand participant’s language, meanings, and actions taken related to encouraging creativity. These documents included: unit plans of. These documents included those that were
deliberately developed to encourage creativity in students, and helped me understand the meanings that have been developed by the participants to encourage creativity in students, and the actions that resulted. These documents were used to support or challenge the themes that emerged from the research and were valuable in comparing and contrasting the development of units planned as a group of teachers and lessons of individual teachers.

**Management of Data**

Management of data meant keeping and cataloging consent forms, transcripts, audio tapes, and documents. Following each interview, I saved a digital copy of the file to my computer and named the file after the pseudonym name of each participant. A transcription service was used to transcribe some of the data of interviews and some by myself. Consent forms approved by the Institutional Review Board explained the expectations of the participants in this study, their rights.

A qualitative research software program *NVivo 10*, was used as an aid in the analysis of data initially and quickly abandoned for lack of flexibility and speed and thereafter hand coding was used. A copy of each of the transcribed interviews was copied and stored in *NVivo 10* and utilized to manage data and develop themes initially. I downloaded the transcripts into *NVivo 10* and created nodes from the line by line analysis. This helped to develop the focus codes and eventually the categories of the study. This program was password protected in case my computer was lost or stolen. Both paper files and computer files were stored at home and only I could access them. Artifacts were kept at home locked in desk. I was the only one with access to the key.
Data Analysis

Data analysis was in keeping with grounded theory approaches. The inductive approach allowed for a more in-depth understanding of the complex and multifaceted phenomenon. Through qualitative research methods I was able to construct knowledge by utilizing an iterative process. It allowed for me to change directions in my research as I gained knowledge of the phenomenon.

In Constructivist grounded theory the phenomenon takes priority of study and both data and analysis are created from the participant’s shared experiences and relationships, and other sources of data (Charmaz, 2014). The Constructivist grounded theorist studies meanings; more specifically, how—and sometimes why—participants construct meanings and actions in situations (Charmaz, 2014). Constructivist Grounded theory methods of research consist of systematic iterative procedures for collecting and analyzing data to build theoretical frameworks that explain the collected data. Constructivist Grounded Theory highlights the constant comparison of data, an as a result, engage in detailed analytic processes that requires repeated verification of potential patterns revealed in data. In the constant comparative method, the researcher goes back and forth collecting data through theoretical sampling, creating codes and categories, and memo writing until saturation is achieved. I accomplished this by interviewing participants and after each interview was transcribed conducting initial coding line-by-line. Each transcription was given a color and the pages numbered. After the initial coding was complete they were recorded on index cards, which were given the same color as the transcript and the number of the page was from which the code was
found was also recorded on the index card along with the line representing the code. The index cards were placed in envelopes. Once all of the transcripts had received initial coding I downloaded them into NVivo 10 and used the initial codes as nodes. Although I did not utilize the program NVivo 10 for long it did aid in the focused coding by showing which initial codes were used most often. This, along with the sorting of the index cards into piles, helped to develop the focused codes that would be utilized to develop categories. Categories were chosen according to the codes I felt raised the analytic level of the analysis. Moreover, codes were also used to develop analytic concepts. The categories and concepts were shared with the participants for their approval. The properties of the categories were accomplished through further studying the data and through theoretical sampling.

A striking characteristic of grounded theory is theoretical sampling, which involves collecting data and analyzing it in iterations. Theoretical sampling was used to develop properties of the categories by returning to the participants and sharing the development of the theoretical model and receiving advise. All changes to the model resulting from theoretical sampling were shared with all other participants. The goal of data analysis was to construct a substantive theory on how teachers encourage creativity in students in a standards-based environment, from the themes that emerged from the data.

**Coding Process**

Analysis of data began with the coding process. Charmaz (2006) states, “Through coding, you *define* what is happening in the data and begin to wrestle with what it means”
There are two type of coding processes and they happen in steps. The first coding process used in this study was initial coding. Next, I used focused coding to refine my themes.

**Initial coding.** I began the analysis of data with initial coding. Initial coding was done by splitting the transcript in half, on one side was the data, and the other side was blank so that I could label what I saw happening in the data fragments. During this stage of analysis, I was interested in finding relationships in the data.

After each interview, I used initial coding to define each line of the data. By maintaining an understanding that all initial codes are provisional, I sought sensitizing concepts such as the meanings participants give to encouraging creativity, the actions they take, the situation under which it takes place, and the processes they use. Looking at the data closely (line-by-line) and analyzing fragments of data in search of analytic ideas to pursue led to the separation of data into categories. I looked for language which invoked meanings, actions, and processes, and looked for gaps in the data. Moreover, I compared incidents and named, labeled, and categorized segments of data. I further sought to make sense of the interviews and documents by looking for obvious, as well as tacit meanings and actions participants gave to encouraging creativity in the fragments of data. Moreover, I paid close attention to emotions and feelings of the participants. Here is an example of the data and initial coding:

<table>
<thead>
<tr>
<th>Initial Codes</th>
<th>Interview Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explaining standards.</td>
<td>*A So are you referring to um, you know, with there being standards now, teachers having</td>
</tr>
<tr>
<td>Developing teaching strategies to incorporate standards.</td>
<td>to you know, just teach that whereas um, my view is um, yes, there’s standards but they don’t tell you how teach. You can teach in any way you want to, they just want some uniformity into, into what is taught. And that’s where the teacher can become creative is how they teach it. Um, I’m a proponent for standards, I um, had all honors classes in high school and there were no standards. And when I graduated and I got to college, I hadn’t read one classic novel, I didn’t know anything about Trigonometry, the unit circle, those were basic things that a lot of other people knew and have been exposed to so without those standards, you know, I basically had to self-teach myself things that other people knew and I was very angry about that. So I, I like the idea that there’s standards, but I don’t like that there’s testing and I think you can be very creative, but I think you have to really, really know your content well. You don’t know that content well, you gotta dig deeper and deeper and start interacting with other people so that you can learn your content better. That’s how I, I think it lets them be creative.</td>
</tr>
<tr>
<td>Developing space for creativity. Promoting standards</td>
<td></td>
</tr>
<tr>
<td>Experience of lack of standards.</td>
<td></td>
</tr>
<tr>
<td>Lacking standardization detrimental</td>
<td></td>
</tr>
<tr>
<td>Accepting of standards</td>
<td></td>
</tr>
<tr>
<td>Against testing</td>
<td></td>
</tr>
<tr>
<td>Knowing content important</td>
<td></td>
</tr>
<tr>
<td>Digging deep to understand content</td>
<td></td>
</tr>
<tr>
<td>Interacting helps with understanding</td>
<td></td>
</tr>
<tr>
<td>Knowing standards helps students</td>
<td></td>
</tr>
<tr>
<td>Forcing teachers to conform to tests</td>
<td></td>
</tr>
<tr>
<td>Given step-by-step directions</td>
<td></td>
</tr>
<tr>
<td>Having administrative support is important</td>
<td></td>
</tr>
<tr>
<td>Having standards is important</td>
<td></td>
</tr>
<tr>
<td>Considering what is needed for kids</td>
<td></td>
</tr>
</tbody>
</table>

There have been attempts to um, make the Language Arts teachers not use a template for teaching, but an absolute blueprint and they call them the IFL units. And we are told step-by-step, week-by-week what they want us to teach and I think having an administrator who trusts me to know what I’m talking about, know what I’m doing, know my content areas, RaShawnda’s already said I think that that helped because I literally put that unit on the shelf and did what I continue to do, you know, and I also am a proponent of standards-based learning as RaShawnda has said, I think everybody has to have certain things in place before
they go to the next level. If we all have those things in place before we put these kids to the next level, then there’s an equal playing field for those kids.

**Focused coding.** The second phase of analysis was focused coding. The goal of focused coding was to move further into the analysis once the data indicated it was time to do so. I interacted and acted upon the data by looking for other emergent threads for analysis. This was done by writing the initial codes on index cards and after all transcripts had gone through initial coding the index cards were sorted. The initial codes were sorted into piles and put into labeled envelopes. Here is an example of some of the labels placed on envelopes: Preparation of Curriculum, Explaining the Experience, Dealing with Standards, Hindering Creativity, Letting Students Explore, Providing Learning Opportunities. These and other labels became the focused codes of this study. During focused coding I considered the most significant codes determined their accuracy according to their conceptual strength.

Tentative decisions were made, choosing those codes that made the most analytical sense to advance the theoretical direction of the study. Charmaz (2014) advises looking for codes that have “…more theoretical reach, direction, and centrality…” (p. 141). I accomplished this through a constant comparison of data, and the use of theoretical sensitivity by considering my own history and studies of this study.

**Theoretical Sensitivity**

After the development of focused coding theoretical sensitivity became a factor. Memo-writing aided in this process. Here is an example of a memo written as I thought
about what I was seeing and hearing:

February 25, 2015

Two teacher processes seem to stand out in the transcripts. The first is the process of preparation for the encouragement of creativity in the classroom; while, the second process seems to be the implementation of the plans, and finally reflection of the process.

Preparing the classroom for the encouragement of creativity has been referred to as front loading by one of the teachers. The idea of front loading refers to the experience of preparing to step out of the way of students and let the learning take place. This requires that the teachers look closely at the standards they would like to accomplish, and preparing to implement open-ended structures, to help students succeed. Also, teachers must know this content well enough to take unexpected questions, or lead students in the right direction.

Implementing the plans requires that the teacher take on the role of a Coach. A coach stands back and lets self-directed learning take place. But, a coach is also there to help scaffold difficult problems. A Coach is one who answers questions with questions. The coach must develop the environment so s/he can stand back and let the students solve problems for themselves. Coaching requires both convergent and divergent teaching practices. For example, when students do not understand they look to the coach for guidance the Coach does not give answers, but guides the
student by asking questions or giving a demonstration or lab. Moreover, the coach manages time and must deal with the proper amount of time learners are in need of.

Reflection is a final process used in the encouragement of creativity in learners. Reflection is the assessment of the experience. The reflection is a look at what went well in the experience and what did not go well in the experience. The reflection leads to major decisions as to whether the lesson will be taught again, or if it will be retired.

The notion of theoretical sensitivity was mentioned first in Glaser and Strauss’ seminal work of grounded theory (1967), and then as a title of an entire book by Glaser (1978). Charmaz (2014), “Theoretical sensitivity is the ability to understand and define phenomena in abstract terms and to demonstrate abstract relationships between studied phenomena” (p. 161). In my study theoretical sensitivity aided in the development of the analytic power of the codes by responding to what I found in the field and by following leads and building onto ideas. It was through looking at the multidimensional aspects of studied life that I was able to probe into the experiences of the teachers. My experiences as a teacher who sought to encourage student’s creativity aided me to see possibilities, establishing connections, and asking questions.

**Memo-writing**

I used memo writing to aid my thinking. Charmaz (2014) described memo-writing as the “…pivotal intermediate step between data collection and writing drafts of papers” (p. 162). For the purpose of this study I kept a journal, which aided the development of
my ideas in narrative form. This also included my impressions about the participants’ experiences. I included in this journal self-reflections for the purpose of avoiding the importation of my preconceived notions and assumptions into the data. Here is an example of a memo written for these reasons:

6-22-15

The research question for this study is: How do teachers in a standards-based environment encourage creativity in students? The goals of the study are to find out, are there any processes for encouraging the creativity of students in the classroom; does encouraging creativity in student's as groups of teachers differ from encouraging student's creativity as individual teachers; and, are there situations that affect teachers' ability to encourage creativity?

I am conducting this project to ascertain how teachers, who work at a school with the intent to encourage creativity in students, make meaning and act in order to encourage creativity in their students. The purpose of this project is to develop a substantive theory to aid teachers in the encouragement of creativity in a standards-based environment.

I do not know what to expect. I will begin this project by first conducting two focused group interviews of teachers to find out how they encourage creativity in students together. Next, I will contact four individual teachers, and conduct four individual interviews of teachers, to find out how individual teachers encourage creativity in students.
There are biases I bring into this study. First, this study will take place where I am employed. I work with all of the teachers I will be interviewing. Second, as a part of the preparation for this study I was required to develop a review of literature. As a result, I have biases of what creativity is and how it is encouraged.

The process of memo writing included charting, recording, and detailing and was a major analytic phase in the progression of research (Charmaz, 2006). The methodological journal deepened my insight by giving me a space to develop ideas.

Therefore, the importance of memos to this study was the ability it gave me to examine my thoughts, make connections, and to help realize the directions to take research based on the informant’s information. Memo writing helped me to make decisions and develop an approach to gathering data.

10-31-15

From the teacher’s reflections there are several influences on the encouragement of creativity. These influences are the root of the creative interactions teachers have in their classrooms with students. The first round of interviews produced five focused codes, which have impacted the teacher’s creativity encouraging classroom interactions. Among the focused codes developed from teacher reflections Remembering Prior Experiences, Development of School Culture, Impact of Professional Development, Putting Standards in Their Place, and Defining Creativity.

The focused code Remembering Prior Experiences represents the
reflections of teachers about the role of their past experiences in the encouragement of creativity in students.

The focused code Development of School Culture concern the reflections of teachers related to defining the schools culture. So far, properties of this focused code that stand out include the cultivation of the school's core values and norms. Also, the redesign of school scheduling is a property that relates to structuring the schools schedule around teacher collaboration

The Impact of Professional Development, as a focused code, revolves around the the professional development opportunities teachers received that influenced their ideas about creativity.

Teachers spent a lot of time reflecting on the relationship between standards and encouraging creativity. The focused code Putting Standards in Their Place represents these reflections.

Finally, reflections related to Defining Creativity refer to how teachers define creativity and the impact that has as they encourage it in students. Modeling creative behaviors is a property of this code.

The substantive theory is built on the foundation of meanings. The self-reflections helped me work out my preconceived notions. Moreover, I used the journal to make comparisons among memos, to help guide and direct research, and to increase the analytical direction of this study by reflecting on codes, comparing
and taking data, discovering links between them, and pointing to gaps that need to be filled.

Ultimately, memo writing helped me to engage the data and make sense of processes, assumptions, and actions. By the end of data collection and analysis I had developed a tentative model of the process of encouraging creativity in students from the perspective of teachers working together and as individuals. This model was immediately shared with the participants and their criticisms were requested and obtained. As the model changed this process continued until it reflected the participant’s ideas.

**Theoretical Sampling**

The next step in the data collecting process was theoretical sampling. In keeping with Charmaz (2014), “Theoretical sampling involves starting with data, constructing tentative ideas about the data, and then examining these ideas through further empirical inquiry” (p. 199). Thus, at this stage of research I was concerned about narrowing my focus on emerging categories, developing and refining them, and demonstrating links among them. The categories that developed were: the *Process of Planning*, the *Process of Exploration and Discovery*, the *Process of Sharing Out*, and the *Process of Deliberation*. In this study, theoretical sampling was increasingly important. This emergent strategy requires that I fill in tentative and incomplete categories by collecting more data about the properties of the categories. Therefore, my interview questions, based on the analysis that was already done, often changed. Moreover, identifying analytic problems and seeking solutions entailed studying documents or re-interviewing with a focus on the theoretical categories. Theoretical sampling was used to fill in the properties of the *Process of*
Planning and the Process of Deliberation. To complete the properties of these categories I went back to the participants and asked them to explain what their process of planning to encourage creativity entailed. It was during theoretical sampling I learned teachers utilized collaborative routines. It was also during theoretical sampling of teachers I learned a property in the Process of Deliberation was the student’s deliberation of themselves, as well as others. Consequently, theoretical sampling helped me to predict where and how I found missing data to fill in gaps in evidence. As I moved through the theoretical confirmation stage I continued to memo write in order to make the properties increasingly analytic and robust.

I accounted for these new findings by reexamining data or gathering more data, making inferences, and checking them through further processes. The goal of theoretical sampling was to raise theory to an abstract level and bringing together the substantive components. I knew that saturation has been achieved when the properties of the theoretical categories were filled, and there are no gaps in research or new insights to reveal. The interrelated processes of theoretical sorting, diagramming, and integrating memos will help in logically constructing the emerging theory, which determined the findings of this work in chapter 4 of this dissertation.

**Mapping**

Theoretical mapping and sorting helped me to refine somewhat the links between categories. I sorted memos by categories, compared categories, considered the order of memos, and created a balance between what was studied, the categories, and the statements that have resulted from the analysis. I sorted the memos by hand by putting
the memos in related clusters and attempted to fit them together like a puzzle, which could reasonably be created into a narrative. Once I sorted them and the relationship was coherent and promising I began to diagram with paper and pencil. Here is an example of an early diagram:
Diagramming aided me in conceiving a concrete image of the ideas. Charmaz (2014) says, “Diagrams can enable you to see the relative power, scope, and direction of the categories in your analysis as well as the connections among them” (p. 218).

**Trustworthiness and Credibility**

Using Constructivist Grounded Method, in this study I have provided checks and balances to ensure rigorous data collection and analytic methods. Confidence in the truth of the findings was established through member checking, and auditing. Through sources a means of corroboration was achieved allowing for confidence in the conclusions of this study, as participants often reviewed my images and figures to confirm truth. I sought to understand the phenomenon differently in the individual interviews from the focus group interviews. Individual interviews were conducted to compare and contrast against the focus group interviews.

Member checking involved returning to participants to check the accuracy of facts, and took place throughout data analysis. For example, I shared themes with participants, as well as diagrams for their consideration. I utilized the participant’s constructive criticisms to change the information so that diagrams and themes were in line with reality. The aim of member checking was reflexivity, helping me to maintain an awareness of myself and aided in self-correction. After the initial write-up of parts of the study elements were shared with the participants for their comments of the interpretations.
Limitations

This study was conceived to develop a framework of the encouragement of creativity in students in a standards-based middle school educational environment. Prior studies on this topic have looked at schools that were already in existence, or studied individual teachers in traditional school settings, and how creativity was integrated into the existing curriculum. This study explored a school with no prior history and the conditions which led to the adoption of the encouragement of creativity in students. The school explored in this study did not change an existing school culture, but had to change the traditional way of schooling to encourage creativity in students. From the beginning, the Science Middle School had “buy in” from all of its teachers. Participants expressed they were hired to teach for creative and inventive responses in students. Also, teachers received professional development for the purposes of encouraging creativity in students. Therefore, one of the limitations of this study is the lack of transferability to other environments; thus, findings of this study do not apply all schools. As this is a study is of a school that started from the beginning with the aim to encourage creativity in students it cannot apply to a school that has a long tradition and is changing an already existing culture to encourage creativity in students. The unique case of this study was another limitation because I was unable to have a large group of participants, which may have limited the development of theory and the flushing out of all categories.

Additionally, I have a professional relationship with the site where the study occurred, this has the potential for researcher bias. However, a variety of strategies were
incorporated into this study to offset this bias. Researcher bias was dealt with through self-reflection through memo-writing, peer debriefing, and member checking. Memo-writing was used to do away with subjectivity by identifying and taking into account the perspective I brought into this study. Member checking aided in bias by allowing participants to be critical of the themes and diagrams developed by the researcher. Allowing participants to vet documents for accuracy and images or figures for their own truth assured some reduction of bias.
CHAPTER IV
ANALYSIS OF THE FINDINGS

This study is an exploration of middle school teachers’ creativity encouraging pedagogy in a standards-based environment. It does not seek to give a definitive answer to how teachers encourage creativity in students through curriculum, but to show how teachers in a Northeast, Ohio middle school are currently approaching these matters, through curricular innovations, in the current standards-based educational environment. The specific question this study explores is: How do teachers encourage creativity in their students in a standards-based middle school environment? Related questions include:

1. What is the curricular process, or are the curricular processes for encouraging creativity in students in a standards-based classroom?

2. Does encouraging creativity within teams differ from encouraging creativity in individual teachers’ domains?

3. Are there situations that affect teacher’s ability to encourage creativity in their students?

This chapter is divided into two sections. In the first section, I will use data from the interviews to give a detailed description of the influences on teachers’ encouragement of creativity in students. These meanings are the sources of the participants’ thoughts, language for taking action toward educational change to encourage creativity in students in a standards-based environment. The second section of these findings will discuss the actions taken by participants in the form of the substantive theory that emerged based on
all of the participant reflections. The emergent theory uncovers the actions taken by teachers as a result of their shared understandings. Finally, this chapter will include a discussion of each theoretical category from participant reflections, and the properties that manifested through this exploration.

**Science Middle School**

**History and Purpose**

Science Middle School serves students in grades 5-8 from all parts of the city, and students from outside of the district who applied through inter-district enrollment. Students complete the application, which makes them eligible for the annual lottery. Each part of the city gets an equal percentage of students chosen from the lottery. Students who apply for admittance to the school who live outside of the district make up another equal percentage of the total amount of students enrolled. Students may only enter the school during their 5th grade year. Students admitted are expected to stay enrolled in this school in the district throughout their middle school experience.

Science Middle School was developed as an alternative educational experience to the standard approach to education in a Midwest school district. It began by bringing together local businesses, a local the university, the city, and teachers and administrators. The original development group, composed of teachers, administrators, district board members, and outside sources, decided the model of education that the school would function by to be Science, Technology, Engineering, and Mathematics (S.T.E.M.). The development group of individuals travelled around the nation studying “best practices.” The encouragement of creative and inventive thinking in students became part of the
vision of the school. In 2007, the district began hiring its first group of teachers for the new school.

The first group of teachers to work at the school were teachers who were already employed by the district, but worked in other schools. These teachers had varied educational backgrounds and work-related experiences before being employed at the Science Middle School. The purpose of bringing them together was to develop a school culture with a focus on Science, Technology, Engineering, and Mathematics (STEM), with the intent to encourage creative and inventive thinking in students. Science Middle School also sought to provide and education ensuring students would pass the standardized tests of the State of Ohio.

At the time of first interviews, the Science Middle School had received a rating of “Excellent” every year of its existence. Participants were proud of this rating because it showed that the curricular approach could work with students from every demographic of the school setting, as represented by the school’s population.

**Themes Influencing the Encouragement of Creativity in Students**

Making meaning to construct knowledge, which deliberately encouraged creativity in middle school students in this standards-based environment, was a result of several influential situations. These situational themes represent the spaces where dynamic social interactions took place between teachers, administrators, and other professionals. Interactions in these situations produced both covert and overt ends in the form of thoughts, meanings, objects, language, and joint action, which led to the encouragement of creativity in students. In this study, situations have been sorted into
overarching themes. These overarching themes include: the teachers’ prior experiences, development of curriculum, developing school culture, and redefining teaching and learning. The resulting actions teachers took were a result of both individual interpretations as well as interpretations aligned to the perspective of the reference group. What follows is a discussion of the thoughts, meanings, and language from which the participant’s actions developed. The actions stemming from these influences will be discussed as an emergent theory later on in this chapter.

**Prior Meaning Making Experiences**

Participant constructions of pedagogy to encourage creativity in students did not begin with their employment at Science Middle School. Several participants reflected on their past experiences that gave meaning to their ideas of encouraging creativity in students and affected interactions with others once employed by the school. They identified various past experiences that inspired and informed their ideas of creativity encouraging pedagogy. Experiences took place prior to the current assignment, but provide adequate stepping stones to the challenges of the school-- to encourage student’s creative productivity with intent. The teacher’s reflections included experiences such as: opportunities they were provided to experiment and find their individual style of teaching, mentors who helped them to better understand their style of teaching and learning, and student teaching experiences. Participants expressed the encouragement of creativity as an evolving process, starting well before the employment here. The teacher reflections give insight into the different experiences participants had as they evolved
their style of teaching and developed their personal meanings to the encouragement of creativity in students.

**Early educational experience.** Debra’s early educational experience had an impact on the way she developed as a teacher. She explained in her account about her schooling prior to matriculation in college, and how this experience led to her finding her calling of being a teacher who encourages creativity in students. She explained,

So I said, well this is the way I need to go…my experience in school, it was just okay, it wasn’t a memorable experience. Um, there was not creativity, there was not inquiry-based. Um, I think one teacher tried inquiry-based and it was just a disaster. You know it was probably new and there was no scaffolding. It just wasn’t good it was an okay experience. It gave me a foundation, but it’s nothing like these kids now. And so I wanted to become the teacher that, you know, did try to spark some creativity.

This message explains how past interactions shape the participant’s interactions in the present. Every participant came to the interview with their personal life experiences that have had an impact on their values and beliefs. In this statement Debra is showing how her memories of school had an impact on how she teaches.

**Student teaching experiences.** Some participants spoke of their student teaching experience as having an impact on their pedagogical style. For example, Marie provided
an account of her student teaching experience and the impact it had on her creativity encouraging pedagogy. She revealed:

I knew- when I student taught, I walked away from there knowing that that’s how- I know I did not wanna teach that way. And I call it refrigerator art. When you look in the hall, all the clowns looked the same, all the shoes looked the same. All the houses looked the same. And their idea of creativity was instead of a red nose, you could make an orange nose on the clown. You know so- and that’s how she insisted I teach. And the community loved it because it was pretty and decorative and she was decorating the school pretty much. But the kids- I would ask the kids, what did you learn from this? And very little could they say that they learned. So I knew from that experience that that’s how I didn’t want to teach.

This experience of producing all of the same products with students to decorate hallways and classrooms helped Marie realize how she would like to present art to her students and the outcomes she would seek in her lessons.

**Professional experiences.** Professional experiences provided other situations for the participants to construct meanings to encourage creativity in students. Teachers spoke of a variety of professional experiences that had helped them develop their teaching style. Kate, discussed the influence of the opportunities she was granted as a teacher in the development of her style of teaching leading to the encouragement creativity in students. Kate’s experiences gave her freedom to experiment, it helped her to hone her style of
encouraging creativity in students by giving her space to develop her ideas. However, it was through her motivation that she was able to take advantage of these experiences. She said,

when I was always – in my schools that I’ve worked with in the schools –

I’ve always been given license to you know to do some creating that went beyond – I was allowed to – I was very supported – I felt supported in doing some of the things that I wanted to do that weren’t maybe you know

in the norm.

In Kate’s prior interactions she received a great deal of support from the administration, which justified the experiences that helped define her style of encouraging creativity in students. These were situations created by themselves to interact with others in order to try out their ideas and grow professionally. Participants shared these experiences to show how they had been changing and redefining themselves before employment at the Science Middle School. Here is another reflection by Kate in which she discusses how she took advantage of her prior experiences to figure out how to encourage creative productivity in students:

I guess that’s the way I think and operate and I – I like – I’m always

someone who has some unique ideas and I probably express them differently. I know I’m a very different from all the others in my position in the district um because I choose to be engaged in learning and I actively create environments for them to –to do their own learning and that’s not something – and I don’t know if that’s because – formerly I was a teacher
and so moving from you know a role of teacher to my current position, a lot of that translated but um it translated into being a learning environment, a learning and doing environment. I guess early on I remembered doing things where you know I had ideas that were maybe different from other peoples – I wasn’t really good in art but I remember this one experience and the art teacher let me – had an idea to take this project to another level. Rather than having me go on and do the next activity that they were doing, she was like go ahead and do this, you know, take your idea a little bit further, and I wasn’t penalized for not doing the next project and I really enjoyed what I was doing, I was making this three dimensional butterfly and I thought this is really – and this was in high school – I thought this is what really is important, is doing some deeper learning in an area that – that’s interesting to you and I really like to see what kids come up with . I don’t want them to – I want them to come up with their own ideas and play and think and you know and just – I want them to visit other people’s ideas and see that collect information from them, too.

Although, at the time, Marie did not know how she would accomplish her idea of teaching, her practice evolved over time through personal study and inquiry. She explained how a song had a significant impact on her understanding of teaching. She describes this in the following statement,
The whole, you know, fear factor piece, you know? Being afraid to try something different or even ask about something different is all the teacher’s role. You know, what- how are you going to instill that. Is it okay to try it, or is it okay to at least ask to try it? So, is the teacher’s part. There’s a song- and I don’t wanna talk about the sky blue- it’s about a little boy who went to a new school and he was giving a coloring page, which is kind of how I went through classes in elementary and through school, the teacher said the sky has to be blue and the flowers has to be red and he was always getting in trouble because he was making, you know, purple skies, or orange skies and flowers and he would add to her coloring page and he was always getting in trouble and she would always say, no the sky has to be blue and the flowers have to be red and the grass green-and that’s the course of the song and so pretty soon he conforms to that and makes the flowers red and the sky blue, then he goes to another school and he makes the sky blue just like he was trained to do because he had that creativity sucked out him and the new teacher’s like, “No make the sky whatever color you want” and he couldn’t do it. She took- that teacher- that first teacher- you know the teacher that made him do the sky blue, the blue sky teacher, just sucked it out of him and he had a really hard time-

Participant’s professional experiences exhibit meaning making situations which show their evolution as professionals to become teachers who encourage creativity in students.
Experiences with mentors. Having access to others with great knowledge was another influence on participants. Mentors helped Loraine to view the purpose of her content area from a different perspective. Loraine’s prior experiences, and the people who mentored her, helped develop her vision toward the role of educators and the responsibility to her learners. She said,

For me, I would say, Merriam, who was just a genius in her field and her science background and her superintendent background, she kinda mentored me a lot. As did Dr. Spealman in the years before that in the science curriculum. And um, I think I learned a lot from those two people as far as kind of the big picture vision that science was never supposed to be read and answer questions. It was supposed to be working on problems and giant projects and preparing them for the future.

In summary, teachers like and Kate, Marie, and Loraine learned to understand and to encourage creativity by utilizing opportunities to create engaging environments for students, through personal inquiry, and having mentors as guides, who to act as catalysts by providing meaningful experiences for them as they thought about their work with students. These experiences influenced these teachers to gravitate towards a style of teaching that encourages students toward novel and original solutions. Another influence, aiding teachers in their meaning making, beyond professional pasts and mentorships as revealed in the interviews was the development of school culture.
Development of Reference Group Perspective

Once employed by Science Middle School, participants took on the challenge of encouraging creativity in students with intent. This was an intentional endeavor of the school, as seen in its vision statement, which directs the pedagogy toward the encouragement of creative and inventive thinking. However, beyond the vision statement, there was no written manual to guide teachers on how to develop an environment that would make the vision possible. Therefore, teachers were charged to work together, along with administrators, and other professionals, to design and build the integral structures that would make the vision a reality.

It was made clear to all candidates during the hiring and interview process, conducted to find the first group of teachers for the school, that if employed, the teachers would play a significant part in defining the culture of the school. Upon employment, teachers were asked to meet regularly to work out the details of the school’s culture. These meetings brought the teachers’ lines of action together. Bringing their individual perspectives to the table, teachers spent a great deal of time planning, discussing, and agreeing on the features that would distinguish the school. The result was a reference group perspective.

At the time of the teacher interviews for this study, the school was entering its eighth year of operation. Many of the original faculty, those who spent a great deal of time defining the culture of the school during its first years of operation its first year, remained among the existing faculty of the school. As a result, the culture of the school, and how it was developed, became a significant part of the participant’s reflections. In
fact, one of the original teachers, Neil, said, “it’s a culture of creativity that we’ve established through our P.D. professional development, and through our support of each other and so it trickles down to the kids to their culture.” As teachers reflected on the experience of bringing the vision of encouraging creativity into reality, they considered a number of aspects of the school’s culture which were defined through the interactions of teacher, administrator, and others. These aspects include: schedules, language, definitions, roles, culture, and approaches to curriculum.

The development of the cultural aspects of the school gives insight into the leadership needed for actions encouragement of creativity designed by the teachers. Participant interviews described how the faculty came together to make sense of how school culture would be organized to encourage creativity in students. The initial discussions centered around how the school should function given the vision of the school, leading to pedagogic intent.

**Defining pedagogical intent.** The first line of action was to bring the teacher’s lines of action together. Teachers constructed their language, meanings, and actions based on their ideas of what students would face in the future. Neil, one of the original teacher hired to the school, disclosed the importance of the intentional development of the culture felt by teachers. In a focus group interview he communicated the motivation behind the development of culture. He said,

First visioning the school that was kind of a corner stone of, um, creativity and I think of Sir Ken Robinson in his TED talk about how education is killing creativity in kids. And I think that was a part of the original vision,
was to create multiple opportunities for kids to experience learning in
different ways than they’re used to. And given those opportunities, they’re
going to be more creative. The idea was to bring STEM down to a
younger level because in the normal junior high or middle school, that’s
right around the time when kids are really starting to burn out on science
and math. They’re like, it’s not – that’s you know, in a traditional setting,
that’s when those kids are shutting down. Part of the idea was to make a
school where that was an area that really starts to light up instead of
starting to shut down.

In this excerpt Neil communicates ideas from the literature on creativity. He shows an
understanding of the situations leading to the loss of motivation in students. He captured
the ethos for encouraging creativity in students that was important to all teachers.
Common definitions like these supplied teachers with guidance and direction for their
acts. Here, Neil is articulating ethical reasons for the development of encouraging
creativity in students. Giving the encouragement of creativity a student-centered purpose
builds a persuasive foundation by which participants can build their pedagogical
strategies. By taking the role of the student Neil is able to see the world from the
perspective of the student and therefore able to direct the actions of the teachers
accordingly.

Other student-centered purposes for the encouragement of creativity in students
involved student need. The encouragement of creativity in students reflects the teachers’
philosophy of preparing students to be active citizens in society. Loraine emphasizes the
further principled ideas that became foundational to the shared definition of culture for encouraging creativity in students. She said,

And I think the purpose is there are so many real world problems that are unsolved, or we haven’t even realized are problems yet. That these kids will be solving in their careers in ten years. And we have to give them the skills to think creatively about it. To see things from a different perspective… And, I’m not going to be there in ten years when they’re in their career to give them the answer. None of us will. You know, and if I’ve given them the skills to go seek an answer and check out if it’s correct or not, and look for different answers and chose the best one by jarring it down and looking at the one with the most pros and the least cons, that everybody can live with, then that’s how they’re going to solve those problems.

Loraine suggests here that the promotion of a culture toward the encouragement of creativity in students, especially through the development of creative skills that have long term value. This idea, mirrors the 21st Century Skills framework, expressed by Neil. For example, Neil said,

…it goes back to my idea of how technology is constantly changing and shifting and it goes back – I always say I don’t have any idea what job we’re training them for because I don’t think a lot of them exist yet, so we have to be making them good problem-solvers. You know, that’s really huge. So that kind of lends itself to creativity, too, when you don’t know
or can’t see an end goal. You know, it’s not like a ‘50’s classroom, all in rows, getting – preparing them to be factory workers, which made sense in the fifties. Right? Because we were kind of modeling that work. Now, you don’t, you know, if you can model those 21st century skills, that’s kind of the best thing, because we don’t, we can’t, we don’t have definitive picture of what – I mean we can say yeah they can be engineers, and you know, but what kind? Robotic engineers? DNA engineers? There’s all kinds of work out there that’s just going to turn in the next ten to fifteen years as they’re getting into it but we have no idea.

The school’s creative culture represents the language, meanings, and actions agreed upon by the faculty, administration, and other professionals to develop pedagogies to put students in the center of learning and for students to have the wherewithal to adapt to a changing world and an unknown future. Neil’s commentary about preparing for the unknown future was well grounded in an understanding of current knowledge and systems thinking.

**Organization of Situations for Interaction**

To further develop language, meanings, and actions toward teachers’ creativity encouraging pedagogy, the participants were put in situations to work together (with other teachers), and with other professionals. Led by school organizational frameworks, these experiences provided a variety of interactions to help teachers situate themselves in what would become the creativity encouraging teaching behaviors of the Science Middle School.
Receiving development from other professionals. One form of interaction influencing teacher’s understanding of how to encourage creativity in students was the professional development they received prior to and after the opening of the school. As Neil explains, “… It’s a culture of creativity that we’ve established through our professional development, and through our support of each other and so it trickles down to the kids to their culture.” Although the professional development alone did not define how creativity would be approached in the school, it did inspire teachers by giving them ideas and examples to use in the classroom.

Taking developmental courses. One example of how professional development had an effect on teachers was by having teachers take courses on creativity from outside professionals. Participants spoke of these activities as inspirational and motivating. Valerie explains the importance of professional development courses on the understanding of encouraging creativity in students,

Yeah the creativity guy. I’m trying to think of- I know I’ve taken ideas from that… I already know this but there’s always something you can pull from it…Where we had to do the entrepreneurship. And I remember, I remember it was John and Jane. They focused on depth of knowledge… and that was really good. And that- we did something just with depth of knowledge- Oh when um- that kind of remind me, that lady that came- Elise Car. Cause that was- she talked about that too. I thought that was really good. I liked that, depth of knowledge. So just sometimes those
little- just little tidbits sometimes will spark- but what really helps then is getting the opportunity to come back and talk.

Professional development interactions were important for providing a spark for teachers to construct ideas for creativity encouraging pedagogy. Teachers used these interactions as guides to further understand how to make sense of encouraging creativity from the perspective of the content they were teaching. For example, Simon explained how a professional development course was helpful to his understanding of group work and the importance it can have on student’s problem solving. He said,

The four of us, and the other, and the other math teachers who are no longer here, we went to the university and we had a professor… He gave our-, it was a-Creativity seminar… it was a week or, or two on, on creativity…And he put us in situations where it was again uh, challenges but there wasn’t any necessarily right answer- …-uh, it was a just different ways of thinking of how to come up with different solutions and then you could have several answers correct… I remember that one of the big things we got out of it was how much more we were able to achieve in, in groups, and the more diverse the group is the better. I remember that really-, and I never really thought about it because I know people are usually drawn to you know, groups that are you know, they relate to, their similar to them, you know…it’s your comfort area. So when you get into
this group of different cultures and you know, just different people’s, uh, way of thinking that really helped.

**Talking with experts.** Another professional development situation explained by participants was giving teachers the opportunity to have discussions with professionals in the field. Ultimately the teachers had to figure out how the encouragement of creativity in students would take place. Debra reveals how she made sense of encouraging creativity in students by talking with other professionals, but ultimately using her own understanding of that experience to adapt her work. She said,

> And I mean, we were trained, we had specific training in creativity, but you still have to acquire to you and your content… -and you know like I said, you know, Algebra is, is a matter of fact, it’s Algebra, but there’s a whole lot of creative ways that we can use Algebra that I wasn’t even aware of, I had to talk with experts and that’s part of the PBL Problem-Based Learning. When we get the experts that come in, they help open my eyes. I don’t know how everybody uses Algebra, I have a general idea but I don’t know how all of these different professions use Algebra. But when they come in and they talk with us, even though sometimes they can’t tell me directly, they just kinda help open, open the door so that I can you know, I can make the connections to my curriculum.

Professional development opportunities were not the sole situations teachers were placed in to construct an understanding of encouraging creativity in students. Another helpful circumstance was the collaboration amongst teachers.
Collaboration amongst teachers allowed by school organization. The culture of the school is built around collaboration, beginning with the teachers. One teacher said, “But I also think our school, for having worked with other educators from outside our district or even in our district, that this model was built around collaboration…” Much was said in the teacher reflections about the unique schedule of the school and how it aids teachers in the encouragement of creativity in students. Teachers viewed the schedule as a significant factor in their ability to encourage creativity in students. One teacher expressed,

…this model was built around collaboration and so you can’t go hardly anywhere and get the time that we’ve got. We’ve got you know planning time together, shared planning, which is huge. Schools don’t have that. We have the week before school, the week after school, um, I mean, there’s been a tremendous amount of effort to make sure that we have time where we can be together and that’s built into our day…And I know it sounds like it’s just a scheduling thing, but that was something that needed to get worked out and that was definitely a part of the vision that you know in the very very very beginning, was that if we’re going to do it, then we had to have the time to work together to do it.

Shared planning. Participants also reflected on the various kinds of collaboration experiences they were given. For example, it was mentioned that the time given to work together as grade levels, as well as by content, was significant in the development of creativity encouraging pedagogy. These periods of
collaboration, different from other common public schools, provided teachers with opportunities to meet with a variety of professional learning communities giving them the ability to gain knowledge of the breadth and width of the curriculum. Laterally, each grade level content area meets to plan shared educational opportunities for the students. Vertically, teachers meet by content area to make connections in learning from one grade to the next. Loraine said,

…we have professional planning time every day with my team to meet. So I can meet laterally and I also get to meet vertically with the science department, so sixth grade, eighth grade. So not only do I know what my colleagues on my own floor are doing with the kids and we can kinda address things and go about it in the same way. But I know where they’ve come from and where they’re going to. And I think at least six or eight, we know the science department knows what the next steps are mostly.

Spending time together. Participants articulated that having regular meetings with the teachers in their grade level was important to their pedagogy. Building important relationships with their grade level colleagues gave them a chance to understand their grade level teacher’s standards, as well as make significant connections. Lisa says,

I know my content area but when I sit and talk to my colleagues and they’re talking about things, I’m like, maybe I can use that to pull that into my classroom and then it’s tied together with and that training helped you, you know, get acclimated to not working as an island because my creativity’s always been very high. When I was at Firestone, it was very
high, it’s gone to the 10th power since I’ve been here because I’m bouncing things off of people who are not in my content area, who are not-, they don’t think the way that I do, um, there’s people who are more creative than I am who look for the little details and like, when we do a Problem-Based Learning, it’s a science and water problem, well, where does Language Arts fit into that, so I had to sit there and revisit my standards and, and look at my material and go I could pull that in, I could pull this in, they can do this, they can write to that and it, it meets the standards and it meets the requirements of the PBL in that moment, in that clash moment, you get my creativity and I’m pulling the creativity out of the learners from all different ways, content areas uh, like I, I look forward to working closer with Ellen this year because a lot of our stuff crosses. Like, she teaches about Ben Franklin, I’ve got Ben Franklin’s aphorisms I could have done at that point in time. She teaches about slavery, I’ve got slave narratives and that new textbook that we’re getting ‘cause I’ve got, been allowed to look at it. There’s so many things that I could do. She’s teaching the history of it, but I can give it, I can give it a person. A person, their narrative, their voice and in that moment, I, I don’t, I won’t call that creativity because what’s going on in the kid’s mind, it’s synthesizing something else. You know, something beyond the history, beyond the narrative, it’s there, it’s, it’s up there and their thinking about all of this stuff.
Situations where teachers collaborated were pivotal to the understanding of encouraging creativity in students. These situations provided common spaces for getting to know each other’s contents and standards. Sharing allowed unique collaborations which elevated content. This common time was also spent on shared planning.

**Designing the Creativity Encouraging Pedagogy**

Participants spoke of being empowered by the administration of the school. Participants explained that they enjoy the freedom of not being micro managed and the space given to them for the design of their curriculum. A teacher reflection stated, regarding the administration of the building, “I think having an administrator who trusts me to know what I’m talking about, know what I’m doing…” In this setting the administration was not a stranglehold on teacher action but a cultivated partner to meet all agendas of the school defined by teacher content expertise. trusted This relationship was important because teachers were charged to define the creativity encouraging pedagogy within the constraints of the current standards-based educational movement, as well as, in their content areas.

**Developing an approach to curriculum.** The various opportunities teachers have to interact with each other provides the situations for them to fit their views with others. This time helped them to bring their lines of actions together to develop a shared language and symbols. The school’s common language and symbols were developed around the school’s goals and vision. Teachers used these concepts to direct their actions regarding standards, assessment, and instruction.
**Understanding the “fit” of standards.** Making meaning of standards was brought up by participants as an important aspect of understanding how to encourage creativity in students. The participants spoke of the standards-based approach to education as having both positive and negative consequences. Data from participant reflections showed they liked the idea of standards, but disliked the testing that goes along with the standards-based educational approach.

The participants in this study spoke of standards in an agreeable way. Participants explained they were not intimidated by the standards in their quest to encourage creativity in students. In fact, the participant’s comments show they appreciate the standards and believe standards are a robust element in the encouragement of creative productivity among students. Participants did not view standards as a rigid system dictating how the classroom is run. Although standards exist as a result of the scientific standards-based movement of today’s educational environment, teachers were advocates of them. Debra’s meaning making goes back to her high school days, when standards did not exist. She developed her pedagogical style for encouraging creativity in students by considering standards as a priority. She said,

Um, I’m a proponent for standards, I um, had all honors classes in high school and there were no standards. And when I graduated and I got to college, I hadn’t read one classic novel, I didn’t know anything about Trigonometry, the unit circle, those were basic things that a lot of other people knew and have been exposed to so without those standards, you
know, I basically had to self-teach myself things that other people knew and I was very angry about that.

Also, Rita made the following statement regarding the standards, reinforcing the control teachers have even with in a standards driven accountability system,

…common core did not destroy creativity, it’s, it’s still in the teacher’s hands even though we have standards…Those standards are still there, it just gives you that idea of how to creatively get back to what you’re supposed to teach.

This understanding of standards was the norm for teachers as they worked together or independently to encourage creativity. In some ways standards may have been a foundation to provide creativity.

Participant comments showed that standards provide a great outline of the necessary foundational knowledge for making creative leaps. They explained that standards serve the purpose of preparing students with the necessary foundational knowledge to express creativity with success. This is how Marie explains it,

But doesn’t that circle back to the standards? It does, it has to be about the standards. I mean, as long as this, this creativity and this ball of excitement and fun, I mean, we-, if you’re basing it on your standards, they’re still getting what they need... Ultimately. You know, I was thinking… back to what you said, Valerie. Bach, Beethoven, Mozart, they were very, very creative. Andy Warhol, all these guys were very creative but if they didn’t know their notes and how to write ‘em down- There’s your constraints. -
and how to measure—There you go. -so there’s their constraints. It has to be based on a certain amount of skill. Absolutely, absolutely. The kids wanna sit down and pound on the piano or paint whatever they want and it always looks like crap because there’s no-, because they’re not, you’ve not gone to that, you know, with the-, that basic skill level, so you can’t be creative till you achieve a certain skill level.

The approach to creativity developed by teachers includes standards in their individual domains as well as in their collaborations with others. But whatever the situation, standards according to all teachers is a needed and welcomed part of the curricular approach to encouraging creativity.

**Understanding the “fit” of testing.** Participants revealed two ways teachers viewed the impact of standardized testing on the encouragement of creativity in students. One view puts the testing environment directly in conflict with the development of creative production in students. The other view does not see the state testing schedule as a threat to the encouragement of creativity in students. The views were not mutually exclusive but demonstrated how teachers worked within the confines of mandates from the state and marshalled their creativity agenda.

The nonthreatening view of testing by teachers rests on “trusting the process.” Peyton shares, in her reflection, this “outside of the box” thinking that goes along with the encouragement of creativity in a standards-based environment. In her opinion,
…I mean you want the standard to be your guide, but like not worrying about the testing that comes along with the standards. If you don’t worry about that then I think you have the ability to be more creative…but if you don’t stress out about it and not let that be your main focus but still making sure that they’re learning the standards, then they can be creative. This view of looking to the standard, not worrying about the testing, and concentrating on the “process” is also seen in Debra’s reflection. Debra said,

…my view is um, yes, there’s standards but they don’t tell you how to teach. You can teach any way you want to, they just want uniformity, into what is taught. And that’s where the teacher can become creative is how they teach it.

On the other hand, there is the view by some teachers that the standardized testing is a threat to the encouragement of creativity in students. This is seen in a comment by Lisa. She said,

…but in this severe testing environment that education is immersed in right now, that is hard to do so it’s-, you, you want-, as Rita said, that right answer, you want that answer, you wanna hear it so you can say yeah, yeah, yeah, that’s good, that’s right. The teacher in you wants that, but the creativity, creative person that you want to produce, you need to say that’s good, what else.

While the testing pressures made participants grapple with the meaning of the right answers to solve problems, assessments overall were also important. Participants spoke
of using formative and summative tests to assess students. The formative tests are used often to check students understanding over the course of a unit. The formative assessments are periodic test over the course of a unit. Formative tests include: exit tickets, group work,

**Understanding the goal of instruction.** The educational instruction was geared toward the encouragement of creative productivity in students, and is viewed by participants as a skill, which teachers spent time understanding and developing. Participant responses revealed how they developed their meanings for delivering lessons to encourage creativity. A participant comment summed up the ideas embraced by the school by saying, “And I think that’s the real problem is that we spend too much time showing them what we want it to look like instead of letting them figure things out for themselves.” Marie described the purpose of encouraging creative productivity in the following way,

Um, that is- the skill that’s going to get them through life. Forget math and social studies and all that other stuff (laughs) if they can- it’s resourcefulness. Creativity is being resourceful. Approaching a problem- and- it doesn’t have to be a visual artistic problem, it could be your car breaking down or, you know, you can’t get the tire off when you’re changing it. How are you going to be creative and do something different? Here Marie explains the important connection of creativity to real life. The goal of instruction is becoming a capable human being. The ability to deal with unexpected problems is an outcome of this type of education.
Participants did not give conclusive definitions to the encouragement of creativity because they believed it to be a very complex. But, though interactions and discussions among participants many similar characteristics were obtained relative to the encouragement of creativity in the classroom. Among the defining characteristics teachers related to encouragement of creativity in students were allowing for messiness in the process of learning, using open-ended strategies, maintaining a student-centered environment, giving student choice, giving students several chances to master the content.

**Using open-ended teaching strategies.** Participants explained that part of understanding of the encouragement of creativity in the classroom is the ability to let students figure things out for themselves. This is revealed in the participants’ remarks explaining how they pull ideas out of students instead of giving them the answers. For example, when asked about his definition for encouraging creativity, Neil said,

…”as it relates to my classroom, for me, it stems from a constructivist environment…what I learned is, and in science, science kind of lends itself to inquiry, although, um, you have to be willing to allow that in your room because, we talked about it too, it looks very different than, you know, the teacher in the middle of the stage lecturing. I mean, you pose a question, you have lots of materials, and you let them explore, and find out, and discover. And, those kinds of things, I think are encouraging creativity, because they’re not given the answer. They have to construct an
answer, and they have to look for an answer, and then construct an answer on their own. And that is the main piece of what I do at work that is encouraging creativity. Beyond terminology and understanding of constructivism, setting the stage for learning, participants described processes in their classrooms. In a focus group discussion, participants took turns defining how they see the encouragement of creativity unfolding in their classrooms. This included the teacher’s role. They said,

I think getting students to look at solving a problem more than one way. Letting them come up with their own idea (Simone). And building upon that. Like if we set the stage, you know, with an open-ended, you know, question. Or – it has to be encouraged, that’s for sure. Um, to where it’s not just one way to do something. Um, and allowing them the freedom to understand to just go ahead and do what they want to do and see what comes out of it. Um, that’s important (Nora). I think also encouraging um different ways to show that they learned ways – um, so different skills or talents that they have and just kind of finding out what those are and using them as the hook to get them to demonstrate their learning through that uh talent they may have or they may not even know they have that we can help them discover (Loraine). I think, too, another thing is like, I said the finding what they like, the talent, having that piece. They might not like every single little piece of every single thing but if you give them – okay,
if you connect it back to that one thing that they like, they can express themselves through that one way.

Participants explained how learning about open-ended learning strategies helped them to understand what it meant to encourage creativity in students. Problem based learning was also important. For example, one participant said,

… we’re asked …to change and be more creative as instructors. Problem-based learning, project-based learning are definitely ways because kids have the opportunity to pursue multiple solutions to a problem. You know, they’re not – they’re not focused in on – you know, there’s no checklist in a PBL that says, okay, these things have to get done and then you get an A. They’re encouraged to be creative to identify solutions that might not have been thought of yet or [inaudible] solutions that are already out there and figure out how they can be improved. So I definitely think that is a big part of encouraging creativity. Giving them the freedom to pursue multiple answers to a question, to a problem.

Encouraging creativity takes time and patience, and one of the ways teachers give students time to make connections and create their own ways of doing things is not only through problem-based learning and problem-based learning, but also through mastery learning and inquiry-based investigations. Rene said,

Pushing kids outside the box. Helping kids realize that there’s more than one way to get to an answer or get to how to figure something out, because I was raised in that generation where it was just basically one, two ways,
max, and you were encouraged to do it that way… But now it’s more or less, there are other ways to see something, there are other ways to analyze something and it’s okay to take those paths to try and figure it out…

In the sections below, problem-based learning is described more fully because it was one strategic strategy shared by all teachers in the school. Project-based curriculum and inquiry were closely related and leading to mastery of domain specific knowledge.

**Problem-based learning as a vehicle to encourage creativity.** Problem-based learning (PBL) was the most discussed open-ended strategy in the participant's reflections. This open-ended teaching strategy was mentioned in participant statements as a framework, used by teachers, in collaboration or separately, toward the development of encouraging creative productivity in students. Teachers are responsible for conducting one problem-based learning unit in conjunction with their grade level professional learning communities. These interdisciplinary units are very involved bringing together the school and community. One teacher expressed the impact of PBL on learning saying, “Well, we’ve had… a lot of training and not necessarily on creativity but I think that PBL training we’ve had has helped us become more creative.” Nora explained,

And then with the Problem-Based Learning training, that opened up a whole new world for me personally. Um, so I think my teaching style – maybe how I delivered it, has always been the same. But what I’m delivering has changed drastically or why I’m delivering it has changed a lot since I’ve been here.
In this commentary Nora expresses how she has grown in terms of her teaching due to the addition of Problem-Based Learning to her teaching strategies. Learning how to conduct Problem-Based Learning units has changed Nora’s perspective on teaching. Instead of the dissemination of facts, Nora is now focused on how and why of her content.

Participants explained that, with problem-based learning, they’ve learned authentic problems are the best. One teacher explained, “When you’re planning something, it’s gotta be authentic or the kids see right through it and that helps foster the buy-in process.”

Teachers of the same grade level in conjunction with specials coaches, are expected to develop at least one problem-based learning unit a year. These units are developed months in advance. The thought and energy put into the development of these units, and the emphasis on authentic problems, provide a rigor that is difficult to consistently replicate over the course of the year. Examples of authentic problems teachers developed units around include: working with the local park system to understand invasive plant species and develop solutions to stop their spread; a problem was developed with the city to bring awareness to the art district; in another PBL unit students worked with the historic society to inform the community about the Native American population that inhabited the region the school was in. Therefore, the problem-based learning strategy is not used as often as project-based learning or inquiry-based investigation strategies, in the school of study.
Project-Based Learning as a vehicle to encourage creativity. Project-Based Learning is another pedagogical strategy used by teachers to encourage creativity in students. Teachers use project-based learning to involve students in engaging complex questions, problems, or challenges. Rita reflected saying, “…project-based learning is definitely a way because kids have the opportunity to pursue multiple solutions to a problem.” Simon mentioned connecting projects to creativity. He said, “On a project, any project I have the students do, there’s a rubric with it and creativity is always a line in it.” It can be inferred from this statement that while projects have similar characteristics, there are enough variables for students to design different ways to get to the expected outcome.

Nina gave very informative comments about how creativity is linked to Project-Based Learning in her instruction. She said,

There’s nothing wrong with projects. I still do them. But the difference now is I’m like, tell me what you want to do. You know? But then I was like, you know, three-page report. Paragraphs. Indent your paragraph… Where now, with writing I have to do stuff like that but now I don’t care if it’s an animoto or a paper or a poster or a PowerPoint. I don’t care, you know? As long as it shows… I never once would have thought I could write a rubric and assess kids with seven different modes of showing me how to do it.

In this account Nina shows how projects encourage creativity in students. She speaks to the idea that projects can give students choice, in the way in which to
present their findings. Grace, another participant, uses projects that offer many ways to get to an answer. Here is her description of a project she gave in her class,

Um, when I do my civilization project, I have kids research um the area that they choose to build their civilization. And they have to look at a modern day problem that is going on there. Um, one group this last school year looked at Germany and in Germany there is a huge issue with bullying in the schools and they have a rate of violence in the schools so they had to look at, well how would you go about solving that in a way that it never happens in the first place? So they had to look at their civilization and say, well then, our main theme of our civilization would have to be that everyone feels valued and so there – and then they had to go and look at their social classes. How do we build a social class structure so that everybody feels valued? How do we build a um government so that everybody feels valued? How do we build an economy that everybody feels valued? And they really had to get creative with some of these things because there is no one set answer. Well, if I do it this way, everyone will feel great about themselves. That’s not true because you know you’re working with humans and you never know. But they had to come up with some kind of a framework and um they did a great job with it. So I was very impressed. I mean, they took it even to their flag where their flag used symbols that were kind of for at least Americans, we think
of those as universally unique you know symbols. Um, they had like uh
certain flowers and their unicorns so, it was kind of cool.

This project gave students a chance to design unique solutions to problems that exist in the world. Students were given an opportunity to engage in a number of skills connected to creativity such as, critical thinking, problem solving, and research.

Inquiry-based investigations as a vehicle to encourage creativity. Another open-ended pedagogical strategy used by teachers to encourage creativity are inquiry-based investigations. The school model, integrated with the school’s vision statement, has led to the decision that the school’s mathematics and science curriculum would be inquiry-based. Therefore, Connected Mathematics was chosen for the curriculum for mathematics, and the science curriculum is based on Science Education for Public Understanding Program (SEPUP) investigations. These inquiry-based curriculums start by posing questions, problems, or give facts about an issue. They provide a smooth path to the acquisition of knowledge, and allow teachers to be facilitators of knowledge. Debra explained the impact inquiry-based learning had on her teaching in the following way,

So the content is inquiry-based and that’s what makes all of the difference in the world. Because, if I have a traditional textbook then if I want to spark creativity then I have to go outside of that. Whereas if you have an inquiry-based content like me…the student come in and then we will launch an investigation.

Lorraine also discussed the importance of inquiry-based learning in a science classroom saying,
Um inquiry is kind of something that I think science classrooms, it’s already engrained. That’s a huge thing in our classrooms with inquiry based lesson. Where you’re giving them something to discover and discover how it got there and discover what it’s gonna look like. And just kinda be curious…You know, and ask questions. And I think we’re teaching them to ask questions about the natural world around them. It’s a huge science concept.

In this statement Lorain is addressing the importance of discovery, through inquiry-based lessons, to creativity. In her classroom, students are given the opportunity to observe phenomenon, ask questions, and use these practical skills to develop solutions. Neil explained how the the inquiry-based investigations encourage creativity in students. He said,

I also think that our building is set up in such a way that it encourages creativity inherently because of the way we teach. Um, science and maths are particularly inquiry-driven, very constructivist. And when you’re put in that situation as a learner, you kind of have to be creative in order to come up with problem solving – doing problem solving and that kind of stuff.

Creativity through inquiry-based learning, according to Neil, is encouraged in students by putting them in situations where they must draw on their knowledge to construct solutions to a problem. Mastery learning was another open-ended strategy used by the participants.
Mastery learning. Data from participant interviews show in the process of meaning making teachers have embraced mastery learning as a means for aiding students in understanding content. The purpose of mastery learning is to provide students with multiple opportunities to show that they’ve understood the content enough to pass standardized tests. Participants described mastery learning as a very important quality of the school in the encouragement of creativity saying,

…I think mastery learning belongs here only in a sense that and it’s, it’s very real world. If I’ve had a bad report and I work for a multimillion dollar company, I’m gonna rewrite that report… I’m not gonna send that report out just because I wrote it… I’m gonna rewrite it ‘cause I didn’t write it well enough and I think that’s what mastery learning is all about…Well sometimes yeah, your sketches and your self-assess-, okay. I got it…It’s, it’s being able to, to improve all the things that you’ve already done…Iterations…Scaffolding them to that next level…So I think mastery learning does belong on that list. From that standpoint, maybe not the retaking test standpoint.

Marie’s observations further developed the idea of mastery learning. She explains the reasoning in giving students multiple chances to revise, redesign, or modify their work. Here is a description of mastery learning given in a teacher reflection,

…when we talk mastery learning and we all go back to that ugh, the process. I like it…just the mastering of the topic…The-, you know, you really know it. Which is which part of the design process? That’s the revising? I’m just
thinking that it would be the revising part, right? We keep asking about revising or redesigning until you master it… Until it’s there.

Marie further explained the importance of Mastery learning, its importance to the school, and how it is used in the school. She expressed,

I mean, mastery learning is huge. It’s, it’s the heartbeat of the building…

I think mastery learning belongs there only in a sense that and it’s, it’s very real world. If I’ve had a bad report and I work for a multimillion dollar company, I’m gonna rewrite that report. I’m not gonna, I’m not gonna put, I’m not gonna send that report out just because I wrote it…I’m gonna rewrite it ‘cause I didn’t write it well enough and I think that’s what mastery learning is all about. Well sometimes yeah, your sketches and your self-assess-, okay. I got it… It’s, it’s being able to, to improve all the things that you’ve already done. Iterations. Scaffolding them to that next level. So I think mastery learning does belong on that list. From that standpoint, maybe not the retaking test standpoint… It’s the same way that they learn, they’re learning. Their mastering the-, yeah, understanding, fully understanding that whatever it is. Whether it’s writing that paper correctly and citing it, whether it’s science, whether it’s engineering, that artistic, you know, anything. It’s, it’s that mastering of a topic.

Participants made it clear that mastery learning is about helping students to grasp the content fully and completely. Lisa suggested mastery learning is about,
Their mastering the-, yeah, understanding, fully understanding that whatever it is. Whether it’s writing that paper correctly and citing it, whether it’s science, whether it’s engineering, that artistic, you know, anything. It’s, it’s that mastering of a topic.

Participants understand mastery learning as helping students to see failure as a beginning, and not something that is set the student back in their pursuit of skill. This is seen in the following thought by Lisa,

And I think mastery learning is um that whole idea that it’s okay to fail and that you can have more than one chance to get there as long as you get there, it’s okay. Sometimes it takes longer, you know? And so I think setting up a safe classroom environment that they know it’s okay to fail and that they can come back from that, it encourages them to take risks.

Mastery learning is an iterative process teachers use to give students the time to master fundamental knowledge. This is an important concept in Creativity Studies because mastery of fundamental knowledge is the basis of creative expression.

**Development of Meanings**

Participants communicated expectations they have for students in encouraging them to be creative. The characteristics presented by the participants as necessary for students to attain include: taking risks and failing often, and student solution development. All participants viewed these characteristics as seminal to the student’s ability to be creatively productive.
**Taking risks and failing often.** Participants mentioned helping students become risk takers as another significant quality in the encouragement of creative productivity in students. Familiarizing students with failing, and encouraging them to fail often, has become an important aspect of the school culture. Sarah explains this concept when she says, “I try to – yeah, definitely, I try to encourage that – encourage them to try, to take risks. I think that’s a big part of being creative, is willing to take risks.” She also explained, “So I try to think, get them to try ways that might or might not work to solve a problem. So they know that failure – it’s okay to fail.” However, participants have come to the conclusion that they must model failure for students. Participants described modeling failure as being initially difficult, but was something they were able to get used to. Modeling failure is a unique experience because it happens unexpectedly. Participants explained the awkwardness of failing in front of students and the attitude to failing they model for students,

One time we were doing on invasive worms and uh – we found out if we threw…Garlic powder on the ground, the worms would pop out of the ground because they irritate them. The ranger came out, he did it out in our parking lot. I mean, downtown. So we went out into the woods and we threw it out on the ground and – Nothing. With the kids, and nothing happened. And uh twenty-five minutes goes by and the kids are staring at the ground, and we’re like, oh yes, it’s coming, it’s coming. But here we found out it had to be fresh mustard – or ground garlic. Mixed fresh. We
had mixed it the night before to save time. And it was a total flop. It was a
disaster but I mean uh – We improvised to fix it.

The main idea in this reflection is how the teacher modeled failure for students by not
letting the unexpected breakdown in the lesson bring an end to the experience. The
teacher accepted the failure, and was able to persevere through the problems by finding
other means to solve the problem. This is how teachers expect students to respond to their failures.

Even though teachers may not have been comfortable with making mistakes from
the beginning, they learned to see its value, especially with relating to their students.
Simone shared the following insight of failing and risk-taking. She said,

…it requires risk-taking because when you’re looking at creativity, we’re
asking kids to be risk-takers, put themselves out there, and take a chance.
And that’s hard. It’s hard on instructors. As adults, as the coaches,
thinking back over the last seven years? Risk-takers. You had to be willing
to take risk to try new things. Be willing to fail so that you can grow from
the mistake you make. And it’s the same thing with the kids. When you’re
talking about creativity, you have to be willing to help them make their
mistakes, take those risks, and just be there to guide them on and not make
them feel like a failure but hey, this is just part of the steps of learning the
different processes. You’re going to make mistakes. That’s okay. And in
the past, you felt like it wasn’t okay to make mistakes... And you know
what, at first, it was very frustrating and um I think in the early years,
somewhat embarrassing. Because I didn’t know some of the questions that they were asking. Now I’m very comfortable with it, you know, because we know avenues that find what we need, so I’m cool with it. It’s like, okay, this is something we can look up together. Better yet, you find someone that you want to work with and find out. I mean I can make simple mistakes in math. And they’re like, “Oh you!” and I’m like, we all make mistakes! And I’m like, the thing to do is to learn from them. So like I don’t care if I make a math error in front of them.

Encouraging students to take risks and fail often is a delicate, but important relationship, to the encouragement of creativity, that must exist between the teacher and the students. Marie explains how fragility of this relationship and the care the teacher must take not to do harm to the student’s sense of self. She said,

…taking away the fear to try something new or the fear to even come to me with an idea. You know, not saying, you have to color in the lines and the sky has to be blue and flowers have to be red. Allowing for- and sometimes starting the conversation, what if we did this? Let’s them know I’m open to other ideas and other ways to do things. So I think just me being open and not squashing their ideas…And sometimes their ideas aren’t always the best or aren’t always doable but then we make them doable through some discussion. Taking away that fear, I think. Coming to me with other ideas is a big thing.
Marie’s comments show the importance of having a relationship with students to take risks. Teachers do this by developing an environment where students feel comfortable to try new things, taking the role of a guide to encourage students, and appreciating student’s ideas.

The teacher and student relationship, for students to take risks, must be one of respect. Participants believed the teacher’s ability to connect with their students makes difference in students taking risks or not. Rita said,

I’ll have ‘em read an article, it’s argu-, you know, like, argument things should, should a 16-year-old be tried as an adult? You know, are they an adult, that’s a rhetorical conversation and I will get from some of the kids who don’t really ever have much to say, they’ve got something to say about that. That to me, um, lends itself to creativity. In my response to them, I never devalue their answer. I said that is really good, that is a really cool way to think of that. Now I have some kid come up with something that’s off the wall, whatever, but that’s the way they see it, but that’s the way they see it. So I have to find some value in that as an educator and I might have a couple kids out there rolling their eyes you know, at them but before I start the conversation with them, I said everybody’s point of view is valid, everybody’s point of view is, is needed in this.
Rita’s question was age relevant and stimulating and thus provoked a response from shy students. But the most important thing that Rita did was to instill in her students that everyone’s ideas count.

According to teachers, the coach’s toolbox also requires that the teacher must be a model for learning. Therefore, common to many participant statements was the coach’s ability to model failure. Kate, explaining the importance of failure says,

You know, that’s a really – that’s one of – I had a – and I wish I could remember the quote – but I had Thomas Edison had a quote about failure. That I have in the window of um – and so that’s how I really dealt with failure. I said, how many times he had to do something before there was a success and um I guess that was – and I learned that from that entrepreneurship class. I actually chose someone and I chose the quote and I had that posted there so when there was a failure, you could look at somebody successful to see how they dealt with failure. And I actually have a video clip that I just took the other day and posted it on Facebook to all my Facebook friends who – it’s basically like an educational technology site where I just share educational technology with folks but of all the different people like Edison and Disney who was told he couldn’t be a newspaper writer because he in fact didn’t have a creative idea in his mind. And about Einstein who was never – who his teacher said was never going to amount to anything. So I think um I look to those people because
if they can be – if they’ve had so many failures and they were such a success, then I think that’s encouraging to the learners.

This participant disclosure shows the teacher’s development of a culture in the classroom rests on respect for all. This creates an environment for all to speak their mind. An environment of respect is also the catalyst for student risk taking.

**Student solution development.** Participants communicated the encouragement of creativity in students leads to many novel and original solutions. One participant expressed, “I don’t wanna see cookie cutter. I don’t wanna see everybody that looks cookie cutter. Everybody looks the same, everybody does the same thing.” Also, having the expectation of students to develop their own solutions is key to the encouragement of creativity. The encouragement of creativity can lead students to discover an old idea, but new to the student. Debra said, “I’m seeing multiple solutions with different variations of things, um, even though the idea may not be a new math idea, I know it’s new to them. Something that they came up with but they haven’t seen that before.” Another outcome of the encouragement of creativity is unforeseen products. Here Marie explains this:

The creativity piece is are you, are you doing something unexpected. I can’t think of what my wording is, I would have to look it up and um, but you always want something unexpected, maybe you solved a problem in an extra-expressive way…so yeah, your novel and it, it-, with my subject, it hits into that self-expression.

Here Marie describes the creative solutions of students as unique and unexpected. In these solutions you can see how the student expresses themselves.
Another characteristic that teachers sought to develop in students is curiosity and exposure to new things. Encouraging students to ask questions was a major premise behind the encouragement of creative productivity in students. Kate stated,

You know what’s its dependent on? Being curious…You gotta be curious about stuff… And how do you foster-, that’s, I’ve read articles on how do you foster creativity, or how do you foster creativity? We, we expose people to more things. ‘Cause if you think about our kids’ education that they get here, this is not the perfect place or utopia by any means, but we do expose them to a lot… And, and some kids from that background that they’re coming from are-, wouldn’t normally get, you know, a computer in their hands. And taught how to use it correctly, not just looking up answers to you know, use it as a tool. We expose them to a lot of the creative process. And the creative process for things that we all have around us like cell phones with cameras and things like that that most people just, I mean, most 13 year olds just take for granted that this is always been there and that it’s always existed. And our kids not only know where it came from, they know who it came from and they know what they were thinking about when they created it so yeah, it’s, it is, it is a very special environment that they do.

**Interpretations of Teaching and Learning**

The addition of encouraging creativity in students in a standards-based educational environment, for the school in this study, meant redefining how teaching and
learning should proceed. Therefore, together teachers redefined the following elements: how the teachers should interact with students in the classroom, the expectations of students in the learning environment, and how the learning environment will be used efficiently.

**Redefining the teacher’s role.** Participants expressed the character ascribed to the role of the teacher. They explained that the teachers worked together to recast the teacher’s role as a “Coach.” Neil’s thoughts express the relationship of the teacher as a Coach to the encouragement of creativity in the given educational environment,

> So I think that part is kind of a big part of pushing creativity is not being the sage on stage, give them the opportunity get through messy problems and try to collaborate with each other… When they collaborate, when they brainstorm, they’re going to come up with stuff that wasn’t necessarily expected.

When teachers spoke about the role of the Coach to accomplish the aforementioned tasks, several characteristics common to the role were mentioned. Ultimately the role of Coach as explained through teacher interviews is to prepare students for the future through the type of learning environment offered by the school. The data shows that being a coach requires one must be able to make connections with their students, and have a deep understanding of content.

**Content Knowledge.** A common characteristic of the coach, as shared by the teachers who were interviewed for this study, that the teacher must have a great deal of content knowledge. According to participants, content knowledge calls for a deep
understanding of the content beyond the fundamental information. This includes skills, concepts, principals, theories, history, and facts related to the content area one is teaching. Moreover, it represents the teacher’s ability to think flexibly within their content area. Participants revealed in their comments that the encouragement of creativity in their students was correlated to their own creative output. But even if the teacher does not know their content well, they must have the drive to find out. Debra explains this idea in a statement saying,

… but I think you have to really, really know your content well. You don’t know that content well, you gotta dig deeper and deeper and start interacting with other people so that you can learn your content better.

That’s how I, I think it lets them be creative.

Debra spoke of the importance of content knowledge to the encouragement of creativity in students in an individual interview. She expressed that one of the most important character traits is having an interest in having a deeper understanding. She said,

In a previous school that I worked at, we started an inquiry-based mathematics, and there was a few of us who could really get into it--dive into it. We had secondary mathematics degrees… and the teachers who had elementary or middle school, they didn’t like the inquiry-based mathematics. And I always believed that it was just because they didn’t have a deep content knowledge. Whereas, … when you got a degree in secondary mathematics you’re taking almost as much mathematics as engineers… When you get out and start teaching…all of these things
come together. And so I just believe I have a deeper understanding of mathematics with that degree in secondary mathematics. Because I have a deeper knowledge of it I can make more connections and when we’re doing inquiry-based then I can pull in all these different things from higher grade levels to the kids that someone else, who does not have the degree or the interest can do. Now for me it’s not just a degree. I mean I read my math journals all the time. I’m interested in the different ways that mathematics is being taught in the application. Traditionally students learn, you know, these algorithms or the steps to do math, but they have no idea what it means.

As seen in this excerpt, content knowledge is aided by other characteristics such as having an interest in the area you a teaching in, and the ability to gain a deeper understanding in the content area.

Debra spoke of how she is able to become familiar with her content so that she could encourage her students to utilize their creative capacities. She said,

I raised my level of questioning so when I raised my level of creativity, then I could help kids raise their level of creativity because the more and deeper I delved into my content, then the more um, I was more in tune, I could, I could hear, I could listen to the language better and I could question and kinda coach out those creative you know, aspects in math that we’re looking for.
Teachers sought many different ways of developing pedagogy within their constraints. Teachers used their skills and knowledge of content in combinations to create an environment of engagement. Marie explains,

I teach color theory in a million different ways. So maybe it starts with me being creative. And creativity is not just doing whatever you want, it’s working within your constraints, in a positive way or in an unusual, different way. A different approach. So if I take those standards and I look at them and I’m creative with them myself, it just- I don’t know, it’s not a problem for me. And maybe knowing your content well it a big thing. Because if you just know it a little bit, you’re not going to stray away. So maybe, really deeply knowing your content is a good start. And then thinking creatively with those standards. That’s how I do it.

Also, Kate shared how she uses her content knowledge to make information comprehensible to her students. This includes making the learning of concepts easy for her students so they can use them to produce interesting things. She says,

I guess part of it is leading them – leading them to information not in such a way – it’s more like problem-based learning in that they’re discovering a problem so they kind of have to – you kind of have to – kind of – present the environment where they can discover the problem – so I guess and example of that would be like um – when they do their science fair paper, which happens pretty early on in seventh grade um they want to use some sources that maybe are not – like the databases that they use, I mean they
know they can use any of that information and don’t have to worry about you know the origin of that because it’s all embedded. But when they go out there you might pose a question like how do you know if that’s reliable information – like what are you going to do to figure that out? And um, so that’s a puzzling kind of thing –.

In another account Lisa gives examples of how she designs lessons to encourage creativity, with an emphasis on content knowledge:

For example, um, I wanna teach something by Edgar Allen Poe, The Raven is a standard piece, it appears in a lot of textbooks, you should read The Raven before you graduate high school. That’s whatever. But the standards say that they have to know what similes are, what metaphors are, what symbolism is, all of these things I could teach using that piece and then beyond that, um, is the more creative piece where I say take all of these aspects, take all, everything that we’ve learned about the standards and write like Poe. Having them pull something from themselves, that’s theirs, using those standards, that’s the definition of creativity for me.

These sentiments were shared in another interview. Kate shared how she used her content to encourage students to be creatively productive, she says,

What changed in that area was that I went beyond – beyond the discovery of information where – and I went to the point where the learners were actually creating the curriculum. So that’s probably – that’s probably the difference here. Before they were doing some discovery – in my other
environments, but this was a step further to make them the creators of the learning.

When commenting on the idea of content knowledge Rene explains the importance of convergent and divergent ways of thinking. She says,

Pushing kids outside the box. Helping kids realize that there’s more than one way to get to an answer or get to how to figure something out, because I was raised in that generation where it was just basically one, two ways, max, and you were encouraged to do it that way.

In this comment Rene expresses the need to go beyond facts and one solution to using facts to pushing kids outside the box and realize there are more than one way to solve problems.

The central focus of content knowledge is that the teacher creates situations and environments, by utilizing their understanding of pedagogy. Here is a focus group discussion regarding what teachers look for, according to their content area. Valerie begins,

By the way… I gotta tell you that one additional sign to me of creativity, and this is sort of a straight way to look at it, when they start asking questions because… a lot of times it’s all about answers and I’d always try to get my kids to think of it as a question, not as an answer. And so when they’re asking questions about a topic that they’re learning about or asking to go further, to me, I feel like I’ve encouraged them to be creative.
Valerie has expressed the ability to ask questions is significant in the content area she teaches. Rita also explains how creativity is related to her content area. She said,

It’s definitely when they take a historic period or something that’s happening and they relate it to something that’s happening right now. It just makes me-, my heart wants to explode because I’m like, oh, my gosh!.. and I just wanna like, hug some of them because I’m like, oh, my gosh and they say I heard in the news, which shocks me ‘cause 8th graders talking about the news or on the radio um, and they bring up a topic or something that’s really a hot topic, whether it’s you know, race relations or, or you know, health issues or whatever. When they bring it up and they compare it to-, whether it’s in my class or whether it’s in 7th grade or 6th grade and they can pull it back and they bring it in, I’m like, oh, my gosh, this is so real. And I just love that, that’s what my whole thing is when they bring that real life into you know, 1841 or whatever. It’s like holy smoke, where did that come from? Read a novel that was written in 1953, her read a novel that was written in 1949 and have them point out the window and say Big Brother’s watching because they see a camera hanging off a building and just to have them-, or have them read a novel and say it’s happening now, it’s all around us, how did they know? How did they know? It’s because it was happening then but not so much on a technological scale. You know, that kind of thing and just have them do
that. I think that our building is all about choice and in that choice, you get creativity.

These comments offer another view of how creativity is related to content knowledge. Rita shows the importance of students being able to make connections by using information from different sources.

Another important aspect of content knowledge is the teachers understanding of integrating facts, processes, and standards of the content. Lisa explains how she utilizes her knowledge of content,

Within the bounds of the standards. Like, five paragraph paper. You gotta have, you’ve got to have the introduction, got to have the thesis, got to have your 3 paragraphs, have to have the conclusion, everybody knows how to do a 5 paragraph paper but, what I do, is I give them a choice about what to write about. I give ‘em 3 different things, a definition paper, a narrative paper, an informative paper. What are you gonna do in that, and then what they produce within that, within those, within that box becomes something else. And it’s different than everybody else’s.

Lisa utilizes standards and processes of the content to give students the constraints of the project, but gives students space to figure out how they will solve the problem in their own way.

Having a good grasp of content knowledge means understanding the goals of the content and the purpose of the knowledge within it. These in turn become goals and
purposes for student growth. Marie’s reflection gives insight into what she wants her students to do with the skills, information, and principals once it is learned. She said, … I wanna make good consumers of art. I also want them to see that connection between art and every other content area. I want art to be the center (laugh) without them knowing it…consumer of art means that, we all look at art. You’re consuming art when you look at art. When you decorate your house or your bedroom, even the kids, they are consumers of art. Somebody had to design that tennis shoe that is so popular. They are consumers of art. SO it’s a visual aesthetic, visual language that they’re using. So I just call it a consumer of art. Not necessarily, they’re buying art. But when they look at art or they go to the museum or they see a public piece of sculpture and they notice it and they point something out. I do see them noticing more of the art around them as I work with them. You have to kinda teach them that too.

Here, Marie describes her goals and purposes for her time with students, which include developing students who will notice and appreciate art and aesthetic beauty in their everyday lives. Marie also explains how she develops her student to take on the role of consumers of art. Here is her reflection,  

So okay, where I was going is I kind of give them fundamentals. The elements of art, the principle of art, how do you use the elements of art to make it- something emphasized or whatever. And I teach them basic techniques fifth and sixth grade, basic techniques. Here’s how you water
color paint, here’s how you can color water paint, here’s how you mix colors. I never give them brown or black paint, which drives them crazy but pretty soon they’re used to it. And they’re creating their own browns and blacks in a much more interesting way. And it gives more variety and teaches them about color. Um, sixth grade I start opening up- I give them-it’s almost like a problem based learning or- it’s not really even a project. Um, for instance eight grade last year did a little study on pattern and they had to study pattern from different cultures. And they had to do some sketched of patterns and what attracted them ad why this pattern is a motif from the Asian culture or the African nations or Native American or Aborigine or just, you know, in different time periods. Renaissance patterns and motifs were different. So they kinda got an understanding for how things change ad how- which is a standard, how things change and how they move and evolve and kind of rotate through. Um, and then their assignment was do something with pattern. So they could paint a big giant pattern. They overlapped patterns, they put patterns-some of them did digital work where they, you know- but it had to have pattern in it. They had to use pattern in their piece. So by the time I get them in eighth grade, that doesn’t drive them crazy. If I didn’t that in fifth or sixth grade that would drive them crazy because there’s very little constraints. They could choose their media, they could choose their size, they could choose how to use their pattern. It didn’t have to be a pattern like we think on a piece of
cloth. It could be a pattern of a person being repeated over and over. Or an event being repeated over and over. So sometimes just the assignment forces them into thinking creatively.

Helping students to understand the history, processes, knowledge, and traditions of a content gives purpose to the teaching and makes learning relevant and interesting.

**Standing back.** As seen in Neil’s reflection, the coach’s role rests on the ability to stand back and observe students, and to remain sensitive to their needs, but, at the same time, leading students to answers instead of giving answers. This inquiry learning rests on the Coach’s ability to be flexible within their content. Neil describes this as inquiry teaching. He said,

Just um the idea of becoming like learning coaches as opposed to a teacher. Um, the idea of not being didactic and you know, involving kids in collaborative situation where you become an opportunist with questioning you know and that questioning extends thinking and you’re not there to give them answers. You help them – you’re there to guide them down the road to what they think is the right answer, you know? And that very different than standing up in front of a class of thirty and saying, you know, I mean – I taught math in my old life and I would teach them an algorithm and we’d do practice problems, and we’d take a quiz. And then we’d do more practice problems, and then we’d maybe take another quiz. Or we’d take a summative test and that’s how it was and that’s not
how things typically happen around here. It’s much different approach to learning and thereby a much different approach to teaching.

Neil’s explanation for standing back and taking on the role of the coach is critical to the student’s ability to exercise their creative abilities. Lisa further explains inquiry learning and its relationship to coaching and encouraging student’s creativity by not giving the answers, but acting as a guide. This relationship leads students to answers through a series of Socratic questioning. She said,

I know in my old life when a student would hit a road block, in my old life, I would say, oh well, have you – you know, do it this way. And I would show them the way that I knew how to get around it and solve it. And now it’s well, what haven’t you tried yet? You know, I put it back to them. I’m stuck. Well what have you done? Okay, well what haven’t you tried? You know to try and get them to think more critically and find their own solutions.

Socratic questioning is a way to maintain distance, but at the same time guide students by asking leading questions.

Another teacher’s recalls how the intentional development of relationships with students naturally inspires creativity. Neil revealed that the teacher student relationship should be one of respect. Furthermore, coaching students toward creative productivity requires making strong connections with students. Neil expresses this in the following manner,
…it’s creating connections immediately with kids…cause I think through this all, that’s the other big part. It’s not just the conditions or the environment in which you provide, or the template of the classroom you provide. It’s, it all starts with that first day of school when you shake their hand look them in the eye and start developing that relationship with each kid.

The development of individual relationship helps teachers to know how to guide and encourage each student in terms of creativity. Sara gives insight into the importance of forming positive relationships with students when seeking to encourage creative productivity. She explained, “Cause you could have one environment in the school but if they go into the classroom and feel stifled and scared to- then they’re not gonna be very creative.” Loraine exposes another aspect of the relationship between students and teacher, in the encouragement of creativity. She suggested the natural next step in the relationship, which is the evolution to helping students take risks. She said,

Cause you gotta really know your kids first off and know what they’re good at and where they’re strong at where they’re comfortable showing you. Cause some people can be really- have like a great gift but they aren’t comfortable doing it in public, you know… And so trying to bring that out in children that there’s different ways you can reach the same goal. You know and finding- not just exploring what you’re good at but exploring maybe, what you don’t know you’re good at yet and digging into that. So
kind of force them off the comfortable path too. Cause they’re never gonna know they’re a great painter unless they paint something, you know.

Here Loraine is uncovering the significance of the teacher developing a relationship with students to the encouragement of creativity. It is this relationship with students that encourages out what is already there in students and aids in its further development. The teacher must be skilled and clever enough to act as a guide and allow the students to explore and develop.

**Teaching higher order thinking skills.** Another skill of the coach, as stated by participants, is the ability to lead students toward higher order thinking. Rita recalls professional development on Depth of Knowledge (DOK) to aid teachers in getting to the higher order thoughts in students. She said,

That yeah, I remember a lot of – I remember one of the bigger things that I took from that was the – didn’t they have that DOK, the depth of knowledge? I mean, I know like now we have that wheel that we just had on that PD from Elise. But I know that they have one that was like a rubric, it was just like a rectangle. You want to try to get to that bottom right-hand corner so even though we were talking about creativity, we’re also – it had to do with that – mostly the inquiry-based like type questioning, the higher order thinking skills to make them be creative.
The point of professional development such as DOK is to get students to think about their thinking. Valerie further explained the importance of higher order thinking skills in encouraging creativity in students, she said,

So, so it was sort of my entrée in the higher order thinking skills and how all that fits into creativity and it was difficult because it was after school every time we had it but I, you know, I, I feel like even if I don’t remember a lot of the details of what they told us, my consciousness was raised, my, my, my, my awareness of, of how to pull in creativity, how to create an environment, I don’t wanna call it pulling creativity out of kids, but the, the-, how to create that environment where creativity is, is treasured…

The concentration of higher order skills for all students changes the dynamics of lessons. Since creativity is a higher order skill, teachers must develop means for pulling it out of all students. Rene expressed a way she has learned to engage in encouraging creativity in all students. She said,

I find myself dealing more with the other type of questions, the ones at the end that we used to consider “enrichment”. Those are ones now that you deal with, but you deal with in a different way where you know, you have the kids talk in small groups, they collaborate with each other, they discuss one on one with another student. They just discuss among themselves what they think about that. That takes the load off having to talk in front of everybody at first, and putting those thoughts out there
because you’re talking in small groups. Then, as they feel more
comfortable, you begin to ask for volunteers, who wants to share? What
were your ideas about this? What are your thoughts about that? You get
more kids that want to participate because they’ve had a chance to talk
about it and hear what somebody else thinks and hear you know in
comparison what they think.

Rene shows that getting to the higher order thoughts of students requires sharing
with others and learning from others. Here, the encouragement of creativity is a
result of collaborating, sharing, and experiencing others thoughts. Thus, it is
easier to express creative thoughts in groups than alone.

The teacher’s role in Science Middle School has been redefined to be a coach.
The coach is a different type of social object than a teacher. The coach cultivates a deep
understanding of content for the purpose of being able to change directions in a lesson or
think on their feet. Moreover, the coach stands back and observes while the student goes
about in a self-directed manner. Coaching also seeks higher-order responses from all
students. Modeling risk taking and failure is an important aspect of coaching as it leads to
student’s comfort around teachers.

Redefining the student’s role. The purpose of redefining the student’s
role as a learner was to prepare them to take initiative especially in day to day
problem solving. Helping them to see their own powers and to help become
confident risk takers. One of the ways teachers embedded the encouragement of
creativity in the school’s culture was through the development of learner core
values and skills to define learner work. In their comments, participants spoke of Core Values and 21st Century Skills as significant part of manifesting the encouragement of creativity in learners. Although this was highlighted in earlier sections, the development of values was described more fully here. Neil stated “it started with developing those core values and you know emphasizing 21st century skills and um – so yeah… I mean like culture is a giant thing of instilling creativity.”

**Development of core values.** Core values were defined by the teachers to give character to the type of students the “delivery system of education” would produce. Loraine recalled how the teachers developed the Core Values she said,

I remember that discussion on the core values, still pretty well. And I remember how we had- on the board all the characteristics of what we wanted our learners to look like. And there were so many of them. And then we wanted to group them into ‘I’ words so that we could make the cute little C, which looked like a cell with the eyes around it…And we came up with- we narrowed it down to six. But I remember that took a very long time of, alright now we’re down to thirty now we jury it down a little bit more and why do you feel this one in debating. And yeah, I think we really got to see a lot of each other’s personalities staff-wise. And just that kind of common ground of doing something that nobody else had done and having that experience; it made us trust each other.
The teachers developed Core Values, or characteristics for students to strive for during the stages of school development before the school’s opening. These characteristics include: Imagination, Innovation, Integrity, Creativity. Three of the five core characteristics, as defined by the teachers, have a direct relationship with creativity. The Core Values were made possible through a collaboration of the teachers to decide the fundamental values to best reflect students character. Neil recalls this experience:

“Well, the – when you talk about the core values of innovation and imagination and integrity and inquiry. We had to come up with those. Those were developed by us as part of the design qualities we wanted to feature as core values in our building. Culture is a big part of it. And I guess that’s the thing when you talk about being ingrained, that’s really the thing. I know that, I was uh – got to go to Denver with Mia early on and the one thing that that guy told us is that – that principal out there at the SST was, your school is going to have a culture (laughs) so you need to make it like you want it to become, not what it just organically becomes. Be planful of that culture.

It can be seen in Neil’s statements that there was an effort by teachers to develop expectations for the students. The Core Values are a large part of these expectations. Loraine, describes how the design of the Core Values have affected her work at the school:

I think that – well, first of all, I think the way our staff came together in the beginning and we actually design these core values and um how we
were going to teach. I think, we had a big part in the design of that and what it was going to look like because I know at first, we didn’t even really understand what that was going to look like in the beginning. And um, so, there’s a lot of buy-in with that because we felt a part of that – establishing these things that worked um and I just felt supported by all of these core values and the inquiry method and I did teach science for a while so that was – that was kind of a natural transition for me.

Participants spoke of the Core Values as the fundamental ingrained cultural element in encouraging a creative attitude in students. This is seen in the following conversation between participants explaining the relationship between encouraging creativity and the Core Values:

So that is, I mean, when we, we might not be calling it creativity, we might be calling it innovation or imagination or... Our school has a definition (Debra). I mean, it’s a written out definition of it um... shall I read it ... And it’s pinned all over our school and uh, we pick learners of the month who embody those specific values. We all embody creativity, the inspiration, innovation, and imagination. Imagination says the ability to use the creative power of mind. So I think our core values of our going are based on creativity. And it also goes back to some sort of creativity. What’s inspiration say? Inspiration says igniting ambition and creativity in ourselves and others so we’re expected others-, share not only our creativity, but the other’s in the room. And innovation? Innovation says
creation rising from thought, study, and experimentation. So they all say-

Yeah, it all does, they all do, they all speak to that. How about integrity,

that’s the only one-. Well, integrity is truth, honor, trust, and doing the

right thing when no one’s watching. But three out of the five? …Well,

inquiry is just-simply watching you create. So do you wanna call it um,

inquiry or do you wanna call it creativity is probably pretty similar.

It is evident, through this discussion that the Core Values, developed by the teachers, and
defined through years of use, play an important part of encouraging creativity in students.
Core Values support the teachers in their efforts to encourage creativity by providing
students a set of characteristics to strive for. Simon explains this in the following
reflection,

Yeah, there’s no question that there will be creativity in its event. It’s
embedded… We don’t think about it…We don’t think about it, it’s just
there. I mean, like I said, this whole conversation has been about creativity
so I know we’re gonna, we’ve been pulling creativity out of, every nook
and cranny…But you know, that’s embedded…And in that process you
have embedded um…core values and that’s what, that’s why we-, that’s
why we don’t really talk about the creativity because of the design
process. You have your innovation…your inquiry, and your
imagination…Imagination, it’s all embedded in that process so that’s
really cool the way you kind of sum that up for all of us that we basically
all do the design process…and that’s embedded in it, and so do, and you
know, fostering creativity, you know, every time we teach our standards-based curriculum.

Simon shows that the embeddedness of Core Values brings depth and adds dimension to teaching. Another example of how Core Values are embedded into the school’s culture is the monthly ceremony dedicated to the celebration of students who have embodied them. The teachers are asked to observe the students over the course of a month and choose the six students who they believe best represent the core values (one student per core value). These students are then celebrated in the morning meeting (an assembly of all individuals: learners, faculty, staff, administrators, and parents). Participants spoke of this ceremony in their of encouraging creativity in students,

…we celebrate them. Like when they’re creative, when they have that imagination or innovation, we celebrate it. Inspiration, some of the kids that are being honored is for inspiration. A lot of that comes through creativity, things that they’ll go out of our way to do to inspire other people. So it’s embedded.

The celebration of the Core Values is a school ritual designed to maintain the teacher’s attention to them in the classroom, and to encourage and inspire students to strive to embody them.

**Using 21st century skills.** Another important aspect of redefining the student’s role into a learner is the emphasis on 21st Century Skills. This set of skills is important to the function of the learner inside of the classroom and provides a framework for student’s interactions with others. For example, Sarah said,
Yeah, I think, the way you’re talking about equating higher order thinking skills, if you kind of just go through 21st century learning skills you can see they were established for critical thinking, collaboration, self-directed learning, and those big five or six that we. I think all of those point to you know giving them the opportunity to be creative. All of them.

21st Century Skills along with Core Values provide teachers with a vision of what students should be and students with a vision of what they should strive to reflect.

**Additional Creativity Encouraging Resources**

Another aspect of the school participants believed aided in the encouragement of creativity in students were the resources that added to the learning environment and student experience. These resources include: technology and the creativity rubric.

**Technology.** Participants emphasized technology as an additional creativity encouraging factor in the Science Middles School. The school is a one-to-one laptop environment, which means that each student receives their own personal laptop. In regards to encouraging creativity in students Neil said, “Well, technology is constantly changing, so with that being said, they have to change with it so it just – it opens a lot of opportunities for them to be creative.” As Kate said,

I think that with digital literacy taught here and you know the multitude of ways that kids are asked to present ideas in um different formats um that are out there. I definitely think it encourages creativity. In a way that kids like, because they’re all into the technology. They’re digital natives, you
know, they’ve been – they’ve grown up with it and they have the opportunity to really explore much deeper than what I can do.

Kate shows here the impact technology has on education and the encouragement of creativity. She suggests technology is a likely fit for the encouragement of creativity in students because of their interest in it. Participant remarks expose the relevance of the one-to-one laptop computer environment to the encouragement of creativity. Kate said,

Well, I think part of – part of it is a one-to-one laptop environment. You kind of, that pushes you as an instructor to um maximize and leverage that tool as best you can, so that requires some creativity. It also gives you opportunities for creativity that you wouldn’t have had before. All the Web 2.0 tools and things like that in order to demonstrate learning, you know, and you pass those skills on to kids and you know then they run with them. I think of Kyle’s video, you know, there’s all kinds of opportunities for creativity when you’re using um a laptop, you know. So I think that’s a big one.

Students having access to the internet led to the development of the digital literacy course, which develops disciplined use of computers. Kate spoke of encouraging creativity in students to develop moral use of on-line resources. She explained, – well – I did have some restrictions and that what actually came – that’s why we came to that conclusion. Because I said, you can’t – you can only use – I don’t want you to use um .com’s, .org’s. Which they learned early
on by making mistakes and actually finding out that they were getting this information from .org’s because some of them are not factually based especially when you’re looking up things like viruses and that kind of thing. Um, so um I think that Ryan was just looking for an easier way to do searching and only get .gov resources because he knew those were going to be acceptable for our situation. And um so he just found this and then he shared it with me and I said well this is a teachable kind of moment. So he created a screen – I said what I want you to do is create a screen cast of it so we can teach everybody and it was okay for him to teach his class but we wanted to reach more people than just them. And in fact what ended up happening is, we had people coming in to visit our school since we are a platform school and that is part of the requirement is that people – we have to be teaching the other schools within our Akron hub – um we use that as an example of how our learners design curriculum to teach other learners in our school and um they were always amazed by that and I also use it in the digital literacy professional development that um Marie and I have put together for the Hub.

**Creativity rubric.** The creativity rubric is a tool designed in a collaboration between the school’s administration and a consulting firm. This rubric was created to ensure teachers were developing their instruction with creativity in mind. Neil described how the rubric was developed. He said,
Yeah, we um have had some development work with and then we had training from the Material group um and early on the original group developed um rubrics around the 21st century skills, which were critical thinking, self-directed learning, collaboration, creativity, um, so yeah, we developed rubrics.

The creativity rubric has mostly been a point of contention. Since its introduction, teachers have been grappling with how to use it in a purposeful way. One teacher explained,

We’ve been working as a building on a creativity rubric and it’s-, that is a point of argument you know, depending on which way you’re coming at. Do you guys remember how we were eliminating things but don’t-, no, you can’t eliminate that, that has to be in there because that meets my-, no, let’s take that out, no, let’s leave that back in. So that’s like, a work in progress as a building…

Teachers want to give the creativity rubric a chance, but have not figured out how to make it useful. There have been continuing discussions in building PLC’s about its use. Debra explains this in the following statement:

Well, we, we did I mean, we, we do have a creativity rubric, but what we decided as a building is that it needed to be um, maybe restructured or scalped according to the different domains because uh, it just, it just wasn’t as useful the way, the way that it was so it’s a work in progress for us.
Neil has found a use for the rubric in his classroom discussion on creativity. He explained,

And I’ve used the creativity rubric that we have with the kids to really only as a starting point for them to just think about what creativity means to them. Because it’s going to mean something to everyone.

Summary of Underpinnings to Encouraging Creativity

Awareness of encouraging creativity in a standards-based environment was understood through a collaboration of teachers, who defined the culture of the school. Through professional development the teachers were given tools to try in the classroom, but the main influence these courses had was to get teachers to think in ways they had never considered. Moreover, many of the teachers had prior experiences which opened them up to teaching in a different way. This grew exponentially once teachers were given space to develop curriculum both for their individual domains and in collaboration with other teachers through their own problem-solving capacities. This was done through the teacher’s compromise to redesign the traditional educational values. Teachers took both covert and overt actions to develop the reference group perspective of the school. Covert actions took place as the teacher grappled with translating the reference group perspective to their individual domains. Covert actions deal with the teacher’s interpretation of standards, understand their role as a coach, and stay in line with the meanings developed by the reference group. The substantive theory represents the overt actions taken by individual teachers as well as teacher in collaboration in accordance with the reference group perspective.
Overview of Substantive Theory

In the prior section, the themes of the substantive theory of middle school teachers’ creativity encouraging pedagogy in a standards-based environment has been discussed in detail as the meanings developed through interactions. *The Theory of Middle School Teachers’ Encouragement of Creativity in a Standards-Based Educational Environment* (Figure 2) represents how teachers encourage creativity in students in a standards-based educational environment.

Through the process of diagramming an image of how creativity occurred in this setting developed from the words of the participants. Diagramming started out slowly as I compared my memos for cause and effect statements. Next I compared data to ensure I was understanding the emerging picture. After creating a model, I shared it with the participants for their consideration. I deduced from participant feedback that three general stages emerged and four processes from analysis of data. Stages and processes include Stage 1: Preparation, containing the process of planning; Stage 2: Implementation, containing the processes of exploration and discovery and the process of Sharing out; and, Stage 3: Reflection, which contains the process of deliberation. Participants were given the summary of this analysis in the form of an image, to check for accuracy, concluding that the figure was in line with their actions.

The first concept Preparation focuses on how teachers *construct* and *prepare* the classroom environment so that students can be self-directed, and teachers can be guides. The second theme, Implementation, focuses on the teacher’s application of the unit and the encouragement of creativity in students in the environment they had prepared. The
Figure 2: The Theory of Middle School Teachers' Encouragement of Creativity in a Standards-Based Educational Environment
third theme, Reflection, is the process teachers use to understand outcomes and; therefore, deliberate over their experiences. Understanding how teachers experienced encouragement of creativity in a standards-based environment requires an understanding of how they have redesigned the curriculum. As demonstrated in Figure 2, The experiences which most reflect the encouragement of creativity in students are seen in the ability of the teacher to act as a guide, situating the students, the environment which supports creativity, and letting them work on their own to devise their own solutions.

Participants revealed the first stage of the substantive theory of middle school teachers’ encouragement of creativity in students in a standards-based environment, are the actions teachers take to develop an anticipated plan. Participants have characterized this first stage of encouraging creativity as “Preparation,” which implies the development of an in-depth organized plan prior to its implementation. The purpose of the Preparation stage (Figure 3) is to organize thoughts, routines, environment, and resources into an anticipated map of activities, discussions, and lessons to prepare for student interaction.

**Stage One: Preparation**

*Process of Planning*

![Diagram](image)

*Figure 3. Stage One Preparation: Process of Planning*
Neil said, “… there’s a ton of planning and for blended as well. I mean, you have to be really precise about you know, your formatives, you have to be precise about the engagement pieces you want them to go through. Um, so yeah, once they’re loaded and ready, then it’s them again…” The difference between the creativity encouraging curriculum and the traditional lesson plan is the creativity encouraging curriculum gives students opportunity to develop their own solutions. Moreover, the creativity encouraging curriculum leaves the teacher exposed to making mistakes and not always knowing the answer. In this way, with in the creativity encouraging curriculum is a dialogical relationship between the teacher and the student. The preparation stage invokes the teacher’s ability to employ their knowledge of content, and their ability to design meaningful experiences for students. Preparing students to collaborate and take risks is the purpose of teaching routines in the preparation stage.

**Teaching routines.** Encouraging creativity in students begins with routines to prepare students to collaborate with others, use time efficiently, and take risks. The purpose of routines is to create a less threatening environment and to increase the chances for students to be comfortable. Data shows the routines, used by the teachers of this study, act as “supports” to the encouragement of creativity by taking pressure off of the individual. Also, routines provide for a more efficient culture by setting a tone and characterizing interactions within the classroom. Participants in this study use routines in different ways, but in all cases routines were a fundamental element to emphasize creativity in community over the accomplishments of individuals. When asked about the place of routines in the
creativity encouraging art classroom Marie explained that routines have several purposes. She said that routines are,

t kinda support that holds up that creativity piece. It’s uh, if I didn’t have the routines then I would have to be messing with cleaning or reteaching them how to do the paint brushes or passing out paper myself or regoing over how to use water color paint.

She also emphasized that routines aid in the efficient use of time. Referring to the sketch book routine she gives to her students as an assignment, she explained how the exercise gives her freedom in the classroom to encourage student’s creativity. She said,

The routine of the sketchbook is beautiful for me because they can refer back to the color wheel they did in the fifth grade while they’re in sixth grade. So, it’s like holding it up. It’s a framework and its support for me to be able to move around the room and do the more creative work.

Further data from participant comments express the importance of the initial activities of developing routines. Sarah explained, “I think part of that is just that – setting the tone in the classroom.” Debra explains the importance of setting the tone in the creativity encouraging mathematics classroom. She said, “I have to have created an environment where the students can work collaboratively. And so we spend a lot of time with different strategies for them to learn how to work with their partners or with their group.”

In his reflection, Neil explained how setting the tone in his classroom means creating a framework that supports the encouragement of creativity by teaching routines. He said,
In the beginning, we do a lot of routine practice. And by routine practice I’m talking about how we do Think, Pair, Share, or how we do other learning strategies in my room. Right? Um, like you’ve heard me do, uh, the one where I need to have their full and complete attention when we talk about…the SLANT strategy, so we practice stuff or how to do a Think, Pair, Share, and the confines of the routines, which we practice and practice and practice. High five your shoulder partner, um, Who’s Going First, You Have Thirty Seconds…and we’ll do that over and over and over again so that you’re creating a framework for creativity to happen there, and I think that’s another way we encourage creativity, which is allowing for discovery…That Socrates kind of thing, or you’re posing a question and allowing for theoretical discussion among children. You know, amongst each other, without throwing in your own biases and prejudices which you have accumulated over many many years. And, if I remove myself from the situation, and just pose a question, then there’s none of my biases to get in the way of what they might be thinking…So building those routines doesn’t sound like it’s creativity building, but what it actually does is create a framework for us to be creative later.

As shown in Neil’s explanation, the development of routines, in order to set the tone of the classroom, combines strategies and frameworks. Neil spoke of the Kagan frameworks, as well as, a strategy he brought to his classroom called SLANT (Sit Up, Listen, Ask and Answer Questions, Nod Your Head, Track the Speaker). Through Kagan
frameworks teachers have also incorporated 21st Century Skills framework into their classrooms in combination with the other frameworks and strategies. Rene spoke of how this combination of taught skills aid in using time efficiently in the classroom and creates a nonthreatening environment by allowing students to share ideas in groups. She said,

…you have the kids talk in small groups, they collaborate with each other, they discuss one on one with each other. They just discuss among themselves what they think about that. That takes the load off having to talk in front of everybody at first, and putting those thoughts out there because you’re talking in small groups. Then, as they feel more comfortable, you begin to ask for volunteers, who wants to share? What were your ideas about this? What are your thoughts about that? You get more kids that want to participate because they’ve had a chance to talk about it and hear what somebody else thinks and hear you know in comparison what they think.

Collaboration in small groups creates a more palpable atmosphere for students to take risks as compared to sharing ideas with the entire classroom. Small group collaborations can range from sharing ideas, to working together to find algorithms, to understanding meanings from literature, discovering natural processes and phenomena, and solving problems. But, to get students to participate in these ways, it begins with continuous practice.

Marie explained how teaching routines aid her in the experiences of encouraging creativity. She uses the Kagan system of management to teach routines and shows how it
aids students in communicating with one another. The Kagan system was introduced in professional development. She said,

I have management mats on the tables. Every student is numbered on this manage mat, and the manage mat also indicates the shoulder partner or the face partner, um, and I use this for a lot of different management reasons…I use that a lot for discussions as well as, um, talking to your shoulder partner or discussing things with your face partner. Um, and I think that helps them…kinda work through some of the things a lot of the times that they might not, they are guessing about. But, also the discussion helps the whole table come to an understanding. One person might be able to answer the question, but when they’re talking about it at the table, um, it helps with that whole understanding piece in their own language sometimes. So, again your holding them accountable by calling on the tables randomly or the person randomly, but they’ve all discussed it so now everybody has a chance to be right.

Another way routines are used in the Science Middle School are helping to encourage proper use of technology and create procedural activities for working with in an online environment. Kate explained the importance of involving students in routines in the digital literacy class and its relevance to the creativity encouraging environment. This is what she said,

So we have to be aware of the whole group of people that are involved in this whole educational experience so um when we first started out with the
digital literacy, we wanted to make sure our kids were safe online and that they knew all those rules. And I think the most powerful tool that we designed in the beginning was not what we designed as a staff but what the learners did very first part of digital literacy and the kids actually create the roles that they need to follow – that they come up with the rules that they need to follow to be safe online which is really powerful especially when they’ve decided break one of those rules, you can remind them that they were the ones that created it. And I think you know when Julie and I are were setting up our anticipated rules for this Cyber Safety um agreement that they were going to generate, we were surprised that they were so severe. Probably more so than we were. And we felt that was good and those rules that they – every year when the kids come in and they design their rules those are rules that go up on their refrigerators at home and so that also um gives the parents some kind of groundwork for um operating in the internet world at home, too. A lot of our parents weren’t really sure how to deal with some of these things um because they are not the digital natives that these kids are.

Teaching routines is the way teachers make efficient use of the creativity encouraging spaces. It provides smooth transitions by developing skills and behaviors in students to use tools correctly, to collaborate and work together, and to be self-directed.

**Deciding pedagogical strategies.** Participants shared several pedagogical strategies used by the teachers of the school in this study to encourage creativity
in students in a standards-based environment. Problem-based learning, project-based learning, and inquiry-based investigation in science and mathematics are pedagogical strategies used. Although participants spoke more often about the problem-based learning strategy project-based learning, and inquiry-based learning investigations are included as strategies commonly used throughout the school. Problem-Based Learning is used by teachers in their individual classrooms, as well as, in situations where many areas (Language Arts, Mathematics, Science, Social Studies, etc.) share a problem and work together through content integration. The school in this study seeks authentic problems, those that can be found in the school or broader community, that can be directly tied into the state standards. However, in project-based learning projects are given to students for the purpose of developing a physical model of the understandings covered in the content. Project-based learning has been used as a pedagogical strategy to test students’ understanding and application of content within the classroom; and, therefore, deals mainly with a single content area. Inquiry-based investigations are a mixture of both problem and project, depending on how the teacher uses them. Ultimately, deciding how the content will be introduced to students is a matter of teacher collaboration, the teachers’ ability to develop robust and authentic problems, and the use of materials provided by the school. An analysis of the problem-based, project-based, and inquiry-based investigation unit plans reveal the teacher’s actions in bringing these experiences to the classroom.
Organization of the open-ended standardized unit plans. Documents aiding in the teachers’ planning of the experiences to encourage creativity in students in a standards-based environment provide a source of data to understand actions taken by teachers. The following section is an analysis two documents: The Problem-Based Learning Experience Design (LED) Template, and the Unit Plan format. A detailed evaluation of both documents reveals similarities in organization of the unit plans, as well as differences.

Similarities between problem-based, project-based, and inquiry-based unit plans. Having decided on the type of experience that will be brought into the classroom to encourage student creativity the teacher must develop the unit plan for the experience. Generally, several similarities exist between the problem, project, and inquiry-based learning unit plans. Development of these unit plans consist of organizing standards, applying the content knowledge of the teachers to develop a suitable problem, project, or investigation, deciding on the learning activities that will be used in the unit, and bringing together the resources. Regarding the encouragement of creativity in students, this is where “Trusting the Process” is taken seriously.

In the three unit plans, teachers list the academic standards and benchmarks they expect to address over the course of the unit. Standards are used within the context of the problem or project the teachers are preparing for their students. A classroom experience that results in the encouragement of creativity in students is captured in a problem-based learning unit, the project-based learning unit, and the inquiry-based investigation. This process begins by developing and understanding of the standards and then using them to
organize the unit. In all cases this is a result of the teacher or group of teachers’ design of the experience.

Participants discussed the importance of knowing the standards well, as a critical step toward encouraging creativity in students. They recalled receiving professional development to learn how to unpack the standards. Further professional development was presented to participants to learn how to use Depth of Knowledge (DOK). Neil explained how he developed a deep understanding his standards. He explained the use of Depth of Knowledge (DOK) to organize his standards prior to planning. He said,

It was the DOK and we did the practice of, um, diving into the standards and then really pulling out meaningful learning targets. And, that’s what I’m doing now, before each unit. Um, it’s really looking for powerful learning targets, as opposed to simple ‘I can’ statements…Overarching ones that that might continue for days on end, but one I absolutely want mastery of…deep diving standards to create meaningful learning targets…Really formulating, synthesizing what the standard is, and then with that, creating a mastery target that is one that is one that is absolute, and it must be learned in order for me to be happy with their growth.

Another striking similarity between these pedagogical strategies, as explained by participants, are the placing of the standards. Participants expressed looking to standards as the beginning of the planning process. Neil explains the initial steps of developing a creativity encouraging experience he said,
I think back to that unit plan, the very first thing you do is look at, okay, what standards need to be taught? Now, how am I going to have the students master this in a way that they’re creative?

However, beginning with standards can be a difficult and frustrating task as explained by Lisa who said, “Cause initially, we had to start with our standards. And it, and it’s hard to just look at your standards and become creative.” When teachers begin with a problem, standards have already guided their judgement. Participants made it clear that the standards are always lurking behind the decisions made when developing a unit plan or LED. Participants expressed this in the following statement,

Sometimes, it just comes from what’s going on but a lot of the time, we do think about, well, this is what our standards are? Can we find a problem that goes with it? Or sometimes there might be a real problem going on and thinking, oh, that matches our standards, let’s do that. So it just kind of depends on what’s going on at the time.

Rita underlines the importance of standards saying, “If it’s in your standards and it’s important, you, you need to give strength to every single thing.” Loraine, reflecting on the standards said, “Um, I think for me it all starts with the standards… SO everything we do, we start with the standards. And I look at them and a lot of times, honestly I think these are pretty boring (laugh).”

Standards were anticipated but creativity was intentional. Teachers plan the activities that will take place in the classroom, and these anticipated actions become
intentional actions. Therefore, teachers take time to choose adequate learning experiences that will encourage students’ creativity. Neil said,

… it comes down to engagement. So whether you’re inside of PBL or not, or whatever you’re doing. That’s one of the ways that we’re creative as a crew, is finding ways to engage kids in work that is not normal for other schools, you know, whether it’s an application that they use, whether it’s an electronic learning environment that you use, whether it’s opportunities for recovery of information, whether it’s um you know work that we do in the lab, in the science lab. It doesn’t matter on any given day whether it’s PBL or not.

Another similarity between the problem-based learning, project-based learning, and inquiry-based investigations are the assessment strategies. The participants spoke of using many formative assessments and a summative assessment at the end of the unit. The formative assessments take place at every stage of the unit as checks to make sure students are capable of moving to the next activity. In Neil’s reflection he said, “I mean, you have to be really precise about you know, your formatives, you have to be precise about the engagement pieces you want them to go through.” The formative assessments are connected to the engagement pieces, which are the activities that engage students in solving the problem, learn information to move closer to receiving the project, or developing an algorithm or discovery in an inquiry based-investigation. Formative assessments include but are not limited to: class surveys, questioning, discussions, observations, on-the-fly assessments, and work samples.
Summative assessments assess all targeted curricular goals of the unit. This is an assessment of overall student learning according to standards and benchmarks addressed over the course of the unit.

**Differences between problem-based and project-based learning unit plans.** Differences between the problem-based, project-based, and inquiry-based investigation unit plans reside in the length and order of the units. The result of these differences is the point at which students are given the opportunity to utilize their creative gifts. The problem-based units, as represented by the Learning Experience Design (LED) template, is developed by a team of teachers through interdisciplinary work, or by a single teacher in their individual content area. Inquiry-based investigations and project-based learning units are conducted in individual content areas.

Teachers prepare problem-based units for students to encourage creativity in students from the beginning. This requires a great deal of collaboration among the participating teachers. Weather it is for single or multiple content areas the problem-based learning unit can be understood in the following reflection. Neil said,

Creating a learning experience designed with the LED tablet, so in the course of building that tablet, you have to identify the curricular mapping from, you know, each core subject, or outside the core subjects. The dream team also fits into that. But then, beyond the curricular mapping, then it’s like identifying embedded activities, um, you know, developing your anticipated need-to-know, which is really important because you – on that document, you have to have everything you need them to say during that
K and K process, so that you can get them to say it when they actually do it. (laughs) So you know, it’s the PBL, there’s a lot of front-loading in terms of the design process of building a unit.

Development of these units require that teachers meet during their grade level PLC meetings to plan the unit. During these meeting teachers come together to share and discuss their standards; to understand learners and decide outcomes; to decide on and refine the problem; bring together resources; and, decide on important learning activities.

Finding authentic problems for students to solve is the task of the teacher. Adequate problems, those that can encompass the standards, must be found through observation or talking to others. Teachers spoke of this process as resulting in different ways. Some problems are a result of personal experiences, while others are a result of epiphanies by teachers. This was expressed in a focused groups reflection in the following way,

But when we start out a lot of times, somebody will come with a, come to us with a problem. So like the city of Akron engineers had a problem with the water runoff. Well, the (inaudible), I had a personal problem with that also because my basement flooded, she had a woman that lived in Akron that her basement flooded, and so then when the engineers came to us, we grew from a problem. Um, another problem was we um, uh, Lisa was at the store, she saw somebody struggling um, reaching things in a grocery store. I actually had a friend who you know, she has a disability, she can’t reach things so we brought her into the process. So does it always start
with our standards? No. Sometimes we face a problem, a real problem and I think the kids really appreciate that because it’s a true, authentic problem and we can reach our standards. We can reach engineering standards, math, science, language arts standards when we went through the whole PBL process. So I mean, they come in different ways. Sometimes it’s a problem that comes to us, sometimes it’s looking at our standards and saying you know what, we could tap into a-, our standards using you know, doing this PBL and experiencing this process. So, both.

The problem-based learning unit anticipates a proposed classroom experience designed by individual community members prompt or multiple teachers’ knowledge of everyday challenges. When the experience is planned for multiple teachers there are standards from multiple content areas. But, when the experience is planned for single content areas a single set of content area standards are used. What centralizes the integration of standards into the curriculum of creativity is the problem itself.

An analysis of project-based units reveals differences from the problem-based unit. These differences as seen in the analyzing of documents begin with the structure of content, and purposes of the open-ended strategies. While the problem-based unit is designed to solve authentic real-world problems, the project-based unit is designed to develop student’s knowledge and ability with concepts. The acquired knowledge is then used by students to build a product showing the students abilities with the knowledge. A look at the project-based lesson plan shows instead of looking at an embedded problem the project-based unit looks at essential questions. The essential questions of the unit and
a section for what the students will show in their summative evaluation. In the essential question section, the teacher takes the time to list the unit questions students will be able to answer by the end of the unit. Moreover, teachers take the time to really think about what the students will understand as a result of the teaching of the unit. Connected directly to assessment, teachers’ plan assessments carefully.

The assessment section helps teachers develop all of the ways they can check student knowledge and growth. Teachers list all of the formative and summative assessments they will use in the anticipated experience. Finally, the teacher is charged with bringing together the resources that will aid the students with the understanding of fundamental knowledge, and helping them to find answers. The project-based learning units and the inquiry-based investigations use a different unit plan than the problem-based learning unit. This unit also begins with the standards.

**Summary: Preparation**

Preparation is the planning stage of encouraging creativity in a standards-based environment. It utilizes the standards, content knowledge, and resources to create an anticipated plan of action for the classroom. During this stage, teachers prepare routines, choose a pedagogical strategy, and design a unit plan. Routines aid in the encouragement of creativity by providing structure for interacting, and aiding students to take-risks. Open-ended strategies such as problem-based, project-based, and inquiry-based learning provide a curricular framework for the encouragement of creativity. These strategies are designed for student self-direction, collaboration, and risk-taking. The unit plan is constructed keeping one of the pedagogical strategies in mind. The organization of the
unit is dictated by the pedagogical strategy, but all of the pedagogical strategies begin by looking to the standards that will be covered and the expected outcomes. The next stage of encouraging creativity in a standards-based environment is Implementation, which puts the ideas of the Preparation stage into action.

**Stage Two: Implementation**

The Implementation stage of encouraging creativity in students in a standards-based environment, includes two processes: the process of student exploration and discovery, and the process of sharing acquired knowledge. This stage takes the planning of the Preparation stage into the real life atmosphere of the classroom. In the previous stage teachers have anticipated how to bring the problem-based, project-based, or inquiry-based unit into the classroom, have gathered the necessary materials and resources, and have prepared the environment. Implementation (Figure 4) represents the carrying out of the plan.

**Process of Exploration and Discovery**

![Diagram](image)

*Figure 4. Stage Two Implementation: Process of Exploration and Discovery*
Exploration and Discovery. Exploration and Discovery can be summed up as an iterative process of situating and letting go. Implementation, as understood in teacher reflections, is a dynamic process which begins with teacher’s ability to situate students to the problem, project, or inquiry-based unit. The teacher steps back and lets students figure things out for themselves; however, teachers also scaffold when students become vexed.

Teachers spoke of this learning process as making sure students understand the rules of the problem, project, or inquiry-based unit. The teacher and student driven processes in the Implementation stage explain the actions teachers take to aid students in constructing necessary knowledge, and seek adequate evidence to begin creating solutions. Teachers spoke of the distinct character of the classroom while working in this processes. Here is what Neil said about working in these processes:

…if someone were to come into your room …It would look like we’re not doing much…Yeah you kind of feel like, oh, I should be doing something. I should be at the front of the board. Because it’s student-driven. So we’re there, we’re on the sidelines. We coach. We’re learning that when you have somebody come in and you’re talking and talking, kids aren’t really learning that much from that. It’s what they do with what they say and what they read and what they’re able to put into action and take it to that next level on their own, investigating things and working with materials and technology. That’s when you really begin to know, do they understand
what you’re teaching or what you’re talking about, what’s being presented to them.

The process of Teacher and Student Engagement begins with *Situating* students to the problem, project, or inquiry-based task. Situating students to a Problem-based unit begins with the teacher’s delivery of the problem to students or by the students finding a problem themselves. Situating students to a project or inquiry-based learning unit is not as immediate as in a problem-based learning unit. Project-based learning units and inquiry-based learning units are responses to a lesson or series of lessons provided by the teacher in the classroom. The project is usually introduced at the end of the unit as a culminating activity. It can take weeks of situating before students are ready for the project. However, as seen in participant statements, inquiry-based units are short and can be done in a single class period.

In the problem-based learning unit the Teacher and Student Engagement process is initiated as students, with the aid of teachers, begin to understand the problem. Francine described the actions taken to begin the problem-based learning unit after the problem has been introduced. She said, “And so we…go through… meet the problem and we define it and we start thinking about what we know and what we need to know.” These activities are led by the teachers to help situate students. After students are aware of the problem in need of solving, teachers help further situate students by providing opportunities to help them understand the problem more clearly. This is done by having students research vocabulary, and other fundamental concepts of the problem. Francine
explains how this was done in a problem-based learning unit about invasive plants. She said,

… we went out to our own garden and we identified the native plants out there and we looked at our native plants and what grows here and how they grow and the characteristics they have. And then we look into research of all the different ways to get rid of the privet and control invasive species and they always wanna do that because it involves—basically set the forest on fire.

This process of situating is different when dealing with a project, as the project is the culmination of the conversation that had happened in the classroom. This is seen in Lisa’s statements about the project of saving a book after reading Fahrenheit 451, and participating in classroom lessons and conversations. In this project students were asked by the teacher to choose a book they would save from being burned and to create an argument for why. Lisa explains,

The book project that I’ve got going on…It’s like what book would you save? Why would you save it? Well…what book? If somebody’s going to grab all the books on your shelf, or in the library, put them in a fire, which one would you absolutely refuse to not be put in there?

Situating students in an inquiry-based learning unit requires the teacher to use lessons from the inquiry-based educational materials provided by the school. The information provided in the inquiry-based learning materials informs students of the facts
and concepts of the lesson. Debra explains how this takes place in an inquiry-based investigation:

…if you have an inquiry-based content like me…the students come in and then we will launch an investigation…The investigation might be today…we’re exploring invasive species in Africa…of a water plant that’s taking over a river in Africa. And the first thing we would do is in our inquiry based content we would look. We would have a book with that, but they would have to look that up because the things they see in the math book they don’t understand that that’s real. So when they see this picture…it tells them, hey you know this water plant is taking over in Africa.

Therefore, whether it’s a project, a problem, or an inquiry investigation, teachers must pay close attention to students, making sure all of them understand what has been introduced and what they are expected to do. To achieve this understanding teachers maintain a dialogical relationship, or give formative assessments if necessary. In this way teachers are capable of gauging student comfort. Teachers aid in student comfort by organizing students into cooperative groups.

**Letting Go.** Letting go happens when the teacher is confident that students understand the problem, project, or inquiry investigation enough to research or grapple with information on their own. During this time, teachers stand back and give students room to develop solutions. Students become self-directed, researching, tinkering, and organizing thoughts. At this point students are left to their own devices. Francine
provided a description of the actions taken during the letting go stage of a problem. She said,

And then we do some information gathering activities and then we might do that for two or three days. And my job is to kind of be ahead of them and know schematically, this is where they’re going to be able to get on their own with their prior knowledge and this is where their gonna start to struggle.

When letting students go the teacher actions are the same for a problem, a project, or inquiry based investigation. The difference is when in the unit students are left to their own devices. For example, letting go while in a problem-based unit happens in the beginning stages, after the problem delivered. However, letting go in a project-based unit happens after the required information has been covered through prior lessons. In each pedagogical strategy teachers use formative assessment to decide if it is okay to let students go on their own.

Once the teacher believes comfort has been reached students are given time and space to begin organizing the “mess.” The point of letting students go is for them to begin creating their own solutions to the problem. At this point, the teacher must be careful not to impede in these activities. Marie’s reflection hints at the fine line teachers must take during this point in the stage. She said,

I’m always afraid that I’m going to influence them too much. Because like I said, I know where I want it to go and you have to be careful to let them have that creative piece and not influence them too much. So, I always try
to back off a little bit and coach them to a specific place but go- if you go
back to that problem statement and then they would need to know that that
should be their guide not me. So, you don’t want to influence too much…

Students will ask teachers questions, but the teacher must concentrate on guiding
students. Neil explained,

Whatever they’re working on, they (Coaches) won’t give them the
formula, they give them the problem. The kids, they mess with tiles, they
start with little blocks, they make webs, all those things to try to come up
with themselves to come up with that formula.

This participant report explains the relationship between the teacher and the student in
proceeding to develop solutions. Creating a situation for students to develop their own
solutions requires the teacher to answer questions with questions in an effort to guide
students along the way. This was explained in Kate’s reflection. She said,

And so that with them especially, there’s a lot of coaching involved where
I’m throwing the question back at them. And kind of you know… it take a
lot of conversation to get them to come up with some ideas and to start
thinking on their own because they kind of look at you... Some of the kids
are fine and other kids just need a little bit more encouragement by having
the question thrown back at them and making them think a little bit more
about how they could do it.

Inquiry learning, to guide students toward solutions, was further explained by Kate in her
reflection. She said,
Okay, asking them questions so they can lead themselves… Those questions those metacognitive questions you know… Those coaching questions. How do you know, yeah, how do you know this? So they have to give you the answers.

As the teacher stands back and lets the student tinker, research, and play with their ideas the room may become loud with “purposeful noise.” Teachers described this as “Letting them do that messy way…” The students first efforts to design solutions is a messy ordeal. Neil characterizes how the room may look at this point in the process. He said, …it looks like whatever they’re doing, the kids are up – some people would even consider it out of control because the kids are up and doing different things. And… it should be – as the teacher standing back and allowing students a chance to work through messy problems.

Often times, guiding students may not lead them to an answer and students may become frustrated. At this point, the teacher must use other means to guide students without giving them answers. It is the role of the teacher to guide students through these experiences. Loraine reflected on how teachers meet student frustration in a problem to help them figure things out. She said,

And that’s where I start planning in experts of speakers. Or I start a little bit of a tid-bit of a resource that they could go to. Or I plan a lab that we can do at that time that’s gonna kinda hit that scaffolding and be able to push them up to the next level.
The goal for the teacher is to see the student through the frustration by helping them to situate themselves. Loraine says, “When I’m thinking labs, I’m gonna do labs that are gonna help them get closer to the problem.” But, having students interact in groups, giving students time to share and discuss their ideas with other groups, and receiving feedback from others are also means teachers use to resituate students. However, as stated by Loraine,

They’re still gonna struggle through all the messiness. And sometimes we go off the wrong way and my job is to bring them back, you know. But to let them explore that for a minute because sometimes we find something we never even thought of.

The process of student and teacher engagement is an iterative process. Therefore, in a problem-based learning unit situating and letting go takes place over and over again until students have brought order to the “mess.” Inquiry-based learning units occur over a shorter period of time, but utilize the same process. The project-based learning unit can provide enough variables for students to create a project very different from another and, thus produce the same struggle in students as an inquiry or problem.

The second process in the Implementation Stage of encouraging creativity in a standards-based environment is the Process of Sharing Out, also known by teachers as the process of sharing out. The Process of Sharing Out (Figure 5) provides students with the opportunity to share the knowledge they have constructed.
All teachers agreed that it is important for students to have the opportunity to share their solutions or newly found knowledge. Rita said, “And it is the sharing, and that’s the good thing here especially with like, PBLs and just inquiry-based learning, part of that whole you know, learning is sharing out.” Sharing out is typical to all pedagogical strategies, the difference is the amount of time allowed by teachers. For a problem-based learning unit sharing out can be a grand affair and students are given a great deal of time to prepare. But, the same cannot be said for an inquiry-based learning unit. These units take place over the course of one class period, so time is limited. Finally, the project-based unit gives students a five to ten-minute stage for students to present their solutions. In all cases students are given time to develop how to share their knowledge, they are given a choice on how to present their knowledge, and are given a stage to communicate.

The process of sharing out can be very different from one content to another, but it is important students are given this time and opportunity. Debra said, “I just think the main thing is you have to give them opportunity…just let them go, they just need time to
Some content areas share out every day, while others do it periodically. But, in sharing solutions teachers spoke of giving students time to prepare, letting them choose the format to present the information, and giving them a stage for sharing.

Giving students time to prepare how they will communicate their newly found knowledge is a primary characteristic of the process of sharing out. Time is dictated according to the pedagogical strategy. More time is given preparing to communicate knowledge gained in a problem and project-based learning unit, then in an inquiry-based learning unit. However, no matter what the pedagogical strategy it is important to give students the opportunity to communicate their findings. Regarding giving students time to communicate their ideas Simone said,

So maybe how they approached it is different than what maybe someone else did, so giving them that opportunity or that time to actually evolve what their answer is going to be and sharing that out. I think that sharing with all the other students is really important, that way students can see that um there’s more than one way to solve something.

Teachers also emphasized other take-aways from sharing out. For example, an important skill in science and math is the ability to explain to others what has been found as a result of research. Kate said,

And that’s so much a 21st century skill, that sharing out of information. Research and all those things fit into it but, but being able to disseminate your information is uh, is, is a whole another level of, of understanding.
Another facet of providing time for sharing out, is for students to share their ideas and demonstrate that they are capable of communicating content in an intelligible manner. Neil communicates this in his reflection stating,

…one of the things that I think is true…is at the end of the unit I need to be conversational with a kid about content…If they talk like they know it then I can talk to them back in such a way that I can ensure that they know it by asking the right questions about certain content…

In addition to providing time, during the process of communicating acquired information, is giving students choice of how to present the information. The teachers believe giving students choice is a cornerstone of encouraging creativity. One teacher explained, “I think that our building is all about choice and in that choice, you get a creativity.” This is exemplified in a statement by Kate. She said,

So I think just leaving it open to the kids um kind of figuring out how to explain it themselves is really powerful, too, as far as being creative in their minds, how to do it. Rather than having me.

Teachers spoke of giving students choice in sharing information. Beyond the constraints provided by the problem, project, or investigation, students were given the freedom to decide how to share knowledge. Marie explained,

PBL is perfect for an art room because it’s that open-ended thing. Show me- how can we show pattern, you know and so there’s all these different roads, and answers to get to it but there’s some basic fundamentals that they need to show. They need to understand pattern, they need to
understand their technique so all of those activities within a PBL have
happened or happen on the way but you know I’d like to give them a lot of
opportunities to answer me in different ways. Give me the answer to the
problem in a lot of different ways so PBL’s perfect for creativity I think in
that inquiry, you know.

Nina’s explanation also helps develop the idea behind choice, providing further reasoning
concerning multiple approaches to sharing knowledge. She said, “So maybe how they
approached it is different than what maybe someone else did, so giving them that
opportunity or that time to actually evolve what their answer is going to be and sharing
that out.” The teacher’s encouragement of choice gives students further opportunities to
be creative. Nora explained this in a reflection saying,

I think also encouraging um different ways to show that they learned ways
– um, so different skills or talents that they have and just kind of finding
out what those are and using them as the hook to get them to demonstrate
their learning through that uh talent they may have or they may not even
know they have that we can help them discover.

Finally, student voice is important to the process of encouraging creativity.

Giving students a stage to speak presents them with the opportunities to hear other
perspectives and share their own perspectives. Lisa described the importance of
this situation. In her reflection she states,

We’ve got a real mixed bag of people…Um, everybody’s got a different
experience to bring to something, and you know what? It might not even
be what we’re talking about, but the idea of coming from a different place in the world gives them a different perspective on things…but that voice, taking that ownership of their own voice, I really like that.

Being exposed to different perspectives aids in the development of creativity. Nina expressed this saying, “I think that sharing with all the other students is really important, that way students can see that um there’s more than one way to solve something.” Presenting and communicating information to others is a skill that develops over time. Sarah spoke of the development of student voice a result of having opportunities to present saying:

I do think it changes. Well, it’s almost like when they come in in fifth grade, they’re – it’s hard for them – they’d rather be told a formula for anything and this is exactly what I want you to do. And then, it grows and they learn through PBL and other things they learn to think outside the box and try to come up with different things. And they like to be creative and find out all the different ways they can to present their information rather than it being cut and dry.

**Summary: Implementation**

The Implementation stage of encouraging creativity in students in a standards-based environment is composed of two processes: Exploration and Discovery, and Sharing Out. The process of Exploration and Discovery is an iterative process of organizing the messiness of a problem, project, or inquiry investigation into a novel solution. The process begins with *situating* students to
the problem, delivering lessons to help students understand the basic knowledge of a project, or receiving the information of the phenomenon of an investigation. After the basic information is developed the teacher must know the students well enough, in the classroom, in order to gauge their comfort. Once students are deemed comfortable students are let go, or left to work, research, or begin finding solution on their own. If students get frustrated the teacher must resituate them by through inquiry learning or some sort of scaffolding until they are capable of working on their own again. This iterative process continues until the students have developed their novel ideas.

The second process, Sharing Out, follows the process of Exploration and Discovery. Sharing Out is the process that provides time for the students to communicate their knowledge to others. Teachers spoke of giving students time, voice, and choice. These elements of the process are important for many reasons. The amount of time given to students varies according to the pedagogical strategy by the teacher. More time is given to problem-based and project-based learning strategies than inquiry-based investigations. However, the point of the giving students time to share is to interact with each other, and to develop their ideas. Students are also given voice, or the room to develop their responses from their perspective. Finally, teachers give students choice on how communicate their ideas.
Stage Three: Reflection

The final stage in the encouragement of creativity in students in a standards-based environment is Reflection. The Process of Deliberation (Figure 6) is about the students deliberating over their accomplishments and failures.

**Stage Three: Reflection**

*Process of Deliberation*

![Diagram of the Process of Deliberation]

*Figure 6. Stage Three Reflection: Process of Deliberation*

Neil explained his actions in this final stage of encouraging student’s creative productivity. He described the process as beginning with a deep look at their cooperative behaviors. He said,

…I had them rate themselves, then I had them rate each person in their cooperative group that they worked with…” Another aspect of this stage, as revealed by Neil in his reflection, is having students think deeply about their thinking. He summed up this metacognitive idea saying, “…It makes them really dig in and decide…they have to be creative, they have to figure out a way that they can compensate for some failure that was
brought up to them…if it was communication, how can they be more effective?

**Conditions Impeding the Encouragement of Creativity**

The participants mentioned several conditions impeding the encouragement of creativity in students in a standards-based environment. Conditions such as these threaten the structures that exist for encouraging creativity in the current educational atmosphere. These include forces that are outside of the school, as well as, forces that are present inside of the school. Teachers gave mixed responses on the subject of standards and standardized testing. Participants discussed the impact of changing standards. Some participants viewed the changing standards as a hindrance in the encouragement of creativity. For example, Peyton explained,

…we had to worry about transitioning the kids from the old standards into the new standards in common core, make sure there’s no gaps. And, there was a lot of focus on that for the last two or three years, so I just – I kind of just went with like – okay here’s the Connect to Mathematics lessons, let’s – and that was, that was about it. Like I don’t feel like I went any further than that just because I wanted to make sure they were getting what they were supposed to, so that when we transition fully to the common core, they weren’t behind anywhere or didn’t miss anything.

Lisa agreed the changing of standards was a hindrance to the encouragement of creativity. She said,
Yet, when I go to language arts it’s more black and white, and I think part of that is the push from common core, doing information reading, and supporting in the text. So there’s not the creative writing that they used to do. It’s not – they don’t get to do that as much because they’re so driven by – you gotta cover this so we have to read this factual information and then they have to quote it. So I think that’s – you know, we don’t do as much literature like we used to, which was great. We don’t do the creative writing as much and part of that’s, at least in the grades that I see…

However, on the other hand, the changing of standards was taken as a challenge and seen as a refreshing start for Lorainne. She said,

Um, when all the standards changed, we had to shift our curriculum around quite a bit. And, problem was, Neil and I at that point had gotten really good at what we were teaching, because we had taught it for four years at that point…And now I was teaching new subjects. But what I found, after a year or two, was that I like the new ones as much as the old ones…So it just gave me an opportunity to spice it up and keep growing, and, and maybe that was a little twist of fate that I needed to refresh me, because at that point I was kind of overwhelmed…

Participants also gave mixed answers about the impact of testing on the encouragement of creativity in students. Some teacher participant’s reflections show the testing environment was seen as a condition that impedes creativity. This is seen in the following reflection,
Our school is under the same pressure because of the ratings. Even though we like to think that we don’t teach the tests, we’re certainly- all you have to do it sit around and hear (inaudible) the teachers talk and know that everyone’s feeling constraint.

Testing was mentioned by some participants as an obstacle to the encouragement of creativity, while others did not view it as a problem. Several researchers have emphasized the testing environment as one of the greatest hindrances to the encouragement of creativity (Beghetto, 2004; Berliner, 2012; Robinson, 2011). Sarah expressed how testing tends to give teachers a feeling of being constrained by time. In the following statement she communicates the impact of testing,

I think partly- I feel constrained more by time. Because I just don’t have them very long. So that really stifles what I can do. And I think because everyone else, we’re so worried about the testing that sometimes we don’t encourage creativity as much as we could. And that might be the very thing that helps them with the testing. Um, in some way. But, right I think I feel- I definitely feel the same pressure. I feel like- because it’s all about performing one test. But I think if we teach- if we’re teaching kids to be good thinkers, that’s gonna carry over into whatever testing they take. I don’t like that it’s one test one day cause you can have- I mean we certainly don’t wanna be- we don’t wanna judge our students on one test, one day… So I think there’s more- I think we’re feeling a little more constrained. Yeah, and maybe its more the time. We don’t get as much
freedom to just explore the time because we’re more worried about making sure we’ve covered everything before the tests.

Lisa articulated similar feelings about the testing saying,

To me, it’s time constraints. I kept track this year with snow days, I missed 22 days of teaching with test. Test um, map test, air test, park test, more map testing, um, 22-, 22 days I kept track on my calendar, with the 9 snow days that we missed, I missed almost a month of teaching based on tests so what do I give up? What do I, what do I give up in my content, in creativity, in all the things that I wanna do that I know they will enjoy and get the result, the kid that I want you know, when I’m, when I’m locked down by I don’t have enough time to cover that, you know, I don’t have enough time...

Another hindrance mentioned by participants, to encouraging creativity in students in a standards-based environment, is maintaining the culture of the school. These difficulties can be understood through this reflection by Sarah,

…I don’t know that we all know what our culture’s supposed to be anymore. I think that we have not spent as much time with that because of the standardized other things, maybe. So I think we just need a refresher. And I bet if we asked our learners, I’m not sure they could tell us what our core values are. You know, so maybe we’ve gotten so caught up in… the testing that maybe we’ve let some of those other things go by the wayside.
Connected to the idea of maintaining the culture of the school is the situating of new hires. Sarah explained,

And I think we’re- we have felt as a lot of us on this floor have felt that we’ve gotten away from some things. And we’ve had so many new hires that don’t- that we’ve never really gone over with what the- what it’s all about.

Summary

In this chapter I have reviewed the influences of the emergent theory, through a narrative of data evidence followed by the stages of actions within it. The processes of the emergent theory were influenced by the school’s model of Science, Technology, Engineering, and Mathematics (STEM), and the vision statement of the school. The teachers were hired with the knowledge that the model and the vision statement were to be considered as the teachers planned how the curriculum would proceed. Beyond the school model and the school’s vision statement, there were several other influences on the curriculum: the teacher’s prior knowledge, development of the school’s culture, defining the creativity encouraging pedagogy, and the defining of teaching and learning. These things were developed and understood through the interaction of teachers after being brought together through the hiring process. These are the influences or the fundamental processes of which the emergent theory is composed.

In this chapter I presented my analysis the data from the participant interviews to understand their meanings, language, and actions in encouraging creativity in students in a standards-based environment. As seen in this analysis, the participants were brought
together to develop an intentional pedagogy to encourage creativity in students, and through their interactions, found common ground. This common ground, or joint action, found by the participants gave the researcher a picture of the organized complex, which was expressed in the form of a substantive theory.
CHAPTER V
DISCUSSION AND IMPLICATIONS

It is the role of the educator to aid students in developing into responsible caretakers of our nation and the world. It is also the educators who are accountable for showing student progress according to the state of Ohio’s annual Report Card. It has been seen that there is a significant decline in the creative thinking of U.S. citizens of all ages, as seen in the findings of Kim (2006), on the analysis of the Torrance Test of Creative Thinking. In the rapidly changing world in which we live it is becoming more of a necessity for education to consider the encouragement of creativity in students. Educational change is the tool used by schools to develop new practices. The view pertaining to the encouragement of creativity in students as knowledge of most worth indicates a change in educational practice must take place that encourages a new way of thinking in students. Robinson (2011) wrote,

Whether in the public or independent sector, in schools or at home, being creative in providing education and promoting creativity are not dispensable luxuries. They are essential to enable us all to make lives that are worth living and to sustain a world worth living in…We need a new Renaissance…that cultivates creative relationships…Transforming education is not easy but the price of failure is more than we can afford, while the benefits of success are more than we can imagine (p. 283)
This study is a Constructivist Grounded Theory study taking place in a middle school that has accomplished educational change to develop a program to encourage creativity in students in a standards-based educational environment. I explored the creativity encouraging pedagogy of teachers in one Ohio middle school with the intent of exposing how they encourage creativity in their students in a standards-based educational environment. Fourteen middle school teachers were interviewed in focus group interviews and four of the fourteen teachers interviewed were interviewed individually. The specific question this study explored was: How do teachers encourage creativity in their students in a standards-based middle school environment? Related questions include:

1. What is the curricular process, or are the curricular processes for encouraging creativity in students in a standards-based classroom?
2. Does encouraging creativity within teams differ from encouraging creativity in individual teachers’ domains?
3. Are there situations that affect teacher’s ability to encourage creativity in their students?

This chapter is composed of a discussion of how the educational change to encourage creativity in students in a standards-based educational environment took place at Science Middle School. This includes the interactions of teachers leading to the implementation of the program. Next, I look at the processes developed, as a result of teacher interactions, by which creativity is encouraged. Then I present the findings related to domain specificity and domain generality of encouraging creativity in students. Finally, I
present what was found related to hindrances to encouraging creativity in students at The Science Middle School.

**Discussion**

Interest in understanding how teachers encourage creativity in students in a standards-based educational environment emerges from a growing awareness that schools must do more to prepare youth for the future. Drawing on Fullan (1991) description of educational change process brings attention to the importance of initiation and implementation of this sort of educational goal. Shibutani (1955) study on reference groups as perspectives adds to the understanding of the developments to initiate and implement the process of change. The *Theory of Creativity Encouraging Pedagogy in a Standards-Based Environment* presented in Figure 2 is drawn from the words of teachers who have gone through the educational change to encourage creativity in their students. The model represents the actions teachers take in the classroom to encourage creativity in their students. Although the model appears to be a static stage model it has within it dynamic and fluid processes.

**Initiating and Implementing the Encouragement of Creativity in Students**

Findings from this study and the resulting model reflect Wideen (1994) research on teacher research and development in educational change. According to Wideen’s (1994) study it is important for teachers to take an important role in the change process. Initiating the encouragement of creativity in students at Science Middle School was intentional. Data from the interviews suggest the educational change was first made an explicit goal prior to hiring the teachers. All of the teachers were hired to take part in the
development of this educational change. By taking a job at Science Middle School teachers were bound to the development of strategies to encourage creativity in students. This was part of the agreement made by the initial group of teachers, which was no different from other mandates placed on teachers in public schools by the federal government or state. Rosenholtz (1989) indicates that schools whose teachers share a consensus regarding goals the organization of work are more likely to incorporate change.

Initiating the change process to encourage creativity in students meant the development of a unique group perspective by developing further ways to cooperate with one another through the sharing of a culture. Shibutani (1955) explains the importance of the development of a shared culture to the educational change process. Through this culture, common goals and values were developed and common modes of action. Common values include use of the 21st Century Skills and the development of school Core Values. Common goals such as how to implement teaching strategies, standards, and testing helped to sustain the relationship.

Another significant factor aiding in the initiation of educational change was the development of a system of communication. This system of communication included how the teachers would organize themselves to initiate and maintain the educational change. Participants commented about engaging in frequent discussions around creativity and why it is important to encourage student creativity in education. These lines of communication were fostered through professional development experiences and discussions, common planning periods and collaboration time with fellow teachers, staff
meetings, and professional learning communities. These lines of communication were places where new strategies and ideas could be introduced or piloted.

Fullan (1991) suggests educational change is contingent on what teachers do and think. Data from interviews of participants and the collection of documents revealed teachers developed new meanings, and language. The development of new meanings for students, teachers, and the interactions taking place between students and teachers were shared by participants. Furthermore, new pedagogical assumptions such as encouraging students to take risks, and not being afraid to fail were features of educational change to encourage creativity in students. Moreover, participant comments show that the use of open-ended pedagogical strategies were associated with the encouragement of creativity in students.

**Stages and Processes of Encouraging Creativity**

I propose the Theory of Creativity Encouraging Pedagogy in a Standards-Based Learning Environment which includes three stages: *Preparation, Implementation, and Reflection*. This section presents an in-depth analysis of the conclusions from the participant interviews and how it is related to the current research of educational change and the encouragement of creativity in students in a standards-based educational environment.

Looking at the *Theory of Creativity Encouraging Pedagogy in a Standards-Based Learning Environment*, my results indicate encouraging creativity in students is a multidimensional undertaking. The result is a confluence of skills which include: open-ended teaching strategies, the intermingling of convergent and divergent thinking,
cognitive and affective teaching orientations, as well as social and aesthetic features. My study also suggest the stages of the framework are meant to be used in order. The framework was constructed for teaching and so it follows the traditional sequential methods therefore the stages and process work together in a specific order.

The theory constructed from the participant’s reflections of the reference group’s negotiated understanding or “generalized other” for encouraging creativity in students explains the reference group’s negotiations which produced the stages and processes, created through social interaction of the members of the faculty, staff, and administration, by which teachers encourage creativity in students; but this theory doesn’t overshadow the complexity of the social actors or their thoughts, meanings, and steps to teach. Although this theory seems a lot like any other stage theory of teaching, the dearth of evidence leading up to this theory is nuanced and authentic. The stages and processes represented in the model of the theory present highly ritualized activities of a teaching group. For example, planning and the development of a unit is a highly ritualized aspect of teaching that was adopted as a norm by the reference group.

In Stage One: Preparation the process of planning is composed of three parts, all of which participants do, but act on in their own way. For example, participants suggested beginning with the development of collaborative routines for a variety of reasons: getting to know their students, providing students with a format for collaboration, to study student’s interactions with others. The teachers in this study sought to make immediate and long lasting connections with their students in order to create a supportive educational environment. This sort of reflexive relationship between
the student and the teacher is initiated with the intent to last throughout their time together. The literature on creativity speaks to this. Nickerson (1999) suggest that in order for creativity to flourish the environment must be demanding, as well as, supportive. In this study the planning process begins with the teacher taking the time to learn and understand the character of each of their students and their classes as a whole. Although this was achieved in a variety of ways, the teacher’s establishment of a relationship of respect with students early on was important because it was believed, by the participants, that the idea of encouraging creative productivity rests on the student teacher relationship. Therefore, it has been found that student comfort leads to the ability of the student to collaborate with others, take risks, and express themselves creatively. Beghetto (2005) and Fasko (1999) also suggested this, writing, “For students to be willing to express their creativity, they must feel that their ideas—especially those that are unconventional—are welcome in the classroom” (p. 261). The process moves on to open-ended pedagogical strategies.

As shown in the participant interviews, open-ended pedagogical strategies were chosen according to the situation. These strategies include, but are not limited to: Problem-based learning, project-based learning, inquiry-based investigations. The results of this study show that these strategies are not meant to be the teachers only options. It so happens that at the time of this study these were the pedagogical strategies in use. Blended learning was being added to the teacher’s repertoire by the time the interviews were finishing. The need to meet the demands of the standards-based educational environment and to encourage creativity in students called for the employment of
teaching strategies that promote inquiry, constructivism, and interdisciplinary approaches (Rejskind, 2000). Participants engaged their classrooms with open ended strategies to meet the requests of the standardized educational environment and the call, by the school, to encourage creativity in students. These open-ended pedagogical strategies allow for both convergent, divergent, and evaluative thinking (Baer & Garett, 2010).

The final feature of this first process is the organization of a standards-based unit plan. Evidence shows that the reference group perspective of the participants includes the development of a standards-based unit plan. Teachers used the planning of a standards-based unit to ensure that obligations to the federal government are met and to anticipate the learning experience. The use of open-ended strategies served as a catalyst, enhancing the chance that students will be encouraged creatively. Participant interviews show the open-ended teaching strategies offer opportunities for students to develop individual solutions or explanations. In planning the encouragement of creativity in students the core of the participant’s ability to encourage creativity in students lay in their integration of personal skills and values within the context of the school’s demands (Bramwell et al., 2011). In an effort to accomplish this task of creating a standards-based unit plan participants utilized Understanding by Design (UbD) model by Wiggins and McTighe (2005), and the Depth of Knowledge (DOK) by Webb et al. (2005). These frameworks aided the teacher’s in unpacking their standards in order to gain valuable content knowledge. Participants also valued the knowledge of their content. Participants showed a belief in the need to have a deep understanding of their content. This study shows the participants were advocates for the standards and the structure of discipline. Hennessey &
Amabile (1987) viewed the cognitive components of creativity as the basis for creative performance in any given area. These cognitive pathways include such things as facts, and technical skills. Facts are reflected in this study as the state standards of each content area, while technical skills are viewed in this study as the processes and skills of the content areas, which aid in the special way phenomena is viewed through each content area lens. Renzulli and De Wet (2010) suggest promoting within disciple thinking by placing the student in the role of a professional in the field. In fact, many of the teachers at the school of study had been actively employed in the field of the content area they are currently teaching. Those who had not been employed in the field had a great interest in their content and had done a great deal of study on their own, which led to great content knowledge and flexibility within the content.

*Stage Two: Implementation*, is composed of two parts: the *process of exploration* and *discovery* and the *process of sharing out*. Results from participant reflections indicate encouraging creative productivity in students requires a different approach to teaching, one that is dialogical. Sawyer (2004) suggests that the encouragement of creativity in students requires that the teacher take the role as a facilitator and partner in collaboration. The *process of exploration and discovery* is the process by which the teacher coaches or guides students through the messiness toward organization of the project, problem, or inquiries solutions. This is a period of observation for the teacher as they coach students by first situating them. In all cases the participants expressed the necessity of beginning with students by first situating students. Over the course of this stage, the participants described the teacher as an observer and a helping hand. The *process of exploration and
discovery is the heart of the encouragement of creativity in students. As Baer and Garrett (2010) noted, “…creativity is not just about divergent thinking; it also requires evaluative and convergent thinking as well as a great deal of domain knowledge and skill” (p. 7). Contained in this process are both convergent and divergent activities. It begins with the convergent activity of situating the students, which happens in various ways, dictated mainly by the open-ended pedagogical strategy in use. Once the teacher is assured students have enough fundamental knowledge, let’s student’s go to find a solution. The teacher steps back and becomes an observer, ready to lend a helping hand to a student in need. As the student works toward a solution they may experience frustration and need a hand requiring the teacher to resituate them. Next, after students are comfortable, they are left to their own devises. Letting them go, happens when the teacher feels students have enough fundamental knowledge to work in their collaborative groups, or on their own, towards a solution to the problem, project, or inquiry investigation. During the time students are working to find their solutions the teacher stands back and observe the students at work. The purpose of teacher observation is to act as a facilitator, making sure students have enough information and material to seek a solution. If the student reaches a point where they are frustrated and need help, the teacher returns to situate students. This is an iterative process, which continues until the students have reached a solution. Karnes et al. (1961) found that teaching techniques that utilize both convergent and divergent thinking techniques are more stimulating to creative productivity. Consequently, this process expresses the most important idea in the encouragement of creative productivity in students, which is the use of both convergent and divergent teaching strategies to
encourage creative productivity in students. Teachers give students knowledge or scaffold by “situating” them and leave students with materials and information to seek their individual solutions. This is referred to in the emergent theory as “letting go”. This process continues until the student or group of students have developed a solution. It must be noted that participants in this study explained that they had to learn by doing. It was found that teachers improved as they came to understand this way of interacting with students. As they improved they learned to become empathetic observers of students in order to understand when to step in during the process to aid student’s further growth. The data also shows that this teaching environment invites the unexpected therefore teachers had to learn how to respond to failure as well as accepting they may not always have the answers.

The second process of Stage Two, the process of sharing out, was a common identification given by the participants. Every participant mentioned allowing time for students to share the knowledge they constructed. Although not discussed in the literature I believe this to be one of the more significant findings of the study. Participants explained this process as being popular with students. They study revealed giving the the student space to share the knowledge they have constructed is crucial to the relationship between the teacher and students and thus the student’s motivation to learn. It was a common belief by all of the participants that the students should always, in some way, share the new knowledge they have constructed. Participants explained in different ways how they give their students time, choice, and voice in this process. Time refers to giving students adequate time to develop their presentation. Voice refers to giving students the
stage to present their ideas. *Choice* refers to giving students say as to how they will present their ideas to others.

In the third and final stage *Reflection*, is the *process of deliberation*. The purpose of this process is for students to take an in-depth look at their behaviors, as well as the behavior of others (in group work) over the course of the unit. In the final stage of the emergent theory, the process of deliberation, teacher help students to reflect on the experience by helping them to reflect on the behaviors of other and themselves and leading them to think deeply about the changes they can make in their own behaviors. de Souza Fleith (1998) view that creativity in the classroom environment was followed by the strong relationship of the teacher and student, “The affective interaction between student and teacher should be considered” (p. 152).

**Encouraging Creativity from an Individual Domain Versus Collaborative Team**

During the time of this exploration with teacher from Science Middle School it was found the encouragement of creativity in students has at least two conditions by which it can be expressed in a standards-based environment: domain general and domain specific conditions. The strategies used under these conditions, to encourage creativity in students in a standards-based environment, are problem-based learning, project-based learning, and inquiry-based investigation. It was found that all strategies were used to encourage creativity within a domain. According to the participant interviews, the strategy for the encouragement of creativity in a domain general situation was problem-based learning.
Domain specificity is understood through and analysis of the unit plans for problem-based, project-based and inquiry-based investigations. When developed for a single content area these unit plans are governed by the structure of the discipline (Renzulli and De Wet, 2010), which supports the participants need to develop deep content knowledge in relation to the encouragement of creativity in students. Therefore, when teaching is conducted in this manner it seeks, as Renzulli and De Wet (2010) wrote,

The predominant value of a discipline lies not so much in its accumulated facts and principles as in its systematic way of thinking about a body of knowledge—its forms and connections, its unsolved problems, its methods of inquiry, its aspirations for improving mankind, and the special way it looks at phenomena (p. 30).

There was a difference in the use of the strategies by the participants, which called for the adoption of separate curricular materials.

Project-based learning and inquiry-based investigations were used most often in the individual content area. Project-based learning provides teachers the opportunity to plan units that deliver engaging complex questions to test student’s mastery over the skills taught in the unit. Students prepare a similar product to show their mastery of knowledge. This is different for inquiry-based investigations, which are pre-packaged kits (SEPUP and Connected Mathematics) at Science Middle School. The inquiry-based investigation delivers a real life problem happening somewhere in the world, gives its history, and guides students to discovering patterns by providing questions and labs, and builds knowledge with a focus on the skills of an individual content area. In Connected
Mathematics students are asked to pinpoint mathematic patterns within the investigation and use them to solve the problem. SEPUP provides the same type of investigations as Connected Mathematics for the content area of science. In both inquiry-based learning packages students discover algorithms, many of them for the first time. These curricular packages encourage “small c” creativity by providing investigations so students can discover theories that exist.

Problem-based learning units were conducted in individual classrooms, as well as collaboration of various content area teachers. Working on a problem-based learning unit as a collaboration of content areas, provides teachers with a domain general context for encouraging creativity in a standards-based educational environment. The purpose of this strategy is to facilitate the transfer of knowledge. As Halpern (1998) suggests, “The goal of instruction designed to help students become better thinkers is transferability to real-world, out-of-the-classroom situations” (p. 451). As seen in the reflections of the participants the problem-based learning strategy has a focus on authentic or real-world problems. Although this is not necessary in the problem-based learning literature, the school adapted the materials to fit its situation. The development of an authentic problem creates a real-world context for the transfer of knowledge where students can take the skills of the different content areas and bring them together to solve the problem.

Problem-based learning units in an individual domain are much like the same units in collaboration with other domains with the exception of serving the curricular needs of a single domain.
Impeding the Encouragement of Creativity in Students

This study reveals impeding factors to the encouragement of creativity in students, in particular pressures of the standard-based and high-stakes testing environment. Data from participant interviews revealed the pressures felt by teachers to meet the federal, state, and local accountability pressures. Another issue influencing the encouragement of creativity in students in a standards-based environment was the social and professional development of teachers. The professional development of the teacher regarding creativity has an impact on its development in the classroom. Finally, it has been found that the environmental factors and influences such as time and resources can be limiting factors in the pursuit of encouraging creativity in students.

Implications

The Theory of Creativity Encouraging Pedagogy in a Standards-Based Environment, represents the actions taken by teachers to encourage creativity in their students. It represents the researchers attempt to capture the multifaceted process of encouraging creativity in a standards-based middle school educational environment.

I suggest this theory provides a good foundation for the development of other models to encourage creativity in students as it offers a conceptual framework and methodology for research. This study is significant for teachers seeking to know more about the integration of creativity into the classroom. For those engaging in school change this research shows it is possible to encourage creativity in students and, at the same time, develop the necessary skills for students to pass standards-based tests. This study provides a model for balancing convergent and divergent thinking skills in the
school curriculum. Principals may find this study of value when working with teachers to incorporate new practices.

**Suggestions for Future Research**

This study was conducted on a public school brought into existence with the intention to encourage creativity in students. As a result, this study was limited because the school had no history or traditions. Therefore, this study has limited value to a school looking to transition from an already established culture to one that encourages creativity. This study holds meaning for the fields of curriculum and instruction and creativity studies. For the field of curriculum and instruction, this study demonstrates how teachers in a middle school developed a curricular processes showing that encouragement of creativity can go hand in hand with the standards-based educational environment. This study can be used to help situate schools under the constraints of the standards-based environment, who are seeking to encourage creativity in their students. Others that may benefit from this study include universities, especially teacher educators. Future researchers may want to study schools, which are already in existence and looking to change their site into one that encourages creativity in students. In the case of a school changing its curriculum to encourage creativity in students, researchers may want to study the buy in of teachers.

Other researchers may want to do a similar study by going into the classroom and observing the teachers in action. The interactions between the students and the teachers may offer a different perspective on these matters.
Summary

This study was a grounded theory exploration into teachers’ creativity encouraging pedagogy in a standards-based educational environment. Fourteen participants were interviewed in an attempt to understand their thoughts, meanings, and actions in creating a creativity encouraging curricular approach. A framework was developed from the participants’ explanations. This framework represents a joint action by teachers to change the curriculum to one that encourages creativity in students: beginning with preparation, which is represented by the process of planning; implementation, represented by the processes of exploration and discovery and sharing out; and reflection, represented by the process of deliberation.
APPENDICES
APPENDIX A

FOCUS GROUP RESEARCH QUESTIONS
Appendix A

A GROUNDED THEORY EXPLORATION OF MIDDLE SCHOOL TEACHERS’ CREATIVITY ENCOURAGING PEDAGOGY IN A STANDARDS-BASED ENVIRONMENT

Dr. Janice Kroeger, Primary Investigator
Perkins B. Pringle, Co-Investigator (dissertator)

FOCUS GROUP RESEARCH QUESTIONS

1) How does your school define creativity?
   i. Tell me the story of how the philosophy was created
   ii. Where did the definition come from?
2) How were you prepared to encourage creativity in students?
3) Are there any processes designated for the encouragement of creativity? If so, please explain these process or processes.
4) What makes encouraging creativity possible?
5) How do you plan for encouraging creativity?
6) What are the intended outcomes for encouraging creativity?
7) Explain any barriers or obstacles to encouraging creativity?
8) What does the encouragement of creativity mean to your daily practices?
9) How do you assess the encouragement of creativity?
APPENDIX B

INDIVIDUAL RESEARCH QUESTIONS
Appendix B

A GROUNDED THEORY EXPLORATION OF MIDDLE SCHOOL TEACHERS’ CREATIVITY ENCOURAGING PEDAGOGY IN A STANDARDS-BASED EDUCATIONAL ENVIRONMENT

Dr. Janice Kroeger, Primary Investigator
Perkins B. Pringle, Co-Investigator (dissertator)

INDIVIDUAL RESEARCH QUESTIONS

1. What makes the content area(s) you teach “special” when it comes to creativity?

2. What is your definition of creativity?

3. How was this definition developed?

4. What does it mean to encourage creativity in your students?

5. How do you go about encouraging creativity in your students?

6. Please describe an experience when you encouraged creativity in your students.

7. How did you develop this experience? Where did you start?

8. What, if anything did you know about encouraging creativity prior to developing lessons in the classroom?

9. As you look back at your experiences of encouraging creativity in your students are there any events that affected your delivery that stand out in your mind? Can you describe them?

10. Is there anything else you think of that I should know about how you teach for creativity and balance teacher accountability?
APPENDIX C

INFORMED CONSENT
Appendix C (a)

INFORMED CONSENT (Individual Participant Interviews)

**Study Title:** A Grounded Theory Exploration of Middle School Teachers’ Creativity Encouraging Pedagogy In A Standards-Based Educational Environment

**Principal Investigator:** Dr. Janice Kroeger, Co-PI Perkins B. Pringle

You are being invited to participate in a research study. The purpose of this study is to develop a theory explaining the processes by which middle school teachers encourage creativity in their students, in order to make known practices for encouraging creativity in a standards-based educational environment. Participants should be teachers who exemplify creativity-encouraging teaching practices i.e., who have been successful in encouraging creativity as highlighted in the 21st century skills or according to the school’s vision statement.

This consent form will provide you with information on the research project, what you will need to do, and the associated risks and benefits of the research. Your participation is voluntary. Please read this form carefully. It is important that you ask questions and that you understand the research in order to make an informed decision. You will receive a copy of this document to take with you.

**Purpose:** The purpose of this study is to explore how teachers make meaning, think, and act in order to encourage creativity in a standards-based environment.

**Procedures:** Interviews will be conducted to answer the questions of the research study. Focus group interviews will take place followed by interviews of selected participants. All interviews will be at an agreed time and place between the researcher and participants. All teachers are invited to participate in the focus group interviews; however, only selected teachers will be asked to participate in individual interviews. The total estimated time of involvement in this study for participants is three hours.

The researcher may return to the participants of the focus group interviews and the individual interviews for further questioning of participants after the initial interview. Interviews will be digitally recorded. The researcher will collect lesson plans of individual participants constructed and used in classroom lessons to encourage creativity in students; and, Problem-Based Learning units constructed by the Professional Learning Communities to encourage creativity in students. The collected documents will be used to gain further insight into the practices teachers used to encourage creativity in students. No personal information will be revealed.

**Benefits:** This study will not benefit you directly. However, your participation in this study will help the researcher construct a theory to aid teachers in understanding how creativity can be encouraged in a standards-based environment.

**Risks and Discomforts**
There are no anticipated risks beyond those encountered in everyday life.

**Privacy and Confidentiality**
Your confidentiality will be protected as a participant in this study. The real names of the participants will not be used. Instead, each participant will be given a pseudonym or asked what pseudonym they would like in the written report or publications. All study related data will be kept confidential within the limits of the law. Data will not be connected to information that can identify participants. Any identifying information will be kept in a secure location where only the researchers will have access to the data. All data will be locked in a cabinet. Participants will not be identified in any publication or presentation of research results; only aggregated data will be used.

Information about participants will be restricted to the primary and co-investigators. Data will not be shared with school administrators. Participants will not be discussed outside of the research context. Your research information may, in certain circumstances, be disclosed to the Institutional Review Board (IRB), which oversees research at Kent State University, or to certain federal agencies. Confidentiality may not be maintained if you indicate that you may do harm to yourself or others. Patient interviews will be conducted in private rooms or areas.

**Voluntary Participation**
Taking part in this research study is entirely up to you. You may choose not to participate; however, if you choose to participate you may discontinue your participation at any time without penalty or loss of benefits. Your choice to participate or not participate will not affect your employment, nor impact your faculty standing or relationship to the school. You will be informed of any new, relevant information that may affect your health, welfare, or willingness to continue your study participation.

**Contact Information**
If you have any questions or concerns about this research, you may contact Perkins B. Pringle at 330.221.6205. The Institutional Review Board of Kent State University has approved this project. If you have any questions about your rights as a research participant or complaints about the research, you may call the IRB at 330.672.2704.

**Consent Statement and Signature**
I have read this consent form and have had the opportunity to have my questions answered to my satisfaction. I voluntarily agree to participate in this study. I understand that a copy of this consent will be provided to me for future reference.

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Participant Signature

Date
Appendix C (b)

INFORMED CONSENT (Focus Group Interviews)

**Study Title:** A Grounded Theory Exploration of Middle School Teachers’ Creativity Encouraging Pedagogy in A Standards-Based Educational Environment

**Principal Investigator:** Dr. Janice Kroeger, Co-PI Perkins B. Pringle

You are being invited to participate in research study as a participant in a focus group interview. The purpose of this study is to develop a theory explaining the processes by which middle school teachers encourage creativity in their students, in order to make known practices for encouraging creativity in a standards-based educational environment. Participants should be teachers who exemplify creativity-encouraging teaching practices i.e., who have been successful in encouraging creativity as highlighted in the 21st century skills or according to the school’s vision statement.

This consent form will provide participants of the focused group interviews with information on the research project, what they will need to do, and the associated risks and benefits of the research. Your participation is voluntary. Please read this form carefully. It is important that you ask questions and that you understand the research in order to make an informed decision. You will receive a copy of this document to take with you.

**Purpose:** The purpose of this study is to explore how teachers make meaning, think, and act in order to encourage creativity in a standards-based environment.

**Procedures:** Interviews will be conducted to answer the questions of the research study. Focus group interviews will take place followed by interviews of selected participants. All focus group interviews will be at an agreed time and place between the researcher and participants. All teachers are invited to participate in the focus group interviews; however, only selected teachers will be asked to participate in individual interviews. The total estimated time of involvement in this study for participants is three hours.

The researcher may return to the participants of the focus group interviews and the individual interviews for further questioning of participants after the initial interview. Focus group interviews will be digitally recorded. The researcher will collect a problem-based learning unit developed by the focus group participants used in classroom environment to encourage creativity in students. The collected documents will help the researcher to gain further insight into the practices teachers used to encourage creativity in students.

**Benefits:** This study will not benefit you directly. However, your participation in this study will help the researcher construct a theory to aid teachers in understanding how creativity can be encouraged in a standards-based environment.

**Risks and Discomforts**
There are no expected risks, harms, and/or discomforts that may apply to this research beyond those encountered in everyday life.

**Privacy and Confidentiality**

Information gathered during the focus group interview will remain confidential within the limits of the law by the researchers, however because of the focus group arrangement there is no guarantee of confidentiality by participants. With that in mind, participants are asked to keep information shared in discussions confidential. Data will not be connected to information that can identify participants. Any identifying information will be kept in a secure location where only the researchers will have access to the data. All data will be locked in a cabinet. Participants will not be identified in any publication or presentation of research results; only aggregated data will be used.

Information about participants will be restricted to the primary and co-investigators. Data will not be shared with school administrators. Participants will not be discussed outside of the research context. Focus group research information may, in certain circumstances, be disclosed to the Institutional Review Board (IRB), which oversees research at Kent State University, or to certain federal agencies. Confidentiality may not be maintained if any of the participants indicate that they may do harm to themselves or others. Focus group interviews will be conducted in private rooms or areas.

**Voluntary Participation**

Taking part in the focus group interviews is entirely up to you. You may choose not to participate; however, if you choose to participate you may discontinue your participation at any time without penalty or loss of benefits. Your choice to participate or not participate will not affect your employment, nor impact your faculty standing or relationship to the school. You will be informed of any new, relevant information that may affect your health, welfare, or willingness to continue your study participation.

**Contact Information**

If you have any questions or concerns about this research, you may contact Perkins B. Pringle at 330.221.6205. The Institutional Review Board of Kent State University has approved this project. If you have any questions about your rights as a research participant or complaints about the research, you may call the IRB at 330.672.2704.

**Consent Statement and Signature**

I have read this consent form and have had the opportunity to have my questions answered to my satisfaction. I voluntarily agree to participate in this study. I understand that a copy of this consent will be provided to me for future reference.

__________________________  _________________________
Participant Signature             Date
APPENDIX D

AUDIOTAPE CONSENT FORM
Appendix D

AUDIOTAPE CONSENT FORM

A GROUNDED THEORY EXPLORATION OF MIDDLE SCHOOL TEACHERS' CREATIVITY ENCOURAGING PEDAGOGY IN A STANDARDS-BASED ENVIRONMENT

Dr. Janice Kroeger, Primary Investigator
Perkins B. Pringle, Co-Investigator

I agree to participate in an audio taped interview about teachers reconstructing their professional identities during educational change as part of this project and for the purposes of data analysis. I agree that Perkins B. Pringle may audiotape this interview. The date, time and place of the interview will be mutually agreed upon.

__________________________________________  ______________________________________
Signature                                                                 Date

I have been told that I have the right to listen to the recording of the interview before it is used. I have decided that I:

_____ want to listen to the recording   _____do not want to listen to the recording

Sign now below if you do not want to listen to the recording. If you want to listen to the recording, you will be asked to sign after listening to them.

Perkins B. Pringle may/may not (circle one) use the audiotapes made of me. The original tapes or copies may be used for:

_____this research project  _____publication  _____presentation at professional meetings

__________________________________________  ______________________________________
Signature                                                                 Date

226
REFERENCES


Goodwin, B., & Miller, K. (2013). Creativity requires a mix if skills. Educational Leadership


National Advisory Committee on Creative and Cultural Education (NACCCE) (1999) *All Our Futures: Creativity, Culture and Education*, London: DfEE


