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Teachers' Perceptions on the Role of Creativity in Middle and Secondary Education

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Abstract

While the goal of American education has been to produce workers who are ready to take their place in society, emphasis on standardization has not lead to the skills needed to effectively be a part of the technologically-based, globalized world in which society now functions. In this study, the researcher investigated how middle and secondary teacher perceive a creative environment or how the use of creative teaching strategies was perceived to increase academic performance of middle and secondary students. From the lens of Constructivism, a qualitative case study of middle and secondary teachers allowed for the discussion of creativity and perceived academic impact. Drawing from qualitative data collected using a questionnaire, classroom observations, and one-on-one interviews, this study found a perception among middle and secondary teachers of creativity increasing student academic achievement. The data revealed that a creative environment was central to student success. The study concluded a creative environment is established through the building of trust, which is done by the setting clear classroom expectations, allowing for questions and risk-taking, as well as making it safe for students to make mistakes or fail. Additionally, the study concluded that creativity aligns with the recognition of individual student needs, abilities, and learning preferences and offers clear learning goals which in turn affected student academic performance.

Keywords: creativity, creative environment, creative teaching strategies, middle-level student, secondary student, increased achievement

Dedication

To my husband, John, and my boys, Drew and Jack. And to my NCPA Students.

Thank you for believing in me and supporting me.

I love you all.

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This dissertation would not have been possible without the incredible people who supported me throughout this process: God, who led me through this journey and who has blessed me every day with wonderful friends and family; my incredible and supportive husband, John, who is my best friend and biggest supporter; my children, Drew and Jack, who gave up having a full time mom while I pursued this dream; my dad, Randy, my mom, Cheryl, and my Grandma, Marilyn, and my grandpa, Vernon, all of whom supported me, listened to me, and shaped me into the women I am today; my in-laws, Mark and Beth, for their support and constant encouragement; and to my NCPA Family, who gave me the courage to keep going and the ability to stand back up every time I fell; my committee, who pushed me to be a better writer, researcher, and scholar. I would not be here today without all of you. I am incredibly blessed to have each of you in my life. I love you all more than you will ever know.

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Chapter 1: Introduction

Historically, the goal of American education was to produce workers who were ready to take their place in Industrial Society (Senge, Cambron-McCabe, Lucas, Smith, & Dutton, 2012). During the Industrial Age, the primary pedagogy centered on memorization of facts, repetitive drills, common assessments, and moving everyone through at the same pace (Senge et al., 2012). However, these skills are no longer as relevant as they once were. The emphasis on standardization, both in classroom experiences and assessment, no longer lead to the skills needed to effectively be a part of the technologically-based, globalized world in which society now functions. Students are no longer asked to merely evaluate data or take part in routine work but instead are asked to use creative, innovative thinking in non-routine work (Robinson, 2011).

The purpose of this qualitative case study is to explore teacher perceptions about creative learning environment and the perceived effects of creativity on student academic achievement in middle and secondary education. Current research has focused on creativity in the classroom at various other levels. However, middle and secondary education research is limited. Understanding the teacher perception at the middle and secondary level is instrumental in finding how creativity is used as students prepare for post-secondary education and career. Chapter 1 includes a brief background of the problem and history. An overview of the research questions, methods, design, and definition of terms are discussed. Finally, the limitations and delimitations will be noted.

Background

While there is much disagreement among teachers, administrators, policy-makers, and researchers regarding effective approaches to education, the central purpose of preparing students for life beyond K–12 education is imperative. During the early start of public education

businesses needed to ensure people had basic skills that would enable workers to efficiently manage their roles in society, on the assembly line. Schools emulated the assembly method to prepare students for the workforce, using standard learning goals and assessments. Assembly-line schooling increased the productivity of schools. However, it also did not account for individual student differences and needs. The uniformity of product and process of norms drove teacher-centered instruction. Students that were unable to learn at the speed that was set by the stakeholders were labeled and either struggled their way through or were entirely pushed out of school (Senge et al., 2012). This format created uniformity in the classroom and took away the individual ways that children learn, forcing everyone to learn in the same manner.

As the societal needs of the United States shifted, educational pedagogy also shifted. The late sixties and early seventies saw a change that emphasized creativity and recognition of individual student learning needs (Guilford, 1967). The idea of imparting knowledge was less desirable than nurturing a child's ability to think, be creative, and problem-solve in a wide-range of situations (Aish, 2014; Bruner, 1996; Fisher, 2013; Rinkevich, 2014). During this shift, several researchers began to define creativity and evaluate its place in the classroom. Torrance (1963) found that teachers claimed to encourage and value characteristics such as creative thinking, determination, curiosity, and a sense of humor. However, while teachers claimed to value those characteristics, they did nothing to nurture them. Students who exhibited these characteristics were often punished. Torrance (1963) determined that students often lose their sense of creativity about the time they enter fourth grade.

While creativity may not be as prevalent in older students, Torrance (1965) noted that teachers could develop creativity if they encouraged creative thinking and valued student's cultures and behaviors concerning the learning process. Torrance (1976), Gardner (2007), and

Csikszentmihalyi (1996) found that it was important for students to experience autonomy in the classroom and that they are given time to explore their interests. Characteristics of creative people manifest in various kinds of behaviors, such as risk-taking, curiosity, openness, and independence (Csikszentmihalyi, 1996, 2014; Gardner, 2011). Creativity is not a result of working alone, but a social interaction of learning that recognizes student individuality within a culture or a group. Creative people solve problems, fashion products, define new questions in a field that is initially novel but is accepted by the community. Novelty does not mean that the child came up with something new that has never existed before, but that it is new or novel to that individual creator (Beghetto & Kaufman, 2013; Starko, 2013). Additionally, creativity cannot exist in a vacuum (Csikszentmihalyi, 1996, 2014; Starko, 2013). It is critical to note that all great and innovative ideas have come from the cooperation of many and not only from the mind of a single person (Csikszentmihalyi, 1996; Robinson, 2011). Human organizations are built on a foundation of relationships and energies that are derived from both the individual and the collaboration of individuals working together (Robinson, 2011).

Statement of Problem

Teacher perceptions of creativity are essential to deciding how teachers respond to creativity in the classroom and whether creativity is being fostered. The problem is current standards-based educational practices are not enabling students to develop the creative thinking needed to be successful in today's globalized society. Current research has focused on creativity in the classroom, at the early childhood, elementary, and postsecondary level (Aish, 2014; Daly, Mosyjowski, & Seifert, 2014; Mahdi, Sukarman, & Yok., 2015; Rinkevich, 2014; Susnea & Tataru, 2014). However, understanding the teacher perception is instrumental in understanding how creativity is established in the classroom environment, as well as whether creative practices

are being enhanced within the classroom generating the skills necessary for college and career success. Therefore, understanding the teacher perception of creativity is fundamental to understanding the use of creativity in the classroom overall.

Purpose of Study

The purpose of this qualitative case study is to explore teacher perceptions concerning a creative learning environment, the use of creative teaching practices, and the perceived effects of creativity on student academic achievement. This study is relevant to the field of education because classroom practices affect student experiences and learning. It is essential that the qualities required for lifetime success are a part of the K–12 education system and produce citizens that are career and college ready. Society asks for people that are creative, able to adapt to different environments, and can see things from different angles (Rinkevich, 2014; Robinson, 2011; Starko, 2013). Creativity, and how it is fostered, is central to developing these skills. This study may assist in developing a clearer picture of how creativity is understood by the teacher in the classroom and how it is fostered, if at all.

Research Questions

The research questions explored in this study include the following:

R_1: How do teachers perceive a creative learning environment in the middle and secondary classroom?

R_2: How do middle and secondary school teachers perceive the use of creative learning strategies affecting student achievement?

Rationale, Relevance, and Significance

The rationale for this study is in recognizing that Industrial-age education is no longer working to fit the skill set needed by students upon completion of the K–12 experience

(Robinson, 2011; Starko, 2013). The world today is a technology-rich, globalized society that requires creative and innovative people (Robinson, 2011; Smith & Sandvick, 2012). Teachers need to be recognized as being the most direct line to the student experience and learning. Therefore, the perceptions of teachers are what most directly impacts the skills that are being developed in the classroom (Aish, 2014; Fisher, 2013; Rinkevich, 2014; Starko, 2013). It is imperative to evaluate further those perceptions and how they relate to the skills that are asked for upon graduation, such as creativity and innovation.

The relevance of this study comes at a time when many are questioning the successfulness of education in the United States. The question of what skills are necessary for people to know upon completion of formal K–12 education has been at the forefront of much educational reform, from No Child Left Behind (NCLB) to the Common Core State Standards (CCSS). However, as the educational world moved toward standardization, the workforce and post-secondary institutions continue to demand more creative and innovative individuals (Robinson, 2011; Senge et al., 2012; Starko, 2013). Teachers are at the head of the educational experience, and therefore a greater understanding of their perceptions are needed to help bridge the gap between education and societal expectations.

This research is significant because education is at a turning point in redefining its purpose. To understand what produces creative and innovative individuals it is crucial to understand how teachers view this process (Aljughaiman, 2002; Kampylis, 2010; Olivant, 2009). The teacher's perception of learning needs to be heard and understood, to build a connection between what schools are doing and what society desires from its schools. While the purpose of education has been developed by several individuals, the way that purpose is established in the classroom is found within the perceptions of the teachers themselves. Through this research, the

researcher seeks to provide school leaders and policymakers with the strong foundation to implement more creative approaches to learning by understanding fully the perceptions of those working in the classroom every day.

Nature of Study

In this study, the researcher used a qualitative single-case study to determine teacher perceptions of creativity. The researcher explored individual teacher perceptions using a questionnaire, classroom observations, and follow-up interviews. While the questionnaire offered a brief overview of a teacher's philosophy and understanding of creativity, the use of classroom observation and interview helped fill in a complete picture of each teacher's perception (Yin, 2013). All these sources highlighted the teacher's perceptions of establishing a creative environment, as well as the perceived effects creativity has on student academic achievement. The insights gathered by using three sources served to corroborate the perceptions of the teacher and may offer common themes that were demonstrated in the literature (Yin, 2013).

Definition of Terms

Big C. Big-C is what most commonly associated with the term "creative genius." These individuals go down in history as being clear-cut, eminent creators that had a lasting impact on not just their domain, but the world (Kaufman & Beghetto, 2009, 2013).

Convergent thinking. Convergent thinking is demonstrated when a child offers the single best answer and uses familiar, established techniques to find that answer (Aish, 2014; Cho, Chung, Choi, Seo, & Baek, 2013; Fisher, 2013; Rinkevich, 2014).

Creativity. Creativity is defined as original and divergent thinking that enable students to generate novel ideas and build upon prior knowledge (Aish, 2014; Csikszentmihalyi, 1996; Guilford, 1956; Rinkevich, 2014; Robinson, 2011; Starko, 2013; Sternberg & Lubart, 1995).

Creative learning environment. A creative learning environment is one that is supportive of exploration, values originality, and is permissive of individual expression of ideas (Aish, 2014; Bronson & Merryman, 2010; Rinkevich, 2014).

Creative person. A creative person is one that exhibits these common personality traits: intrinsic motivation, broad interests, openness to experiences, and autonomy in the classroom (Beghetto & Kaufman, 2013; Fisher, 2013; Mahdi et al., 2015; Starko, 2013).

Creative product. Creative products are actual items created, produced, or published, and have been accepted within the social and historical culture of society at that time as being creative (Beghetto & Kaufman 2007, 2013).

Creative teaching practices. A way of teaching that emphasizes openness and flexibility, with the teacher acting as a facilitator and guiding the student through the learning process (Ornstein, Levine, & Gutek, 2011; Rinkevich, 2014; Starko, 2013).

Divergent thinking. Divergent thinking is an original idea that is found through several varied approaches that require an examination of perspectives, multiple answers, and novel solutions (Gardner, 2011; Guilford, 1967; Rinkevich, 2014; Starko, 2013; Torrance, 1972).

Flow. Flow occurs when a person can focus on a task with clear goals, wherein time becomes distorted, and the activity becomes autotelic (Csikszentmihalyi, 2014). A person in flow has immediate feedback and is offered a balance between his or her skill set and a challenge.

Little c. Little-c de-emphasizes the analytical side of creativity, taking away the IQ or other such numerical measures, and focuses on every day unconventionality, inquisitiveness, and imagination (Beghetto & Kaufman, 2007, 2013; Cho et al., 2013; Kaufman & Beghetto, 2009, 2013; Rinkevich, 2014).

Mini-c. Mini-c is a transformative learning process and is novel and meaningful to the individual through his or her experiences or actions. Mini-c highlights the personal and developmental aspects of creativity (Aish, 2014; Beghetto & Kaufman, 2013; Cho et al., 2013; Kaufman & Beghetto, 2009, 2013; Reed-Klein, 2014; Rinkevich, 2014; Vygotsky, 2004).

Pro c. Pro-c is an innovative product or idea within a particular domain and during a fixed period. However, this innovative product or idea may not go on to maintain the same level of recognition for several generations (Csikszentmihalyi, 2014).

Traditional teaching. A systematic way of teaching wherein the teacher dispenses the learning to the students via lecture and teacher directed steps (Senge et al., 2012).

Assumptions, Delimitations, and Limitations

In this study, the researcher assumed that the teachers would offer truthful responses to the questionnaire questions. The researcher assumed that the individual teachers asked to take part in the interview and classroom observations would be self-identified creative teachers. The researcher assumed that all participants would be honest and transparent in their responses. Additionally, the researcher assumed the administrators would forward the questionnaire link to all teachers within his or her building.

The delimitations of the research were established to provide boundaries for this study. One of the delimitations of this study was to focus on one middle and one high school within two school districts. Additionally, the delimitation of observation time, as well as interview time

created a picture of creativity in the classroom and was not exhaustive. Finally, the delimitation of creativity from the perspective of a creative person, creative environment, creative process, and creative product creates a framework that is focused and specific.

A limitation of this study was the number of participants. The study had 17 responses and invited 15 teachers to participate. Out of these potential participants, seven teachers agreed to participate in the study. The limitation of seven participants created a snapshot of their perspective in the current school environment concerning creativity and the support of the district in utilizing creative strategies and is not exhaustive. Additionally, the researcher utilized two school districts in the Midwest, rather than several. Therefore, the study was limited to those specific districts. The districts had a primary demographic of Caucasian teachers, and therefore the point of view was limited to that perspective.

Summary

For several years, the primary pedagogy has centered on memorization of facts, repetitive drills, common assessments, and moving everyone through at a similar pace (Senge et al., 2012). However, these skills are no longer relevant, and the emphasis on standardization no longer leads to the skills needed to be a part of modern society. There needs to be a sense of engagement and creativity in the classroom to engage students in critical and innovative thinking (Robinson, 2011). The study explored teacher perceptions about a creative learning environment and the effects of creativity on student academic achievement in middle and secondary education. In taking a more in-depth look into the perceptions of teachers at the middle and secondary level concerning their experiences with creativity, educational leaders may gain a better understanding of whether student learning is enhanced when creativity is a focus. As educational leaders

become more in tune with the effects of creativity on student learning, educational pedagogy could be modified to fit modern society.

Chapter 2: Literature Review

Introduction and Background to the Problem

The purpose of this qualitative case study was to explore teacher perceptions concerning a creative learning environment, and the perceived effects of creativity on student academic achievement. This study is relevant to the field of education because teacher perceptions of creativity are essential to determining how teachers respond to creativity in the classroom and whether teachers are fostering creativity. Current research has focused on creativity at the early childhood, elementary, and post-secondary levels and from the perspective of the students, parents, and teacher classroom practices (Aish, 2014; Daly, Mosyjowski, & Seifert, 2014; Mahdi et al., 2015; Rinkevich, 2014; Susnea & Tataru, 2014). However, understanding the teacher perception is instrumental in identifying how creativity is being recognized within the middle and secondary classroom, as well as whether it is being used to develop the skills necessary for post-secondary success. Therefore, understanding the teacher perception of creativity is fundamental to understanding how, if at all, it translates to student learning and skill development.

The literature on creativity in the classroom has been extensive; however, Aish (2014) and Daly et al. (2014) both noted that a more concentrated evaluation of how teachers perceive a creative environment and the use of creative teaching practices was needed. A more extensive assessment of teacher perceptions provided insights into how creativity is perceived to impact student academic success in the classroom. Through this study, the researcher offered an in-depth analysis of middle and secondary teachers perceptions of what constitutes a creative environment, and how student academic performance is affected, if at all. Several studies on creativity have been conducted recently concerning the elementary classroom or the post-

secondary environment, however the middle and the secondary school years have been left relatively unexamined (Aish, 2014; Daly et al., 2014; Mahdi et al., 2015; Rinkevich, 2014; Susnea & Tataru, 2014). When students transition from elementary to middle school, they often lose their sense of creativity (APA, 1996; Ryan, Shim & Makara, 2013; Torrance, 1974). The purpose of the following literature review is to examine prior research on creativity in the classroom.

A survey of the literature regarding the definition of creativity, as well as the facets and degrees of creativity found within the domains of business, education, and psychology, was conducted to begin the literature review. A historical perspective provided an overall understanding of the purpose of education, with the impact of cultural shifts and economic changes in America leading to several philosophical changes over time. The fields of psychology and education acted as the background of creativity. A mixture of definitions, theories, and concepts offered a rich foundation for examining creativity in the middle and secondary level classrooms. Evaluations of creativity from the idea of *a creative individual*, both as a student and as a teacher, as well as the creative classroom environment were foundational to the study. Additional analysis of varying levels of creativity was defined and evaluated. The literature review specifically addressed the creative environment and creative teaching practices found in curriculum and assessment.

Throughout the literature, researchers demonstrated that there remain differing viewpoints on creativity and academic achievement, however, increased motivation was noted when creativity was a central component of the classroom experience (Aish, 2014; Fisher, 2013; Foreman, 2014; Reed-Klein, 2014; Rinkevich, 2014; Starko, 2013). The sources of the literature review were retrieved through the electronic database searches of ERIC, ProQuest, and

Dissertation and Thesis Collection through Concordia University-Portland and Lincoln City Libraries. The University of Nebraska-Lincoln and the Lincoln Public Library were also utilized in the collection of this research.

Conceptual Framework: Social Constructivism

The social constructivist framework is derived from the theories of Dewey (1938) and Vygotsky (1978) wherein learning occurs from group observation and engagement in social situations. Dewey (1938) and Vygotsky (1978) asserted that learning takes place when students can construct the knowledge themselves or with peers, as they interact with the content directly and utilize the teacher as a facilitator or mentor. The social constructivist theory is the belief that learning is not passive assimilation or rote memorization but is learner-centered and consists of building understanding between new and old information through social interaction (Bruner, 1991; Vygotsky, 1978). This approach allows a person to build his or her knowledge through interaction and inquiry, assimilating new information with prior understanding (Carlson & Wiedl, 2013).

Social constructivism provides a framework in which individual points of view may be utilized to examine creativity and the impact of it on the classroom environment, curriculum, and culture. The use of the social constructivist framework allows for both the recognition of the individual experiences of the teacher and recognizes the knowledge that each participant contributes to the overall classroom learning experience (Fricke, 2015). The social constructivist framework is the most appropriate for this study due to the focus on individual teacher perceptions about creativity in his or her classroom. For this study, teachers interpreted their use of creativity in the classroom and how they perceive student achievement as it relates to creativity. They recognized student academic achievement is derived from a teacher's

understanding of how and why students learn and how the teacher contributes to these situations. Social constructivism recognizes that personal experiences build individual realities (Vygotsky, 1978). Present knowledge and past experiences are both linked to create personal meaning. The goal of this study was to explore the perceptions of teachers, this framework allowed for an in-depth analysis of both the teacher's past experiences, as well as his or her current practices regarding creativity.

Review of the Research Literature

Defining creativity. Due to the complexity of creativity, there are several definitions found in the research. Guilford (1956) stated that creativity was a distinct construct involving originality and divergent thinking. This original theory introduced the idea of creativity as a component to be studied, both from a psychological perspective, as well as an educational one. Several researchers have stated that creativity is something considered original and meaningful as it is defined within the social, historical, and cultural context of a given period (Aish, 2014; Cho et al., 2013; Rinkevich, 2014). However, the use of this definition offers additional ambiguity in attempting to define terms such as *original* and *meaningful*. What is considered original to one person, may not be viewed as original by another. Additionally, what was meaningful to one generation may not be meaningful to another.

Another approach to defining creativity found in the literature was to use common "creative characteristics" of people who have been accepted as creative. For example, creative may be one's ability to synthesize unlike concepts as a way to generate innovative ideas or products. Additionally, it is vital to consider creativity regarding an individual domain, or specialized area, rather than across all domains (Csikszentmihalyi, 1996, 1999, 2014; Gardner, 2011). One may be creative in a single field of study and not so in another.

Creativity does not happen in isolation; it requires both the individual to bring about the initial idea, as well as a social institution to accept and preserve the creation for the next generation (Sternberg & Lubart, 1995). Creative and original ideas do not emerge solely from one place. The social and historical culture of that time is needed to move the creative element into the next generation. A key to understanding creativity is to learn how that individual idea or product fits into the more extensive social network (Csikszentmihalyi, 2014; Robinson, 2011).

Creativity in the K–12 classroom setting has been subject to the same definition, with an emphasis on a student producing something that is novel or innovative to a particular domain. However, defining creativity in this setting may need to be adjusted to recognize that novelty does not have to be something that has never existed before but is novel or innovative to the individual creator, or the student (Starko, 2013). To develop a precise definition of creativity, one must consider the various understandings of creativity found in the literature. For this study, creativity was defined as innovative and divergent thinking that enabled students to generate novel ideas and build upon prior knowledge.

Facets of creativity. The most commonly accepted aspects of creativity are the person, the process, the product, and the press or environment (Beghetto & Kaufman, 2007; Kaufman & Beghetto, 2009, 2013). The concept of a creative person was based on early research done on known creative individuals. The researcher developed a list of common personality traits in those that had been universally accepted as creative (Beghetto & Kaufman, 2013; Fisher, 2013; Mahdi et al., 2015; Starko, 2013). Intrinsic motivation, broad interests, openness to experiences, and autonomy were all common elements found within these creative people (Beghetto & Kaufman, 2013; Fisher, 2013; Starko, 2013). These characteristics have been broadly described

as fluency, flexibility, originality, and elaboration (Torrance, 1980). Kaufman and Beghetto (2009, 2013) suggested adding frequency and complexity to this list.

The creative process, while studied, has remained the most elusive to understanding creative individuals. To understand the creative process, one would need to discern what happens within the brain of the person who is producing the creative idea or product. Essentially, the creative process is difficult to understand due to two factors: first, that it may appear different with each person; and second, that creativity may not be recognizable until the finished product has been accepted. Csikszentmihalyi (2014) represented the creative process through his flow model. In the flow model, time becomes distorted, and the activity becomes autotelic (Csikszentmihalyi, 2014). As a person works within the flow model, he or she can focus on a task with clear goals. While in flow, the person has immediate feedback and a balance between his or her skill set and a challenge exists.

Additional environmental factors, such as eliminating distractions, excluding worry or fear of failure, removing self-consciousness, as well as merging action and awareness add to creating flow (Csikszentmihalyi, 2014). From an educational perspective, the flow model is one in which students are pushed outside of being comfortable, but not so much that they are unable to complete the task. Unlike Vygotsky's (1978) idea of Zone of Proximal Development, which required an adult to work alongside a student, the flow model would create a situation in which the adult removes themselves from the task. The learner, while frustrated at times, will find a solution on his or her own. The flow model necessitated that a teacher would provide assignments that offer a skill and a challenge level for each student to increase motivation, as well as drive achievement.

Unlike the creative process, the creative product is the most easily identifiable creative element. Creative products are actual items created, produced, or published, and accepted as creative within the social and historical culture of society at that time (Beghetto & Kaufman 2007, 2013). The central element that differentiates the creative product from an uncreative product is the level of novelty to the community. In a classroom setting, this may have different expectations than in society. What is considered a creative product by adults, who have been exposed to more of the outside world, may differ from that of a child, who has had limited exposure (Cho et al., 2013). While many teachers believe that students engage in the creation of the creative production, the creative product may be difficult to find in classrooms that have pre-determined expectations and require students to copy, imitate, or repeat something that the teacher has done (Kokotsaki, 2011). Once the product has been created, it is easier to evaluate in a quantifiable way. The creation of an actual product makes it easier to evaluate and assess than the creative process itself. However, only assessing the creative product may be problematic because it fails to recognize both the creative potential found within the child and the creative process that each student works through (Beghetto & Kaufman, 2007). While the creative product is the most common element used to determine the level of creativity in a classroom, it is not established without a creative environment.

The final element, known as the press or the environment, establishes the setting of the original creation. Creativity tends to flourish in environments that are supportive of exploration and value originality. Classroom environment plays a vital role in the creative process, as well as creative production (Reed-Klein, 2014). Creativity was most likely to be found in environments that were viewed by the student as psychologically safe, as well as permissive of individual expression of ideas. Creativity is a result of interaction between an individual and the

environment. Therefore, the environment must offer an openness to experience new ideas, tolerate ambiguity, and view things beyond the conventional. The environment, specifically the classroom environment, should be a place to play with ideas and concepts, imagining impossible combinations (Aish, 2014; Rinkevich, 2014). Overall, the creative process and the creative product will cease to exist without a creative environment that sets the tone for different ways of thinking.

Furthermore, there are two distinct modes of thinking noted by several theorists—convergent and divergent thinking (Cho et al., 2013; Fisher, 2013; Foreman, 2014; Rinkevich, 2014; Robinson, 2011). Convergent thinking has been at the forefront of the current education system in that students are asked to seek the right answer. A child demonstrates convergent thinking when he or she offers the single best answer and uses familiar, established techniques to find that answer (Aish, 2014; Cho et al., 2013; Fisher, 2013; Rinkevich, 2014). While convergent thinking is not viewed as critical or innovative thinking, it is essential to the production of creative thinking (Starko, 2013). One cannot think critically about any given topic without having a foundational understanding of that subject (Starko, 2013). Conversely, divergent thinking is often viewed as a novel and is mentioned in several varied approaches that require an examination of perspectives, multiple answers, and novel solutions (Gardner, 2011; Guilford, 1967; Rinkevich, 2014; Starko, 2013; Torrance, 1972). Divergent thinking is considered a central characteristic of creative individuals and has come to be listed as a quality desired by both institutions of high learning, but also many career fields (Aish, 2014; Kaufman & Beghetto, 2013; Rinkevich, 2014; Robinson, 2011).

Levels of creativity. Kaufman and Beghetto (2009; 2013) defined four levels of creativity: mini-c, little-c, pro-c, and big-c. Each level indicates an acceptance of creativity from

a wider audience. Mini-c highlights the personal and developmental aspects of creativity (Aish, 2014; Beghetto & Kaufman, 2013; Cho et al., 2013; Kaufman & Beghetto, 2009, 2013; Reed-Klein, 2014; Rinkevich, 2014; Vygotsky, 2004). Mini-c is the transformative learning process and is novel and meaningful to the individual through his or her experiences or actions. Mini-c is the type of creativity that is most often experienced by a child learning a new task and therefore aligns itself well with the creative experience that most commonly occurs in the classroom settings. Often this has been identified as being the illumination moment or is commonly known in modern education as the "a-ha" moment. While mini-c has become more familiar in several areas, there are still a significant number of educators that do not recognize these a-ha moments as moments of creativity (Beghetto & Kaufman, 2007).

Unlike mini-c, which may be found in the day to day education of all students regardless of level, little-c is found most often in the early childhood classrooms and is emphasized less and less as students' progress through school. Little-c de-emphasizes the analytical side of creativity, taking away the IQ or other such numerical measures, and focuses on every day unconventionality, inquisitiveness, and imagination (Beghetto & Kaufman, 2007, 2013; Cho et al., 2013; Kaufman & Beghetto, 2009, 2013; Rinkevich, 2014). Little-c most often occurs when children are permitted to explore and play. Little-c is present in classrooms where students have opportunities to engage in class work that calls for original work and independent learning. Most often these classrooms are found in younger grades, where imaginative play and divergent thinking is valued. Little-c, much like mini-c, would be another area that could be emphasized more in all educational settings (Beghetto & Kaufman, 2007, 2013; Cho et al., 2013; Kaufman & Beghetto, 2009, 2013; Rinkevich, 2014).

The next two levels of creativity are often experienced as adults and occur after one leaves K–12 education. Pro-c is best noted by Csikszentmihalyi (1999, 2014) in his Systems Model as an innovative product or idea within a particular domain and during a fixed period. However, this innovative product or idea may not go on to maintain the same level of recognition for several generations (Csikszentmihalyi, 2014). Pro-c recognizes that at every level, from recipients of the Nobel Prize to considering the scribbles of a four-year-old's, specific fields are assessing new products and deciding whether they are creative and deserve inclusion in that particular domain. Pro-c may place someone at the level of an expert in their field for that period; however, they may not go on to have inter-domain attention or become famous creators (Beghetto & Kaufman, 2013; Kaufman & Beghetto, 2009, 2013). Finally, Big-c is what most commonly associated with the term *creative genius*. These individuals go down in history as being clear-cut, eminent creators that had a lasting impact on not only their domain, but the world (Kaufman & Beghetto, 2009, 2013).

History of creativity.

Purpose of education. There is substantial disagreement among teachers, administrators, policy-makers, and researchers regarding the purpose of education. During the Industrial Age, businesses had taken to an assembly line format to increase productivity, while keeping costs low. The assembly line had several workers completing a specific task within a specified time period, usually set forth by an external entity (Senge et al., 2012). Schools emulated this same method. Schools divided students into grades, and all students in that grade would learn the same content, once students learned the content they would move on to the next level. The teachers in the school would act as supervisors and would adhere to both the school schedule set by the district and taught the content material for that level. The supervisors in the school setting

are the stakeholders that the schools were accountable to, such as the state, the school board, and the administrators. While Industrial Age schooling increased the productivity of schools, it also created several problems that are still being dealt with today (Senge et al., 2012).

The uniformity of product and process of norms commonly drove teacher-centered instruction, with students acting as a product of knowledge. As products of knowledge, students ended up divided into two categories: bright students and dumb or slow students. Students that were unable to learn at the speed that was set by the stakeholders were labeled and either struggled their way through school or were entirely pushed out of school (Senge et al., 2012). This format created uniformity in the classroom and took away the individual ways that children learn, forcing everyone to learn in the same manner.

The curriculum and pedagogy found within Industrial Age education rested on the values of that time, emphasizing what was important to teach and what was the accepted way to teach it. The central learning pedagogy was on rote memorization, basic computation of facts, and the production of a similar product (Aish, 2014; Dezutter, 2011). Additionally, the teacher became the central component to the success or failure of the groups of students he or she taught. Teachers were responsible for dispensing the knowledge, as well as assessing it. Teachers were responsible for the student motivation to learn and the rules and discipline outlined in the class. Teachers viewed students as passive learners taking in the knowledge being dispensed to them and regurgitating that information to demonstrate mastery.

As the United States moved in the 20th century, it became apparent that reform was needed to change the system of education to meet the challenges faced by that time. During this time, the space race had taken hold and creativity was being investigated as a possible way to ensure America's position in the world (Aish, 2014). Guilford (1967) emphasized the need to

make creativity a focal point in education. The idea of imparting knowledge was less desirable than nurturing a child's ability to think and problem-solve in a wide-range of situations (Aish, 2014; Bruner, 1996; Fisher, 2013; Rinkevich, 2014). While the school system has been slow to change the traditional classroom approach, the time of change will be imminent as the demands of particular skill sets will be necessary for the new technology-based, globalized world. One of the primary purposes of education systems worldwide is to ready students for higher education and careers.

Creativity: Founding theorists. Dewey's (1938) model of problem-solving is considered one of the earliest models of creative thinking. Dewey described the problem-solving process as an internal feeling that leads to a solution or learning. First, one feels the difficulty, then it is located and defined, one considers his or her options, consequences of the solutions are noted, and one solution is accepted (Starko, 2013). Dewey also pointed out that children are socially active participants in learning and are eager to explore their environment. As children interact with their surroundings, they may encounter problems, and these problems would be the catalyst to learning. Dewey, therefore, did not see the teacher imparting knowledge as the way in which learning occurred. He believed in using the scientific method as an efficient process to learn. In using this method, children could solve problems and learn to think reflectively, which in turn allowed them to grow both in knowledge and in social understanding (Dewey, 1938; Ornstein et al., 2011). Dewey believed in three levels of learning: the first "making and doing" which engages students in the exploration of their environment and ideas; the second in exploring projects in history and geography; the third in "science" which was meant to encourage problem-solving and reflection (Ornstein et al., 2011). Dewey believed that enhancing autonomy to exercise intelligence would inspire people to address common problems.

Dewey's (1938) model of problem-solving related to Wallas' (1926) idea of a cognitive process of creativity in 1926, which offered four stages of understanding and learning. The four stages focused on different interactions between the content and the thoughts and actions of the learner (Wallas, 1926). The first stage was preparation, in which the person gathered related information and ideas that pertain to the content. The second stage was when the prepared materials were internally elaborated upon and organized. The third stage was when ideas emerged, and new learning occurred. The third stage was an important one to note in education, as this is what Wallas (1926) described as the illumination stage. The a-ha moment, or what Beghetto and Kaufman (2007) referred to as mini-c, is illustrated in this stage. The fourth stage was known as the verification stage, where the idea is evaluated and elaborated on until it reaches a final form. While both Dewey's model and Wallas' process appear to be organized linearly, it is noted by several researchers that the creative process is not strictly linear and these stages would often overlap and repeat (Aish, 2014; Cho et al., 2013; Dewey, 1938; Foreman, 2014; Kokotaski, 2011; Wallas, 1926).

Early educational and creativity theorists made way for Guilford (1967) to emphasize the importance of developing creative potential in all students and made creativity a focal point for future research and practice, in both the world of psychology and the world of education (Aish, 2014; Fisher, 2013; Flint, 2014; Foreman, 2014; Reed-Klein, 2014; Rinkevich, 2014). Guilford (1956) marked a change in thinking in education with the suggestion of the structure of intellect theory. This theory focused on three dimensions: operations, content, and products. The operations construct focused on cognition and understanding. It emphasized memory recording and retention and noted the difference between convergent and divergent thinking (Guilford, 1956). The operations construct also offered learners time to evaluate and reflect. The content

constructs focused on words, pictures, and people. It appraised figures found in the real world, as well as ideas and symbols interpreted by the individual (Guilford, 1956). The product construct focused on the connection and relationships found between items or people. The product construct discovered that products are units of knowledge, and classes of sets sharing similar attributes would allow for recognition of the relationships and systems found within them. This construct equated to higher-order skills, such as recognizing changes, as well as identifying and predicting future inferences, consequences, and anticipations (Guilford, 1956).

While Guilford's structure of intellect theory may have been the answer to how the creative process works, the way in which children construct knowledge was needed to blend the psychological and the educational. Jean Piaget used clinical observations to develop his theory on stages of development. Beginning with the sensorimotor stage and moving through the formal operational period it is essential for creativity and free play be incorporated and for prior knowledge to be built upon to reconstruct a child's cognitive understanding of the world (Aish, 2014; Cho et al., 2013; Ornstein et al., 2011; Piaget, 1972; Rinkevich, 2014; Senge et al., 2012). The sensorimotor stage, as well as the preoperational stage, both emphasize the child interacting with the world. Children utilize their five sense, as well as their developing mental structures to categorize and re-categorize their experiences to make sense of the world they are interacting in (Ornstein et al., 2011; Piaget, 1972; Senge et al., 2012). During these phases, often referred to as the early childhood years, adults encourage creative play and the use of imagination. Imaginative play helps prepare children for real-life experiences, both in education and in the world (Wilson, 2012). Piaget emphasized the need for children to direct themselves in play so that they may construct an understanding of the world and his or her place in the world (Ornstein et al., 2011; Wilson, 2012).

As children enter the concrete operational and formal operational stages, they are moved into a formal industrial age education (Senge et al., 2012). During these stages, Piaget (1972) emphasized that they begin to see the world in abstract ways and need room to negotiate and reconstruct prior knowledge. Piaget, like Dewey (1938), believed that children learn as they interact with their environment and build their knowledge through a process of the creative invention known as constructivism (Ornstein et al., 2011; Piaget, 1972; Senge et al., 2012).

In 1963, Torrance conducted a study with 650 teachers in 10 states. During this study, he created a checklist with 62 characteristics of creative personalities and asked teachers to place a checkmark next to attributes that should be encouraged in the classroom and a double check mark next to the top five characteristics. Teachers were asked to strike out any characteristic that they thought should be discouraged in the classroom. He found that while teachers claimed to encourage and value students who were independent thinkers, with a strong determination, sense of curiosity, and sense of humor those were not the characteristics fostered in the classroom. Students were often punished when they displayed playfulness, emotion, open-thinking or stubborn. Conversely, they were encouraged to be courteous, obedient, and willing to accept the judgment of authorities (Torrance, 1963). Overall, the effects of an Industrial Age education system led Torrance to determine that students often lose creativity about the time they enter fourth grade (Torrance, 1963).

However, Torrance also noted that creativity could be developed in students if teachers were to encourage creative thinking and value student's cultures and behaviors regarding the learning process (Torrance, 1965). Like Dewey (1938) and Wallas (1926), Torrance found that it was important for students to experience autonomy in the classroom and be given time to explore their interests and work on self-selected projects (Smith, 1996; Torrance, 1976).

Teachers should empower students to organize and plan activities and assignments that help them to develop. Torrance (1976) also stated that teachers should show respect for and value the unique questions and ideas that are often presented by creative children. It is essential to find ways to support student curiosity and to encourage problem seekers and question askers (Torrance, 1965, 1976).

Creativity in the modern sense has developed into, not only a skill that may be experienced in art and music but one that has become highly regarded in the sciences and mathematics as well (Daly et al., 2014). Characteristics of the creative manifest in various kinds of behaviors, such as risk-taking, curiosity, openness, and independence (Csikszentmihalyi, 1996, 2014; Gardner, 2011). Gardner (2011) and Csikszentmihalyi (1996, 2014) both emphasize the importance of a domain to the creative production. Creativity was not seen as a result of working alone, but rather a social interaction of learning within a culture or a group. Vygotsky (1978) used three stages to distinguish creativity: childhood, where creative imagination begins; adolescence, where imagination and thought are brought together; and adulthood, where mature creativity is controlled and used purposefully.

Gardner (2011), Csikszentmihalyi (2014), and Starko (2013) all agreed that a person, the domain, and the environment ultimately connect to support a creative environment. Creative people solve problems, fashion products, define new questions in a field that is initially novel but ultimately is accepted by the community. Novelty does not mean that the child came up with something new that has never existed before, but that it is new or novel that that individual creator (Beghetto & Kaufman, 2013; Starko, 2013). Additionally, creativity cannot exist in a vacuum (Csikszentmihalyi, 1996, 2014; Starko, 2013). It is critical to note that all great and innovative ideas have come from the cooperation of many and not only from the mind of a single

person (Csikszentmihalyi, 1996; Robinson, 2011). Human organizations are built on a foundation of relationships and energies that are derived from both the individual and the collaboration of individuals working together (Robinson, 2011).

The need for creativity. Education systems today are still based on the needs of the Industrial Society of the 19th century (Dezutter, 2011; Robinson, 2011; Senge et al., 2012). During this time, there was little need for originality when most workers were on a production line. The 1970s brought forth the gifted child movement, which emphasized developing the creative potential of students. However, this was only offered to a select few. As the 1980s demonstrated lower test scores, education moved to a "back-to-the-basics" philosophy, reestablishing the Industrial Age education practices (Robinson, 2011; Senge et al., 2012). These industrialized practices emphasized literacy over creativity and, with the publication of the NCEE *A Nation at Risk*, bolster these notions (Aish, 2014; Ravitch, 2016). Finally, the move toward accountability took hold in the late 1990s and early millennium that emphasized the test scores as a measurement of school accountability to raising standards leading to the No Child Left Behind (NCLB) Act and most recently the Common Core (CC) movement.

As students enter and leave college and join the workforce, it has become essential to recognize the qualities needed to be successful. The career force today needs synthesizers, creators, and meaning-makers (Gardner, 2007; Pink, 2005; Robinson, 2011). Society today needs people that can use their creative abilities to solve relevant real-world problems, both to assist in one's life and to contribute to the success of our society. The current systems of education are not designed to meet the challenges faced by society today (Pink, 2005; Robinson, 2011). Society today demands that people see problems from a global perspective and it requires a great need for creative thinking (Aish, 2014; Pink, 2005; Robinson, 2011). "Innovation for

higher-order skills—like critical thinking, self-directed learning, communication, and collaboration—that is most needed to prepare students for the world growing interdependence and change" (Senge et al., 2012, p. 38).

Over the past decade, a shift in the frameworks and structure of education has been dramatic worldwide. A combination of psychologists of the past, such as Dewey, Bruner, Piaget, and Vygotsky, as well as modern psychologists, such as Starko, Robinson, and Gardner, all emphasize that schools need to encourage creative thinking. Several countries across Europe and Asia have already shifted their standards-based education for a framework that supports detours of curiosity and student-led solutions (Aish, 2014; Fisher, 2013; Flint, 2014; Foreman, 2014; Mahdi et al., 2015; Reed-Klein, 2014; Rinkevich, 2014). The current education system puts pressure on schools to educate and train students for jobs that may not even exist yet (Aish, 2014; Foreman, 2014; Robinson, 2011). New pedagogies are needed to assist with students' abilities to create and invent the new world they are entering.

Creativity, pedagogy, and learning.

Creative learning environment. Rogers (1962) stated that the classroom environment often played a vital role in fostering creative and divergent thinking. Novel and creative products emerged from the interaction of an individual with the learning environment (Rogers, 1962). A creative learning environment may offer an openness to experience new ideas, tolerate ambiguity, and view things beyond the conventional. The creative learning environment may also be a place to play with ideas and concepts, imagining impossible combinations (Aish, 2014; Rinkevich, 2014). Marksberry (1963) found that the physical classroom should be cheerful, colorful, challenging, and stimulating in a way that invites experimentation.

Creative learning environments are free from fear and are structured, but not rigid. They concentrate on a particular subject area but are not restricted by one correct answer. They are also open to new ideas with respectfulness, and open to free connections (Aish, 2014; Fisher, 2013; Rinkevich, 2014; Starko, 2013). Students should be given opportunities to direct their learning. Materials and intellectual resources may be available and can be selected at will. Students should be encouraged with intrinsic motivation, rather than external rewards (Csikzsentmihalyi, 1996, 2014; Kokotsaki, 2011; Rinkevich, 2014; Starko, 2013; Sternberg, 2006). The movement should be encouraged, and the focus should be on improvement, rather than competition (Aish, 2014; Kokotsaki, 2011; Reed-Klein, 2014; Rinkevich, 2014).

Creative abilities. Teachers should have realistic expectations of high performance and be well trained in how to increase performance for students' creative abilities to be encouraged (Csikzsentmihalyi, 2014). Additionally, to validate a child's creative ability, a teacher is encouraged to recognize the creative potential in each student and provide opportunities for children to identify and explore their hopes (Bruner, 1996; Vygotsky, 2004). At the beginning of elementary school, teachers begin to suppress a children's natural creativity when they ask them to replicate an idea or artifact just as it was demonstrated (Starko, 2013). When a teacher encourages a student to color the flower red or the sun yellow, he or she is taking away the child's creative freedom and limiting their creative ability.

It is essential students have opportunities to experience autonomy in the classroom and explore their interests and self-initiated projects. The creative process could be utilized to enhance the content and create a variety of products that demonstrate student learning. The art of creative process and learning occur when three abilities are balanced and taught how to be balanced (Beghetto & Kaufman, 2013; Kaufman & Beghetto, 2009; Starko, 2013). The first is

synthetic ability, which is the capacity to generate novel ideas and interests, as well as draw connections between different ideas or concepts (Sternberg & Williams, 1996). During this phase, students are encouraged to come up with any and all ideas. To enhance these abilities teachers can model ways that they think about a concept creatively. Synthetic ability draws many parallels to the way in which the teacher has created the environment (Sternberg & Lubart, 1999).

The second creative ability is being able to act analytically. This area focuses on the skills to both critically consider the generated ideas and evaluated them (Fisher, 2013; Reed-Klein, 2014; Starko, 2013; Sternberg & Williams, 1996). To nurture creative thinking, students need to question already established assumptions about conventional ideas and learn to tolerate the ambiguity of not having a clear right or wrong answer. Students may need to redefine the problem in a new way or be assisted in seeing the problem from a different point. Delineating the problem, synthesizing previous experiences with the ideas, and withholding judgment on which ideas will work best are additional ways in which a student may work through this process critically and analyze the merit of each idea (Beghetto & Kaufman, 2013; Franken, 2006; Starko, 2013).

The third creative ability is understanding practicality. This area is how a student would translate their idea, solution, or concept into practice (Sternberg & Williams, 1996). This ability requires a student to take his or her abstract idea and convince others that there is merit to trying it out. The teacher assists students with self-regulation and responsibility, as well as encouraging sensible risks. People rarely do creative work unless they love what they are doing and can focus on the work at hand rather than the result or reward. As an educator, it is essential to consider how much time is available for free creative thinking and how to create learning that interests

each learner. A possible suggestion by many researchers are to offer longer-term assignments that encourage ambiguity and support individual interests (Aish, 2014; Cho et al., 2013; Csikzsentmihalyi, 1996, 2014; Fisher, 2013; Foreman, 2014; Kaufman & Beghetto, 2013; Rinkevich, 2014; Starko, 2013; Sternberg, 2006). Research has shown that when students are taught in a way that fits how they think, they do better in school. Often children with creative abilities are almost never given opportunities to learn in a way that matches their pattern of abilities (Sternberg, 2006).

Creativity and student motivation. The instructional classrooms of the Industrial Age overemphasized the teacher-centered instruction and rote memorization (Senge et al., 2012). This philosophy has resurfaced again in the form of NCLB and CC, systems that undervalue creativity and value order and quiet to curiosity and creativity. In the current educational system teachers are at the center of the classroom, and the standardized curriculum and tests act as a measuring stick to the success or failure of a student or a school. Research has demonstrated that using this archaic method only takes away the individual experience and motivation to learn (Aish, 2014; Fisher, 2013; Foreman, 2014; Kaufman & Beghetto, 2013; Mahdi et al., 2015; Munakata & Vaidya, 2013; Pink, 2005; Reed-Klein, 2014; Rinkevich, 2014; Starko, 2013).

Students are often more creative and involved in learning when they feel motivated by their curiosities, interests, needs, and reasons (Aish, 2014; Munakata & Vaidya, 2013; Rinkevich, 2014). Glucksberg (1962) found that student performance went down when offered external rewards, finding they had a lower rate of performance than when no reward was offered (Pink, 2005). Ariely and three of his colleagues did a study of MIT students, as well as a study in Madurai, India and found the same results—the higher the reward, the lower the performance (Keen, 2010). Motivation and learning go hand in hand. People, and especially children are

drawn to learning if it is exciting, challenging, or creative. As teachers relinquish control and make the classroom student-centered, the motivation to learn will increase, and learning will improve (Dewey, 1938; Ornstein et al., 2011; Pink, 2005; Robinson, 201; Sinek, 2009).

Motivation is needed for creative thinking. "Student imagination and curiosity drive the learning process, and creativity becomes the vehicle for understanding" (Beghetto & Plucker, 2006, p. 324). A constructivist approach to learning enables the individual to construct new knowledge by recognizing existing knowledge and creating situations that challenge this prior knowledge. In this regard, students are active learners that direct their learning experiences. The idea is that students are creating or constructing knowledge, rather than having it transmitted from authority.

Fostering creativity. A creative classroom environment will provide opportunities and will encourage individuals to develop his or her creativity (Bloom & Sosniak, 1985; Torrance, 1970). One way to foster creativity is to eliminate the fear of getting the answer wrong, as well as limiting the number of questions that have "one right answer." Teachers may be structured, but not rigid. They can foster creativity by being open to different connections and interpretations. Teachers can improve creative problem-solving skills in children if they infuse the existing curriculum with creative problem-solving strategies (Auteri, 1975). Opportunities to complete assignments that ask for original and independent work is another way teachers can foster creativity (Torrance, 1976). It is of vital importance that students experience some form of autonomy in the classroom by exploring their interests and engaging in their projects (Aish, 2014; Dewey, 1938; Keen, 2010; Ornstein et al., 2011; Pink, 2005; Smith, 1996; Torrance, 1976; Vygotsky, 2004). Respecting and valuing unusual questions and ideas may also encourage problem finders and knowledge seekers (Torrance, 1976). Rinkevich (2014) found that

knowledge gaps were at their smallest when curiosity and exploration were at their highest. Therefore, teachers must find a way to support student curiosity. Finally, teachers might avoid giving examples or detailed illustrations as it may restrict or shape a student's thinking and reduce originality (Torrance, 1970).

Barriers to creativity. There has been a demonstrated bias against creative students, as the preferred student is one who is complying and conforms to the teacher's expectation (Torrance, 1963). Teachers have associated creativity with nonconformity, impulsivity, and disruptive behavior (Aish, 2014; Beghetto, 2010). Teachers prefer high IQ students with less creativity; studies have found that creative behavior is more often punished, rather than rewarded (Torrance, 1963). Teachers need to understand his or her bias and perceptions regarding creativity and how creativity is expressed within the classroom environment and within learning itself. Creative children thrive on questioning received wisdom and tend to look at things from a different angle, which may result in seemingly strange answers (Aish, 2014).

Additionally, there are common misconceptions about the nature of creativity. One central misconception is that creativity happens alone and that it is rare and only found in gifted children. Several studies have found that all children can be creative and taught to be creative if in the right environment and with the right support (Aljughaiman, 2002; Cromwell, 1993; Gardner, 2011; Starko, 2013; Torrance, 1970). This inequality is particularly pronounced for culturally diverse students who historically have been underrepresented in United States gifted education programs. Another common misconception is the idea that creativity is extra-curricular or something that is done after the learning if there is time and is rarely found in math or science classes (Aish, 2014; Daly et al., 2014). There is also a misconception that creativity is

a product. Students are rewarded for a creative product, such as a drawing or painting, but creative insights or interpretations of the curriculum are not rewarded.

One final factor that may influence student creativity is a teacher's personal experience and how that personal experience has shaped their classroom environment, approach to learning, the expectation of behavior, and general educational philosophy. A teacher's personal experience has been found to drive many of the decisions they make in the classroom, rather than relying on research or studies that have found what increases learning in the classroom.

Summary

The debate in instructional design has long been a discussion in the field of education. While schools today still function in the same way as they did during the Industrial Era, it is becoming increasingly clear that students from that system are no longer leaving with the needed skills to work within our new globalized society. Creativity in the classroom has been demonstrated to help build learners that conduct investigations, encounter new learnings, and pose more questions. They offer practical solutions to problem-solving and carry their knowledge from the classroom to their real life (Duke, 2011). The use of creativity needs to be further evaluated to determine its long-term effects on higher-order problem-solving and reasoning skills. This study focused on examining the perception of creativity in the classroom and its potential impact on student academic achievement under the Constructivist Framework. The overall purpose of the study is to add much needed qualitative data to the middle and secondary teaching experience. Through this collection of various data, the study resulted in school leaders and policymakers gaining a strong foundation to implement more creative approaches to learning and build students for the world in which they will move into upon completion of their education.

Chapter 3: Methodology

Introduction to Chapter 3

Several educational movements have prompted questions about the classroom experience, however the approach to education has remained relatively unchanged since the time of Industrial Age education (Robinson, 2011). Legislative reforms, such as No Child Left Behind and Common Core, have led to learning standards and an emphasis on standardized learning. However, as students enter, leave college, and join the workforce, it has become apparent that the career force today needs synthesizers, creators, and meaning-makers (Gardner, 2007; Pink, 2005; Robinson, 2011). Life after formal education requires that people use creativity to solve real-world problems. The current system of education is not designed to meet the challenges faced by society today. It is essential that people see problems from a global perspective and increase creative thinking (Aish, 2014; Pink, 2005; Robinson, 2011).

The research presented in the literature review represented studies on creativity in the classroom. However, most of the current research concerning creativity has focused on the early childhood and elementary classroom. Researchers continue to explore differing viewpoints on creativity and academic achievement, however, there still exists a gap regarding creativity at the middle and secondary level (Aish, 2014; Rinkevich, 2014; Starko, 2013). Teacher perceptions have been found to influence significantly the practices used in the classroom (Aish, 2014; Aljughaiman, 2002; Olivant, 2009). A teacher's personal experience and how that personal experience shapes their classroom environment and approach to learning is paramount to understanding the place creativity has in the classroom.

Statement of the Problem

This qualitative case study allowed the researcher to explore teacher perceptions concerning creative learning environments and the perceived effects of creativity on student academic achievement in middle and secondary education. The problem is current standards-based educational practices are not enabling students to develop the creative thinking needed to be successful in today's globalized society. Current research has focused on creativity in the early childhood, elementary, and post-secondary classroom, and from the perspective of the students, parents, and classroom practices (Aish, 2014; Daly, Mosyjowski, & Seifert, 2014; Mahdi, Sukarman & Yok, 2015; Rinkevich, 2014; Susnea & Tataru, 2014). However, understanding teacher perception at the middle and secondary level is instrumental in identifying how creativity is utilized as students prepare for post-secondary education and careers. Additionally, understanding whether creativity was being enhanced within the middle and secondary classroom was fundamental in gauging the effects of creativity on student learning. Chapter 3 will include the research questions, the research methodology, and design. Additional discussion concerning details of instruments, materials, and data collection will be presented. Finally, this chapter will address the study's limitations and ethical issues to be considered for future study.

Research Questions and Hypotheses

The research questions addressed in this study include the following:

R_1: How do teachers perceive a creative learning environment in the middle and secondary classroom?

R_2: How do middle and secondary school teachers perceive the use of creative learning strategies affecting student achievement?

Each of these questions were explored through a questionnaire, classroom observations, and follow-up interviews. The questionnaire, observation protocol sheet, and interview protocol sheet were developed using commonly accepted creative practices found in the literature review. Each of these sources highlighted the teacher's perceptions of using creativity, as well as the perceived effects creativity has on student learning. The insights gathered by using three forms of sources served to corroborate the perceptions of the teacher and offered the analysis of common themes that were also demonstrated in the literature (Yin, 2013).

Research Methodology

The use of qualitative research was needed to establish the perceptions of teachers concerning creativity and its perceived effects on student academic achievement (Aish, 2014; Fisher, 2013; Reed-Klein, 2014; Rinkevich, 2014; Starko, 2013). As noted by Aish (2014) and Daly et al. (2014), further understanding of how teachers perceive both a creative environment and the use of creative teaching practices would provide an understanding into how these perceptions may affect student academic success. The use of a qualitative methodology allowed for the collection of data in a natural setting and recognized the individual experience and voice throughout the process (Creswell, 2013). Multiple sources of data, such as observations, questionnaires, and interviews, allowed for a broad overlook and an in-depth analysis of the use of creativity in the middle and secondary classroom. Yin (2013) stated the use of qualitative research offers a holistic account of creativity and provides a comprehensive understanding that cannot be provided by statistical analysis alone. The use of qualitative research methods over quantitative allowed for the exploration of teacher perceptions concerning creativity and recognized the individual teacher experience (Yin, 2013).

Research Design

The use of a case study design assisted in developing subjective meanings of individual experiences and relied on the participants' point of view to understand the situation being studied (Yin, 2013). This design supported the belief that information and learning were not simply impressed upon the individual but was constructed through interaction with others and through the historical and cultural norms that exist within that individual's life (Creswell, 2013). The questions found within case study research are often broad and open-ended to allow the researcher to carefully listen to what the participants are saying or doing within his or her life setting and to draw common patterns or explanations among those experiences (Creswell, 2013; Yin, 2013). Additionally, when using the case study design, the researcher is asked to "position themselves" within the context of the research to acknowledge how his or her personal, cultural, and historical experiences may impact the study (Creswell, 2013; Yin, 2013). The overall goal of case study research is to relate different experiences to establish a common pattern (Yin, 2013).

Population and Sample Selection

The population of this study consisted of teachers from 12 public middle schools and seven public high schools in two urban Midwestern cities. Fifty-two percent of middle school teachers obtained a Master's Degree. Fifty-eight percent of high school teachers obtained a Master's Degree. The average years of experience in middle school was 13.7 years. The average years of experience in the high school was 15.30 years.

The target population for this study was 15 middle school and high school teachers who identified using the Creativity in the Classroom Questionnaire (see Appendix A). The questionnaire was used to demonstrate the presence of creativity within the classroom

environment (Aish, 2014; Beghetto & Kaufman, 2007; Daley et al., 2014; Reed-Klein, 2014; Rinkevich, 2014). While there has been research on creativity in both the elementary classroom and the postsecondary environment, the middle and the secondary school years have been left relatively unexamined (Aish, 2014; Daly et al., 2014). Therefore, to add to the body of research concerning these levels it was critical to fully understand what role creativity plays in student learning at the middle and secondary level.

Seven middle school and high school teachers from two school sites within a small, urban, Midwestern school district, during the fall semester of the 2017–2018 school year made up the sample. The sample consisted of middle and secondary teachers who have self-reported through the initial questionnaire that creativity is valued, utilized, and encouraged within the classroom. Each participant was observed two times. The observation allowed for creative practices to be identified using the observation protocol sheet created by the researcher (see Appendix B), and specific examples for each participant was noted. A follow-up interview with each participant after the observations further explored the perceptions of the role of creativity in the classroom.

The sample for this study was selected from all teacher respondents who completed an online questionnaire, offered through Qualtrics, which show a strong response to the questions identified as creative as opposed to those identified as traditional (see "Researcher's Key to Questionnaire Interpretation of Data" in Appendix A). The strongest responses at each level were invited to participate in the classroom observation and interview portion of the study, during the fall semester of the 2017–2018 school year. The questionnaire was sent to all teachers in two districts that teach middle and high school to avoid sampling error. To avoid framing error a current list of middle and high school teachers was requested from each district. To

prevent selection error, a thorough and complete evaluation of the list confirmed that each potential participant received the same request and the same number of requests, due to the sharing of staff between both the middle and high school.

Authorization process. Several steps were needed to gain authorization to complete this case study within the small, urban, Midwestern school district. First, the researcher had to submit a letter detailing the research to gain pre-approval (see Appendix C), and a letter of support from the researcher's dissertation chair. After initial approval had been granted by the school administrators (see Appendices D, E), the researcher completed the IRB process and obtain a letter demonstrating the support of Concordia University to the researcher. Upon completion of the review process, the researcher sent both a participation invitation letter (see Appendix F) and a timeline (see Appendix G) to each administrator and potential participant. A week following the participant invitation letter, an additional letter containing directions for disseminating the questionnaire was sent to each administrator (see Appendix H).

Confidentiality measures. The researcher upheld the highest regard for ensuring privacy and confidentiality for all participants, but anonymity was not possible in the study. No identifying information was used in either the research reporting or the findings to ensure confidentiality. When selected to be a part of the observation and interview stages of the study, the teachers were given a number to keep the interviewee confidential. The observation notes, as well as the interview notes and any recordings, were stored in a locked filing cabinet, either as a hard copy, a password-protected folder on the researcher's computer or on a flash drive. The researcher will retain a hard copy of the consent forms and interview and observation notes for a minimum of three years after the research study has been completed and the dissertation approved by Concordia University-Portland. The information will remain in the locked filing

cabinet in the researcher's home, and the researcher will be the only one with access to the key. After three years, all records will be destroyed.

Sources of Data

The initial questionnaire used in this study was a creative and demographic questionnaire created by the researcher based on the common themes found in the literature. The questionnaire was created using Qualtrics and disseminated through email to each administrator. Each administrator forwarded the link to each teacher. The purpose of the questionnaire (see Appendix A) was to measure attitude toward creativity in the classroom, as well as establish creative behaviors and practices found within the classroom environment. The questionnaire utilized a 5-point Likert-type scale, with one being never and five being always. There were four sections to the questionnaire: classroom environment and teaching philosophy; learning process and activities; assessment and product in the classroom; and demographic data. Each section offered a balance of creative and traditional answers to enable the researcher to uncover the degree of opinion about the use of creativity in the classroom (Diem, 2004). Common creative practices and environmental factors found in the review of the literature were utilized to formulate the questionnaire.

The second data source used for this study (see Appendix B) was an observation protocol sheet (Creswell, 2013). The observation protocol sheet, developed by the researcher, was developed to provide a common framework for field notes at all participant observations. The elements contained within the sheet were selected from common practices found within creative classrooms as indicated from previous studies discussed in the literature review. The observations were utilized to substantiate the teacher's perceptions and obtain a much more detailed point of reference to discuss the perceptions of the participant further and to establish

common themes (Diem, 2004; Yin, 2013). These commonalities allowed organization and categorization of the information to establish general perceptions found within these teacher groups. Common creative practices found in the review of the literature were utilized to formulate the checklist, with a notes section included allowing for the researcher to describe specific examples.

The final source of data was two semi-structured person-to-person interviews (see Appendices I, J) conducted after the observation. The purpose of the interviews was to examine the attitudes, feelings, concerns, and values of the participants more efficiently than observation alone can establish (Yin, 2013). The interviews were semi-structured, with guiding questions created by the researcher for all participants, but also allow conversational flexibility to the responses.

Data Collection

Prior to the questionnaire being sent to the schools, each administrator and teacher received an email participant invitation letter (see Appendix F), along with a timeline for the study (see Appendix G). The letter included the purpose of the study, researcher's contact information, and the contact details for Concordia University-Portland. One week following the letter of introduction, each administrator received an email that contained directions for disseminating the questionnaire to each teacher through an online link (see Appendix H). Teachers were asked to complete the questionnaire within two weeks of its opening, using the first two letters of his or her last name and the first two letters of his or her first name, along with the school initials to assist in identifying the participant to the researcher, but maintaining confidentiality during the study. After completion of the questionnaire, the teachers were identified as possible individual participants and were sent an email to confirm their desired

participation in the case study and a consent form was signed (see Appendix I). After participants consented to be a part of the study, they were assigned a number used throughout the study and signed a participant consent form (see Appendix I). All notes, observations, and interviews referenced the number.

Questionnaire field test. The initial questionnaire was sent to seven private, middle and high school teachers via Qualtrics, giving teachers one week to complete it. A follow-up email was sent to the principal of the field test site and forwarded to the teachers inviting them to identify confusing or unclear questions, as well as share the amount of time it took to complete the questionnaire. The teachers remained anonymous, and their identities were not used for any part of the study. The researcher used the feedback from the field study site to make needed modifications. The modified questionnaire was sent to the same field test group for any additional comments and suggestions.

Questionnaire. The initial questionnaire link was sent to the middle and high school administrators within two urban school districts using their district identified email. The administrators disseminated the link to each of the teachers. The teachers used the first two letters of his or her last name and the first two letters of his or her first name, along with the school initials to complete and submit the questionnaire. This identification allowed the researcher to identify which teachers were included in the case study while maintaining confidentiality. After the data was collected from the questionnaire, the researcher identified fifteen middle school and high school teachers to be a part of the case study. The remaining questionnaire results were destroyed upon the completion of the study.

Case study sample. An invitation to participate was sent via individual emails to each of the potential participants (see Appendix F). Once participants agreed to be a part of the study,

they received a letter of informed consent (see Appendix I), and the researcher worked with everyone to set up observations and follow up with in-person interviews.

Observations. Each participant was observed two times. Each observation lasted no longer than one hour. The observations allowed a much more detailed point of reference to discuss the perceptions of the participant further and to establish common themes (Yin, 2013). The observations included field notes written by the researcher and transcribed for later coding and analysis. The Observation Protocol sheet ensured all participants were analyzed in a similar manner (Yin, 2013).

Interviews. Each participant had a follow-up interview after the observation that lasted no longer than 30 minutes. The interview examined the attitudes, feelings, concerns, and values of the participants concerning creativity (Yin, 2013). The interviews were semi-structured, with guiding questions created by the researcher based on the literature, but also allowed a conversational flexibility to the responses (See Appendices I, J). The questions to begin the interview reflected the central research questions. Additional discussion was noted as the conversation progresses.

Data Analysis Procedures

Yin (2013) stated that one strategy for analyzing case study research was in following the theoretical propositions that initially led to the study. The propositions for the case study shaped both the data collection, as well as the data analysis (Yin, 2013). The central proposition found within the literature review was that creativity could be viewed through the lens of four main facets: the person, the process, the product, and the environment (Beghetto & Kaufman, 2007; Kaufman & Beghetto, 2009, 2013). These concepts provided the foundation for the initial questionnaire, as well as the observation protocol sheet and interview questions created by the

researcher. As such, the same propositions were used to analyze the data. The data gathered through the observation and interview process required an initial reading of the transcripts before any advanced analysis.

Initially, all teachers received the Creativity in the Classroom Questionnaire (see Appendix B). The researcher evaluated each questionnaire to identify those teachers who have stronger compatibility with creative classroom practices and a creative environment. The researcher counted the number of high scoring creative questions and compare that to the number of high scoring traditional responses, creating a rank of most self-identified creative teachers to least self-identified creative teachers (see Appendix B). Fifteen teachers from middle school and high school with the highest creativity responses were invited to be a part of the classroom observations and the follow-up interviews.

Following the questionnaire, the researcher performed two classroom observations, with one-on-one interviews to follow. The classroom observation protocol (see Appendix A) were used to make a note of creative practices observed by the researcher while in the classroom and to note the classroom environment. To determine if the classroom environment was creative, a list of environmental factors as found in the literature was added to the observation protocol. Additionally, the other three primary theoretical propositions discussed in the literature were also noted in the observation protocol. The protocol served as a formal instrument used to code creative practices observed in the classroom specifically. The observation protocol coded classroom observations into one of the four primary theoretical propositions. Additionally, the observation protocol allowed the researcher to focus on creative practices and later be able to add to the narrative of each participant.

A semi-structured, one-on-one interview was conducted following the classroom observations. The contents of the interview were transcribed and provided to each participant to ensure accuracy. Following the initial examination of the transcripts, basic coding techniques, as outlined by Saldaña (2016), were used. The researcher used the participant's direct words to initially label groups of sentences or a paragraph that made up the data points of this study. Each transcript was coded to form categories. The categorical codes were entered into a computer-assisted qualitative data analysis software (CAQDAS) tool. CAQDAS assisted in establishing the individual codes into a category list signifying lower and higher code frequency. The categories were classified by themes. The frequency of themes was noted and analyzed for patterns across all participants and participants at the same grade level. Additional analytic memos were written throughout the study to support coding and to follow the evolution of the study results (Saldaña, 2016). Finally, the repeated themes were grouped as part of the reported data and analyzed against the themes noted in the original research.

Limitations of Research Design

Internal validity. Internal validity was established by gathering multiple data sources for analysis. The initial questionnaire, the classroom observations, and the person-to-person interviews established a triangulation of data (Yin, 2013). The use of a common observation protocol ensured that all participants were observed in the same manner and that similar creative elements were noted for each observation. Additional pattern matching compared themes found in the study to those in the studies used in the literature review.

Credibility. The researcher adhered to all research procedures approved by the IRB for collecting qualitative data to ensure accuracy and credibility. Participants were not contacted until the research committee had approved the study and permission had been granted by both

the school district and IRB. Once approved, each participant received a letter of informed consent (see Appendix I) which included participants' rights and a confidentiality request. Individual interviews were audio recorded and transcribed completely. All transcripts were kept in a password protected folder on the researcher's computer. Additional backup files were kept on a flash drive, with both the flash drive and the hard copies kept in a locked filing cabinet.

To ensure that all findings were accurate, the researcher used member checking, wherein the participants were asked to review the interview notes to confirm the data was accurate. The use of member checking allowed the participants to clarify any misunderstandings or misconceptions. Additionally, the participants reviewed all transcripts for accuracy and approved the transcripts prior to analysis. All participants were given a number to protect his or her identity, as well as the identity of the school. The triangulation of data using the questionnaire and the classroom observations allowed corroboration of interview data and assisted the researcher in controlling bias.

External validity. The study used a sample size of teachers that was both feasible and provided enough data to establish common themes. The study offered a focused view of one group of middle level and one group of secondary level teachers. While generalization of the perceptions of this group to all situations may not be possible, some conceptions discovered replicated those found at previously studied levels, such as early childhood, elementary, and post-secondary. Common themes and perceptions from this study added to the body of research in how creativity impacted student academic achievement. The common themes found in the study also offered a starting point for further discussions into the use of creativity in the classroom as it relates to student academic success.

Transferability. The methodology of the study, description of participants used, the setting, the instruments developed, piloted, and used, as well as how the data was analyzed were described in detail to lead to an increased opportunity of transferability of results. Including both the questionnaire (see Appendix B) and the observation protocol sheet (see Appendix A) may support transferability of results. Key findings that emerged were emphasized because of their potential transferability to other cases. Overall, the transferability was increased by the rich descriptions provided by the researcher throughout the study.

Ethical Issues

To ensure the study was conducted using the absolute highest ethical research standards the researcher consulted the APA Code of Ethics. Prior to conducting the study, the researcher received institution approval, both from Concordia University-Portland and the school district where the study was conducted. Additionally, the researcher provided informed consent documents signed by all participants (see Appendix I). The researcher did not discriminate against participants based on age, gender, gender identity, race, ethnicity, culture, natural origin, religion, sexual orientation, disability, or socioeconomic status as noted in the APA Code of Ethics section 3.01. This study utilized the "do no harm" doctrine as a primary guideline for conducting research. An exhaustive effort ensured confidentiality of the participants and every protection was employed to prevent deception. The researcher did not have conflicts of interest within the district as she was not a district employee and her children did not attend a school in these districts. All efforts were made to maintain a minimum intrusion on privacy.

As a creative educator, the researcher recognized that creativity may be a primary force in how students construct their learning. The researcher approached this study through the lens of creativity building student academic achievement through motivation. The researcher

emphasized how creativity was used in the classroom by both analyzing the questionnaires and selecting teachers who self-identified as creative, as well as observing the classrooms for those creative practices. As a teacher who has engaged in a variety of creative teaching practices within her classroom, the researcher started the research process with certain beliefs about creativity. As the researcher observed and interviewed teachers, she was mindful of her role as a creative educator and how it may have impacted the data collection and the analysis. The researchers primary role in this study was as an observer.

Summary

Ultimately, through this study, the researcher explored teacher perceptions concerning a creative learning environment and the effects of creativity on student academic achievement. In coming to understand the teacher perception at the middle and secondary level further, identification into how creativity is being recognized and utilized may be discussed at a deeper level. Understanding whether creativity was being enhanced within the middle and secondary classroom was fundamental to gauging the effects of creativity on student learning and may have lasting effects on students as they enter post-secondary education or a career.

Chapter 4: Data Analysis and Results

The purpose of this qualitative case study was to explore teacher perceptions concerning a creative learning environment and the effects of creativity, if any, on student academic achievement in middle and secondary education. Research concerning creativity is instrumental in finding how middle and secondary classroom teachers prepare students for post-secondary education and career opportunities. It is essential that the qualities required for post-secondary success are a part of the K–12 education system. Society asks for people that are creative, able to adapt to different environments, and can see things from different angles (Rinkevich, 2014; Robinson, 2011; Starko, 2013). Creativity, and how it is fostered, is central to developing these skills.

While current research has focused on creativity in the classroom at various other levels, middle and secondary education has been relatively unexamined. This study sought to address this gap in the literature by exploring the perceptions of teachers at the middle and secondary level concerning creativity. The focus of this case study was to examine the perceptions of teachers who identified as creative at the middle and secondary levels. A teacher's personal experience and how that personal experience shapes his or her classroom environment and approach to learning is paramount to understanding the place creativity has in the classroom, if at all.

The two central research questions were:

R_1: How do teachers perceive a creative learning environment in the middle and secondary classroom?

R_2: How do middle and secondary school teachers perceive the use of creative learning strategies affecting student achievement?

The data utilized to evaluate these questions was gathered from seven public school teachers, one high school, and one middle school, from an urban, midwestern area. Three sources of data were collected: a questionnaire, classroom observations, and face-to-face interviews. The questionnaire comprised 16 questions in three areas. The three areas included classroom environment/teaching philosophy, learning process/activities, and assessment. Each section included eight questions that reflected research-based creative practices and eight questions that reflected research-based traditional practices. An average creative and average traditional score were determined for each section and then for the questionnaire overall. Teachers who reflected a higher creative average were invited to participate in the second part of the qualitative study. The questionnaire demonstrated that teachers perceive creativity in the areas of the classroom environment and the learning process, however, creativity was not perceived to be included in student assessment.

The second method of data collection included notes taken for two 1-hour classroom observations. The observation protocol sheet (see Appendix A) was used to evaluate classroom environment from the same creative lens. The protocol sheet included room arrangement, general student demographics, as well as four facets of creativity (person, process, product, environment) and two types of thinking (convergent, divergent). The observations were coded using NVivo Qualitative Data Technology and Microsoft Excel. Several themes concerning a creative environment emerged, including the creative classroom was observed to be psychologically safe and free from fear and worry; structured, but not rigid; and students in the classroom had minimal outside distractions. Additionally, student achievement in a creative classroom was observed to improved when tasks offered clear goals but allowed for individual

approaches to the learning; when there was a balance between abilities and challenge; and when varied perspectives were encouraged.

The third method of data collection included both handwritten notes and audio recordings obtained for two 30-minute face-to-face interviews. The first interview consisted of nine established questions pertaining to the central research questions. The second interview consisted of seven established questions pertaining to both the first observations and interviews, as well as questionnaire results. The interviews also allowed participant-led discussion and elaboration concerning creativity in the classroom. The interviews were transcribed using Express Scribe Pro software by the researcher and were checked for accuracy by the participants. The interviews were then coded using NVivo Qualitative Data Technology. Three themes were noted regarding classroom environment: A creative classroom allows for mistakes; students ask questions and venture answers; and, students are offered several different ways to engage in the learning process. Additionally, three themes emerged concerning student achievement in a creative classroom, including student engagement in learning; new ideas and detours of curiosity are embraced; and thinking, writing, and visuals are all components of student work.

After collecting, coding, and analyzing the data commonalities were evaluated to triangulate the findings and determine credibility. All themes were evaluated, and two central themes emerged. First, a creative environment is one in which student feel safe and trust the people in the classroom, especially the teacher. Second, students are recognized for their individual needs, learning preferences, and abilities. This chapter will describe the participants, discuss the research methodology and analysis, and present the data and results discovered through this study.

Descriptive Data

The population of this study consists of teachers from twelve public middle schools and seven public high schools in two urban Midwestern cities. From this population, 17 public school teachers, in two public school districts, completed the first phase, the questionnaire, and were evaluated to be a participant in the second phase of the study. All invited participants were Caucasian. The invited participants ranged in age from under 25 years old to 50–59. There were three male and eleven female participants invited to complete phase two. Three invited participants had a bachelors degree, ten had a masters degree, and one had her doctoral degree. Participants years of service ranged from 1–2 years up to 20+ years, with some being new to the district and others having 20 years in the district.

The participants that agreed to participate in phase two of the study consisted of seven public school middle and secondary teachers (Table 1). The sample consisted of one male teacher and six female teachers. All participants were Caucasian.

Table 1

Demographic Data for the Participants

Teachers	*N* = 7	Percentage Breakdown
Race/Ethnicity		
Caucasian	7	100%
Gender		
Male	1	14%
Female	6	86%
Degree		
Bachelors	1	14%
Masters	5	72%
Doctoral	1	14%
Years Taught		
1–5	1	14%
6–10	3	43%
11–20	2	29%
20+	1	14%

Data Analysis Procedures

Yin (2014) stated that following the theoretical propositions that initially led to the study was one strategy for analyzing case study research. The propositions for the case study have shaped both the data collection, as well as the data analysis (Yin, 2014). The central proposition found within the literature review was that creativity could be viewed through the lens of four main facets: the person, the process, the product, and the environment (Beghetto & Kaufman, 2007; Kaufman & Beghetto, 2009, 2013). These concepts have provided the foundation for all sources of data collection, including the questionnaire and the protocols developed for the observations and the face-to-face interviews. The same propositions were utilized to analyze the data.

Before collecting the data, the researcher asked permission from all principals within two school districts to invite their teachers to participate. Out of the 19 middle and high school principals, five principals gave permission (see Appendix D and Appendix E). A letter with a link was sent to each principal to disseminate to his or her teachers (see Appendix H). The link to the questionnaire was open for two weeks. At the midpoint, a follow-up email was sent asking principals to remind teachers of the questionnaire window. After the questionnaire window closed, the researcher evaluated each questionnaire, finding the average for creative responses and traditional responses, and narrowed the participants to those that were identified as creative. Ten participants were emailed an invitation to participate, along with a detailed explanation of each component of phase two of the study (see Appendix G). Three middle and four secondary teachers agreed to participate in phase two of the study.

One district required parent consent (see Appendix J), and student assent forms (see Appendix K) for the researcher to be present and those forms were copied, and individual

envelopes for each participant with the number of forms requested were dropped off at each school's office for dissemination and collection by the teachers. The second school district, however, did not require permission forms and so initial dates were set with each teacher from that district for two classroom observations and two interviews. Upon completion of each observation and interview, data were transcribed using Express Scribe software. Each transcription was sent to the participant via email to be checked for mistakes. No mistakes were indicated, so no changes were made to the original transcription. The observation and interview transcript data was entered into NVivo.

Following the collection of all parent and student forms, dates were set for the other observations and interviews following the same protocol as above. Each teacher was observed on two occasions, and face-to-face interviews were held. The researcher emailed transcripts to each participant to check for accuracy, and once the participant confirmed Table 2.

Table 2

List of Codes (Direct Language)

Name	References
Changes in the approach to learning	120
Try new things	245
Stretch yourself	3
Different experience then other classes	155
Community of Trust	18
Risk Taking (Teacher)	63
Offer creative opportunities	154
Adapts lesson/learning	104
Students feel comfortable	204
Flexible	7
Reflective (Teacher on instruction)	59
Different ways to engage the learning process	318
Ask Questions of students	342
Admit don't know all the answers (Teacher)	220
Open to other ideas/ ways of teaching	180

Table 2 (cont.).

List of Codes (Direct Language)

Name	References
What is best for students	169
Open-ended learning experiences	53
Real life connections	12
Collaboration (Teachers)	75
Recognize individual students	165
Student choice/freedom	61
Engagement in learning	403
Risk taking (Students)	63
Ask Questions (Students)	342
Venture Answers	53
Different ways to show learning (product)	291
Curious/Wonder	155
Multiple answers	59
Struggle	12
Ok to fail/Make mistakes	488
New ideas/ Seeing things in a new way	310
Students do more than the teacher	243
Reflection (Student)	59
Thinking and Writing	291
Problem solving	90
Visual	8
Group/Cooperative Learning	99
Explore/Discover	8
Interactive notebooks	11
Up and Active/Moving	29
Hands-on	13
Standards/District Expectations	12
Step by Step/ Correct Answer	87
Time	63

He by to be accurate data was, data were entered into NVivo. All data collected was initially hand-coded using the participant's direct words to label groups of sentences or paragraphs. Participant's direct words were then used to create a general code list (Table 2). The general code list allowed the researcher to run queries using the NVivo software but allowed the researcher to recognize distinctions between words that may be viewed as similar. Such as the word reflection. The researcher used the term "reflective" to describe the teacher and the

word “reflection” when describing students. The difference allowed for the researcher to denote the difference between a teacher reflecting on the lesson and the student reflecting on his or her learning when coding using NVivo. These subtle difference allowed a more accurate analysis of the data when using the query function found within NVivo.

After the hand-coded list was added to NVivo, word frequency and thematic patterns were used to establish common themes. The themes were used to summarize an evaluation of each research question. The sources of data for each teacher were compared to substantiate the teacher’s perceptions concerning creativity. Each teacher’s observations and interview transcripts were compared to draw common perceptions from each teacher. Those individual responses were then analyzed for common themes found within all or most teachers, as well as commonalities between grade levels. Additionally, the researcher discussed specific observation examples and questionnaire results within the context of the face-to-face interview to allow teachers the opportunity to elaborate on his or her perceptions as they aligned to different creative measures. Teachers often referred to their own experiences and generated their own observed examples when answering questions during the face-to-face interview. The comparison of all sources of data allowed the researcher to triangulate the results and discover common perceptions of each teacher, as well as common perceptions of the teachers as a whole group. To prepare for the study the researcher field tested the questionnaire at a private middle/high school in the Midwest via Qualtrics, giving teachers one week to complete it. The researcher also took an online class offered by NVivo, made copies of all paperwork, and tested the recording devices.

Questionnaire field test. The researcher sent the original questionnaire to a small, private middle/high school in the Midwest. The field test site was made up of 11 middle and

high school teachers. Two of the teachers from the field site suggested changing the Likert Scale to 4 points to avoid neutral answers and changing the headings of the categories to make the language more reflective of the practices being measured. The categories of "always" and "frequently" were combined. The category of "sometimes" was changed to "often" and a new category "occasionally" was added. Finally, the categories of "rarely" and "never" were also combined. Additionally, they noted that it took less than 10 minutes to complete the questionnaire. One teacher suggested adding a line to the letter letting participants know that the questionnaire was accessible through a mobile device to increase participation and noted that completing the questionnaire by phone was easy and convenient. The updated questionnaire was then sent back to the teachers who provided feedback for confirmation of changes. The final draft (see Appendix B) was used for phase one of the study. The scores from the field test site were calculated based on the average answer of each teacher. Teachers were then asked, based on their perception and a list of traditional and creative approaches (also included in Appendix B) whether they perceived themselves as more traditional teachers or more creative. Their perceptions were compared to the questionnaire, and it was found that the questionnaire was reflective of their perceptions of teaching.

Questionnaire analysis. All participants who were invited to participate in phase two were utilized in the questionnaire analysis. In total, 11 questionnaires were analyzed. The questionnaire was considered from a holistic perspective and then broken down by several factors, including gender, grade level, and experience. An Excel sheet was created for each group and comparisons were made. Each question was tallied by responses and trends were noted on questions where all or most of the responses were "always/frequently" and "often." Additional notes when responses indicated a large number of "occasionally" or "rarely/never"

were used to consider changes in the definition of the creative classroom or creative classroom practices since the studies reflected in the literature review.

Holistically, the findings suggested that creativity was viewed as a classroom environment and part of the learning process. However, it is not common to find creativity in classroom assessment (see Table 3, Table 4, Table 5, and Table 6). The questionnaire indicated that a creative classroom is open and flexible. Teachers view themselves as mentors and motivators in the classroom and offer multiple perspectives and methods of learning. Teachers employ several different teaching techniques to enhance creative thought in the learning process. Students are encouraged to question already established knowledge and embrace ambiguity, or answers that may not be defined. Students are asked to use critical thinking and problem-solving skills to address real-world problems and investigate using "hands-on" learning. Teachers recognize that there may be several correct answers to the same question. Many teachers indicated that student choice and interest-based learning occurs in the classroom. Teachers also find ways to offer students immediate feedback. Finally, the physical arrangement of the room may be changed to fit the lesson that day.

Assessment measures, however, aligned more to traditional approaches. Traditional assessment practices, such as replication of content, teacher created grading tools, teacher established grading criteria, and end of the unit assessments were common. The researcher found creative responses to questions were encouraged. However, that was the only creative element found in assessment. A variety of materials being available to students was also indicated to have a higher response rate in creative assessment. However, that measure may have been better categorized under "creative environment" as the materials were not exclusively used for assessments.

When the results were analyzed by grade level, differences were minor, but the questionnaire did indicate some differences. Middle school teachers were more likely to have students work in cooperative groups, change the physical look of the classroom to suit learning, and connect learning to outside sources, such as books, movies, or current events. High school teachers were more likely to challenge students to question already established assumptions, in other words, question ideas or concepts that are accepted as relatively valid by modern society without proof.

The data also suggested a slight difference was found when comparing creative measures and a teacher's years of experience. Teachers with fewer than 10 years of experience perceive student-centered instruction as including students being able to tolerate ambiguity, meaning that students understand that some questions do not have a single correct answer or process to reaching the answer. Teachers with fewer than 10 years of experience also believe in providing immediate feedback to students. Teachers with more than 10 years of experience specified that they did not see students as being able to tolerate ambiguity, indicating that students often look for a single way to complete a task and believe that there is one correct answer to most questions. Teachers with more than 10 years of experience also allow students to determine the topics to be explored in class, whereas teachers with fewer years of experience prefer to choose the topics themselves.

Table 3

Questionnaire: Environment Responses

Questionnaire Statement	Always/ Frequently	Often	Occasionally	Rarely/ Never
Students work in cooperative groups.	44%	33%	22%	0%
The physical arrangement of the classroom changes to facilitate learning activities.	44%	44%	0%	0%
I serve as a mentor and motivator	89%	11%	0%	0%
Students in my class tolerate ambiguity without much trouble.	22%	44%	33%	0%
Students often provide answers that are beyond the conventional.	11%	56%	33%	0%
Students often connect my lessons to outside sources, such as other books, tv shows, world events, etc.	11%	67%	11%	11%
I offer various perspectives or methods when I teach.	89%	11%	0%	0%
I believe there are multiple correct answers to all problems.	44%	56%	0%	0%

Table 4

Questionnaire: Learning Process Responses

Questionnaire Statement	Always/Frequently	Often	Occasionally	Rarely/Never
Students make interest-based earning choices in my classroom.	11%	56%	33%	0%
Class activities are student centered.	44%	33%	22%	0%
“Hands-on” learning activities are provided for the student.	56%	44%	0%	0%
Students use critical thinking and problem-solving skills.	67%	33%	0%	0%
Students investigate real world problems in my classroom.	44%	44%	11%	0%
I provide immediate feedback to my students.	33%	56%	11%	0%
I often ask students to question already established assumptions.	56%	33%	11%	0%
I ask students what topics they would like to learn more about in my classroom.	11%	33%	44%	11%

Table 5

Questionnaire: Creative Assessment Responses

Questionnaire Statement	Always/Frequently	Often	Occasionally	Rarely/Never
Students produce videos, simulations, and/or role play in my classroom.	11%	44%	33%	11%
Students monitor their own learning.	0%	56%	33%	11%
Students create portfolios to demonstrate learning.	11%	11%	44%	33%
Student assessment is based on authentic activities (i.e. portfolios, labs, etc.)	11%	33%	44%	11%
Students determine the assessment tool (such as a choice of rubric, question, activity, menu, etc.)	0%	0%	56%	44%
Students create or come up with novel ideas or products.	11%	33%	33%	22%
A variety of materials and resources are available for student use.	67%	33%	0%	0%
Creative Responses to assignments are encouraged.	100%	0%	0%	0%

Table 6

Questionnaire: Traditional Assessment Responses

Questionnaire Statement	Always/Frequently	Often	Occasionally	Rarely/Never
Students are tested on the information presented in class only.	22%	44%	22%	11%
Students give singular interpretations of ideas or events.	0%	0%	56%	44%
Assessment occurs at the end of the learning unit.	22%	11%	33%	22%
I determine the grading criteria for the learning activities.	22%	44%	33%	0%
I determine the assessment tool for class activities.	33%	33%	33%	0%
Standardized and/or textbook written tests are utilized for assessments.	0%	22%	44%	44%
Tests and final exams are primarily used for end of term grade calculations.	0%	67%	11%	33%
Students replicate something I have modeled as a teacher.	0%	22%	67%	0%

Observation analysis. Observations were conducted to collect data concerning the classroom environment of each teacher. The observations were used to corroborate data found in the questionnaires and interviews. The observations allowed for the researcher to discern between teacher stated philosophy and observed teacher practices regarding creativity. Each participant was observed twice for approximately one hour using the Observational Protocol Sheet (see Appendix A), for a total of 14 hours. Approximately 8 pages of notes were taken for each teacher, with a total of 56 pages of notes. A common observation protocol was used to ensure that all participants were observed in the same manner and that similar creative elements were measured for each participant (Yin, 2014). The protocol sheet included handwritten field notes on room arrangement, time of day, and general classroom demographics (number of students present, number of adults present, the gender of those in the classroom). Four central facets of creativity, including the person, process, product, and environment, were marked if observed and specific examples were written by hand. Additionally, two types of thinking, convergent and divergent, were also marked and specific examples were written by hand.

Observations of each teacher were compared to both the questionnaire results and the interview transcripts to substantiate teacher's statements and philosophical ideas. Additionally, the researcher discussed specific observation examples within the context of the face-to-face interview to allow teachers the opportunity to elaborate on his or her teaching practices as they aligned to creative measures. Teachers often referred to their own observations during the lesson and generated their own observed examples when answering questions during the face-to-face interviews. Table 7 reflects the creative elements that were listed on the observational protocol sheet (see Appendix A) and the frequency of occurrence for each element.

Table 7

Observational Protocol Data

Description	Creative Facet	Occurrences
Distractions are minimal	Creative Environment	12
Elimination of fear, worry of failure, self-consciousness	Creative Environment	13
Emphasis on improvement rather than competition	Creative Environment	9
Materials and resources are available for student use at will	Creative Environment	11
Structured, not rigid	Creative Environment	12
Varied perspectives	Creative Environment	7
Supportive of original ideas and remarks	Creative Environment	9
Psychological safe environment (students venture answers without fear)	Creative Environment	13
Students are driven by intrinsic motivation	Creative Person	9
Students have several broad interests	Creative Person	3
Students are open to experiences	Creative Person	10
Student autonomy is evident	Creative Person	9
Balance between abilities and challenge is demonstrated	Creative Person	11
Students answers are beyond the conventional	Creative Person	6
Defines problems, questions assumptions, self-initiated projects, explore interests	Creative Person	5
Students tolerate ambiguity	Creative Process	10
Tasks offer clear goals but do not have a single way of reaching goal	Creative Process	11
Immediate feedback is provided	Creative Process	7
Students make many connections to topics outside the subject at hand	Creative Process	8
Invites experimentation or divergent thinking	Creative Process	5
Novel approaches to learning	Creative Process	8
Students create novel items	Creative Product	4
Students create several different items	Creative Product	4
Students do not replicate something the teacher did, construct something on their own	Creative Product	7
Multiple correct answers	Creative Product	5
Novel solutions	Creative Product	4

Observational data analysis. After each observation, the researcher typed the observational notes into a word document and uploaded the documents to NVivo. The observations were linked to both the individual participant and the grade level nodes. Each element on the protocol was already coded to one of four creative facets (person, process, product, environment) or way of thinking (convergent, divergent). For the purposes of coding

"divergent ways of thinking" were coded as "creative process." The use of the protocol ensured significance to the study by focusing the observation on elements of the class that had been previously accepted by the research community as "creative." After the observations had been coded using the four facets of creativity word frequency analysis was used to determine the most common creative elements observed in the classrooms. The researcher conducted three queries, one for a whole group, one for middle-level teachers, and one for high school teachers. Additionally, commonalities were explored by identifying the most common coding stripes for each participant.

Creative person. Observations in several classes support the development of a creative person. Intrinsic motivation, broad interests, openness to experiences, and autonomy are all common elements found within creative people (Beghetto & Kaufman, 2013; Fisher, 2013; Starko, 2013). The classroom observations included occurrences of intrinsic motivation, students being open to new experiences, and student autonomy. Teacher 6 sets aside 15 minutes a class period for students to read a book of their choosing. Teacher 6 also allowed them to move around the room and choose where they read. Some students sat on the floor, others sat in rocking chairs, some laid down on a fluffy rug, and a few sat in beanbag chairs.

Teacher 5 had various math problems posted around the classroom. Students moved around to each problem and worked at their own pace. They also were able to correct their own answers and were able to go back to the problems they missed to make corrections. Teacher 5 was observed to say, "I am not going to tell you what the answer is or where you made a mistake because you are all capable of answering those questions yourselves."

Teacher 3 offered students various options for completing the final for the semester. She offered them the opportunity to either conduct an interview with a person who works in the field

of law or law enforcement and write a paper or participate in a mock trial. Students voted and decided to do the mock trial. Students immediately started asking questions about how the mock trial would look. Teacher 3 described the various roles and responsibilities and told the class she would present them with the case, next class. She told them to start considering which role they would want to play. Students were open to many roles and were already verbalizing which role they most wanted. Two students discussed their individual personalities concerning the roles. One student stated he was quieter and did not want a role that requires much talking, but he was open to anything that would involve planning or research.

Teacher 2 encouraged students to discuss their thoughts on something worth waiting in line for. Students were quiet at first, but when he offered examples, such a music tickets or a good deal on a TV, they started to discuss their ideas. The discussions went in several different directions and allowed students to discuss their individual interests and quantify their worth through an economics lens. Teacher 2 then segued the discussion into the economic lesson on supply and demand. Students often made personal connections and offered examples as the lesson continued. Some students even changed their responses and decided they would not wait longer than a certain amount of time for any item, except possibly a large sum of money.

Creative process. For this study Csikszentmihalyi's (2008) Flow Model was utilized to represent the factors associated with the creative process. The Flow Model signifies a person is most productive when in a state of flow. Flow is achieved when the skill level of the person and the challenge of the task are in line in such a way that both boredom and anxiety are absent. For flow to occur, clear goals and objectives for the task are communicated. Individual approaches, with a balance between ability levels and elimination of fear or worry, are also needed to create a state of flow. Finally, immediate feedback is offered so the task can continue to completion.

Several attributes common to the flow model were observed in the classroom. Teacher 7 offered clear goals for an argumentative paper the students would be writing for their end of term final. She used a rubric that aligned to the six traits of writing and offered a clear understanding of what was required to reach each level, four being the highest. Students were encouraged to approach the writing from an individual point of view. For example, one student who self-identified as Native discussed wanting to discuss the protest of the pipeline from the perspective of his heritage. He added that he was going to discuss other atrocities faced by Native people throughout the history of United States. Teacher 7 also discussed the Black Lives Matter movement with two other students, with one student comparing it to Brown Lives Matter and Blue Lives Matter. Students shared ideas openly, both with the class and in small groupings. As students worked on planning, writing, and discussing the bell rang, and everyone was frantically gathering their materials to go to his or her next class. Both the students and Teacher 7 were unaware of the time and were focused on the task at hand.

Teacher 6 gave students an assessment during the second observation, and some students were observed to be anxious as they continued to ask if they "were right" while answering questions. Teacher 6 stated with the assessment they would "either be right or learn from being wrong" which changed the atmosphere of the classroom. The student became quiet and continued with the assessment until they finished. Students finished at different rates and moved into free reading once they completed the assessment.

Teacher 4 asked students to create a "flip grid" video about how to solve a math problem. Each student was given a math problem to solve and used Chromebooks to create a 3-minute video. The math problems were different levels, with some being one step and some being multi-step. Teacher 4 stated during her interview that she chose specific problems for certain

students to balance their abilities with the assignment. She wanted the students "to feel confident" while creating the video. She also announced that the videos would be used to help teach other students. The students had clear goals and entered the state of flow when they went in different parts of the classroom to create their videos.

Both Teacher 4 and Teacher 1 walked around the classroom to check individual answers on math problems and offered specific and immediate feedback to students. Teacher 2 also provided immediate feedback as he asked questions during a presentation, had students venture answers in small groups, and then presented them with the correct answer after the small group discussions.

The researcher observed Teacher 5 offered many ways to self-assess during the two observations. Students work often had riddles at the end of their assignments and to solve the riddle the students needed the correct answers to the math problems to obtain the correct letter order. Additionally, she had interactive notebooks where students took "process notes" and were able to refer to those notes in evaluating their process in math. Finally, she had student experts who had mastered the problems and were able to assist others in which step to look at again.

Creative product. Creative products are actual items created, produced, or published, and have been accepted within the social and historical culture of society at that time as being creative (Beghetto & Kaufman 2007, 2013). In education, the creative product is what is produced by the student as a final product (Beghetto & Kaufman, 2013). In some classrooms, this was defined by an essay, in others a test, in others a project. More individual perceptions of a creative product were discussed during the interviews, but most classrooms had a standard product that was due at the completion of the unit. Teacher 3 required all students participate in an activity called Philosopher Chairs. This activity required students to take a turn speaking to

the class about the death penalty. All students stepped forward and ventured very different points of view, with some of the quieter students at the start of class speaking the longest. Additionally, Teacher 3 offered several different ways to complete a final product for her classroom. She was the only teacher to offer different products, with students completing different finished products, from papers to PowerPoint presentations to speeches.

Teachers 1, 2, 4 and 5 all discussed a final assessment. In each of these classes, students were given study guides, with practice problems to try to prepare for the final assessment. Teachers 1 and 4 both mention they are preparing students for what they will see on standardized tests. Teacher 1 mentions the ACT specifically.

Teacher 6 discussed the final project encompassing a display box that will feature symbolic representations of ten themes found in the book they read as a class. All students are using shoe boxes, but the medium they are using to represent their themes is different. Some students are using play dough or clay, while others use actual items, such as cars. Some cut out things using construction paper and glue together the pieces to make different items. All them will have a shoe box display in the end, but the boxes will look different, and each student is permitted to approach the look of their box individually.

Teacher 7 provided a rubric and discussed the final paper that the students will turn in. All students will need to complete a 5–7-page paper discussing the topic "Protest and the Frist Amendment." For this product, the papers will all look similar and will be expected to utilized standard written, academic language and structure; however, the topics may be significantly different.

Creative environment. A creative learning environment is supportive of exploration, values originality, and is permissive of individual expression of ideas (Aish, 2014; Bronson &

Merryman, 2010; Rinkevich, 2014). While these elements were identified during the observation process, they were more difficult to observe as the researcher had to make assumptions about student's feelings toward the classroom environment and the establishment of the classroom culture set by the teacher at the start of the year. Teacher 1, Teacher 2, Teacher 4, and Teacher 5 all engaged with every student in their classroom one-on-one during the class period. During both Teacher 3's literature class and Teacher 1's math class students put their phones in their pockets, and they remained away for the duration of the class. However, in classes where whole group, direct instruction was utilized the students would often be distracted by their phones or the person sitting next to them. In both Teacher 7's English class and Teacher 2's Economics class when the instruction was teacher-centered, students often looked at their phones, rather than follow along with the lesson. While students were quiet during this time, they often had followed up with questions to the assignment that came after the lesson.

Teacher 3 and Teacher 7 both discussed respect and communication at the start of each class. Teacher 3 offered specific examples of positive, respectful communication and mentions that the content of the class will be controversial. She also stated she will "play devil's advocate" during the class period and students "should not be put off" when asked questions about their responses. The classroom environment in both classes prompted discussions about controversial topics but did so in a way that students shared ideas and beliefs calmly and transparently. Several students in both classes disagreed with each other and used material they had read in class to support their point of view.

Teacher 2 has a very relational philosophy as he begins each class with a discussion of his personal life and day and asks students about their interests and day. He shared with the students how his 9-month-old baby is doing and discussed his wife's job interview. Some

students asked about a football game, and several others joined in with their thoughts on the game. This casual discussion promoted a relaxes atmosphere and students laughed and smiled throughout the discussion. After about 10 minutes he began the lesson for the day but segued into a discussion about what would be a reason they would be willing to wait in line. The transition between personal discussion and class was natural, and students shifted gears naturally into class.

Individual interviews analysis. Each participant was interviewed twice for approximately 30 minutes. The first interview consisted of nine established questions pertaining to the central research questions (see Appendix I). The second interview consisted of seven established questions pertaining to both the first observations and interviews, as well as questionnaire results (see Appendix J). The interviews also allowed participant-led discussion and elaboration concerning creativity in the classroom. Each interview was recorded using two recording devices. Following the interviews, each recording was transcribed using Express Scribe Software. Final transcripts were emailed to the participant to allow check for accuracy. All participants approved the transcripts without changes. Each interview was transcribed, checked for accuracy, printed, and entered NVivo.

Initially, the researcher carefully read through each transcript from all interviews. The researcher read through both interviews of each participant before reading the next participant. Reading all transcripts for each participant allowed the researcher to develop an overall understanding of each participant and determine ideas that connected to the four creative facets that act as the theoretical proposition for this study. After the initial reading, the researcher's hand-coded the printed copies of the transcript using the participant's direct words to label phrases or sentences. Common words and phrases emerged from the participant's direct words

and were used to create a general code list (Table 2). Both the transcripts and the general code list were added to NVivo to prepare for software coding. Each transcript was linked to both the participant and the grade level nodes.

While using the NVivo software, the researcher coded each transcript using the general code list. The researcher utilized color-coded stripes to signify like codes, for example, "changes in approach to learning" and "adapts lesson/learning" were given the same color stripe. These color stripes were then used to form categories and evaluate patterns. The patterns were analyzed across all transcripts and themes began to emerge. The themes were used to summarize an evaluation of each research question. The three themes were as follows: a creative classroom environment allowed for mistakes; encouraged students to ask questions and venture answers; and offered several different ways to engage in the learning process. Furthermore, three themes emerged concerning student achievement in a creative classroom, including student engagement is necessary for learning; new ideas and detours of curiosity are embraced; and thinking, writing, and visuals are all components of student work in a creative classroom.

Interview one. The first interview (see Appendix L) consisted of nine questions. The first question asked: how would you define creativity? Teachers 1, 3, 5, and 7 stated that creativity "looks different" in some way. Teacher 1 suggested creativity could be "the method by which they approach a problem" and Teacher 7 stated it was "a different way of thinking." Another phrase that frequently appeared throughout the discussions is "outside the box." Teachers 1, 4, 5, 6, and 7 used the term "outside the box" to define creative. "Creativity is struggling too" stated Teacher 5. Teacher 1, 3, 4, and 7 stated that they believe people see creativity as artistic. However, creativity can be found in areas such as math in science in the

way that students approach problems or their willingness to try new things. Teacher 2 noted that being creative was "risky" because as a teacher the outcome may not be apparent.

Question two asked: How do you view creativity within your subject area? At your grade level? Teachers noted terms such as discovery or investigate. Teacher 6, Teacher 5, and Teacher 4 noted that in their district the principal allows them to approach the classroom in any manner they see fit. They have state standards to adhere to but do not have a formal curriculum. Teacher 6 stated, " you can really make it as creative as you want." Conversely, both Teacher 3, Teacher 1, and Teacher 7 noted the limitations of the creativity in their classrooms due to the district required a curriculum. Teacher 3 stated, " In a way, we are restricted by what we're called to teach." Teacher 1 also noted the limitations in that she is not permitted to write her summative assessments and is required to use the districts written assessments.

Question three states: How does creativity differ at your grade level from another grade level? This question brought to light the perceptions of middle school and high school teachers regarding creativity in other grade levels. Six teachers stated that elementary and young students, those in preschool or pre-K, had more opportunities to be creative. It was their perception that since younger students were not preparing for college or career, they had more time to play. Teacher 5 stated, "we allow for a lot more creativity [in the younger grades], and somewhere along the way we start to kind of, I don't know, something happens, but by the time you get in high school there doesn't seem to be as much then." Teacher 2 noted that freedom is a big difference. Older kids need to prepare for life, and therefore the freedom to play or have fun is limited by the need to teach the curriculum. He stated, "It is kind of an odd balance to try to maintain." Teacher 3 stated that a "play day here in class that would be frowned upon greatly by the administration." Teacher 6 did note, from the perspective a parent to an elementary child that

she felt creativity was lacking in younger grades and that her son comes home with "a million worksheets." She stated, "the biggest stifling roadblock for creativity is when a teacher feels like they have to follow a curriculum, like a textbook, and unfortunately I feel like most elementary schools are very curriculum driven by textbook companies."

Question four states: can you explain how you utilize creativity within your classroom? Teachers referenced changing up activities and learning styles frequently. Engaging students in stimulating topics, student choice, and different student groupings were noted. Both Teacher 6 and Teacher 3 discussed their unconventional paths to teaching as being influential in how creativity played out in their classrooms. Teacher 3, who had been an attorney, discussed her lesson planning being "selfish" in that she does things she likes and feels that "if I am invigorated and excited they will be too." Teacher 6, who had worked in both advertising and business, noted that in both her previous jobs she had to approach problems using different objects. This prior experience is why she gives students access to play dough, pipe cleaners, and other art supplies to give them things to play with as they work through new ideas in language arts. Teacher 5, Teacher 4, and Teacher 2 discussed "getting kids up and moving." Teacher 4 specifically noted the changing in groupings each class.

Question five asked: How do you believe a creative environment is established? Teachers stated that a trusting environment in which students feel comfortable is needed to establish a creative environment. Being able to "take risks" was noted by teachers as well. Teacher 7 said, "having a trusting relationship with the people around you is really important." Teacher 4 described the creative environment as "organized chaos" and discussed how expectations and rules are established in the environment. The establishment of group norms is needed for students to build trust, take risks, and feel safe. Teacher 2 did state, "some classes

just don't have the personality that allows for a creative environment." He noted that if students are already distrusting of each other and or the content creativity may need to be done through individual assignments or approaches to learning. Teacher 1 also noted that prior experience with math classes have made her students distrustful of the subject and have a harder time with approaching problems creatively. Teacher 5, a middle school math teacher, also noted that students look for the "right answer" and that can make them reluctant to risk getting it wrong to try a different approach. However, both noted with time trust could be established, and a creative environment may be established.

Questions six and seven elicited similar responses from participants, asking: What are common characteristics of creative students? How do you see creative practices and an environment influence students' academics, if at all? What do you believe is evidence of creative thought? Is encouraging creative thought difficult or easy in your subject area? Teachers perceive creative students as people who will ask questions, risk answers, and are willing to make mistakes. Teacher 3 noted that creative students are "exceedingly deep thinkers." Teacher 7 and Teacher 2 also noted intelligence as a quality of creative students, but both mentioned that it might not be intelligence in a conventional way. Academic achievement and creativity were not necessarily viewed as being related. However it was noted that in a creative environment, creative students would flourish, and that includes academic achievement. Overall, creative students are perceived as a product of a creative environment. The more willing teachers are to be open to unconventional answers and questions, the more creative the students will be, and these elements work together to increase student academic performance.

The final question, question eight, stated: How does creativity impact learning and student achievement? Teachers discussed the need for students to be an active part of the

learning process and there is a need to construct their own learning if it is going to be long-term learning. Teacher 1 noted that teachers need to approach learning in different and creative ways to reach all learners. Student achievement happens when students have opportunities to open their minds and try things in new and different ways. Teacher 5 mentioned allowing for students to struggle in order to learn. She said, "allow a student to do more the learning, to do the struggling, and they learn more from mistakes." Teacher 1, Teacher 5, and Teacher 4 discussed how learning happens in understanding the "how" and the "why." They each discussed learning and achievement are impacted when students struggle through the process and arrive at an answer. Teacher 7 said that creativity is "one of the only things that create authentic learning." She stated, "rote memorization or listening to the teacher talk" does not produce long-term learning. Teacher 3 substantiated that idea when she stated, "I don't want [students] to parrot what I am thinking, I want them to have their own thought."

Interview two. The second interview (see Appendix M) consisted of five questions and were asked as follow-up questions to both the questionnaire, as well as questions asked in the first interview. The first and second questions asked: Does creativity have a place in assessment? What does creative assessment look like? Four teachers indicated that creativity does have a place in assessment. However, none of them could provide an example of what that would look like. Teacher 2 noted that he is always looking for ways to be creative in assessment, such as having them create a project then take a test. However, time is a continual problem for this type of assessment. Teacher 4 and Teacher 1 both base assessments on student experiences with state testing and the need to prepare them for that type of test to explain why they assess the way they do. Teacher 5 also stated, "There's not a creative assessment that you can use for every concept" and therefore a creative assessment would be impossible to use. Teacher 3 stated

creativity itself is not measurable and therein lies the problem. Teacher 3 asked, "A student could come up with something fantastically creative, but has nothing to do with what your goal was and so how do you assess that?" Overall, the nature of assessing state standards and preparing students for standardized tests both remove the perceived creative element from assessment.

Questions three and four asked: What are common characteristics of a creative classroom? What are common characteristics of a creative teacher? The most common characteristics of both a creative classroom and a creative teacher are reflective, flexible, collaborative, open-minded, authentic, and student-centered. Teacher 3 explained a creative teacher as "a fearless teacher show creates a community where the kids trust the teacher enough to take a risk and do something that's outside of the box." Both Teacher 7 and Teacher 2 discussed being able to talk to other teachers and generate ideas for lessons, classroom management, and student engagement. Teacher 3 noted going to conferences to "pick up nuggets" that she can take back to her classroom and tweak and use in the classroom. The teachers also discuss reflecting continuously on lessons and learning. Assessment results do not drive instruction, but they are a part of the puzzle. The other pieces include student engagement and asking questions that are open-ended. Teacher 2 said, "creative [teacher] are always evaluating what they are doing." Finally, teachers discussed that in a creative classroom the students do more work than the teacher. However, both Teacher 5 and Teacher 3 note that a lot goes on behind the scenes to create a student-centered classroom. "It is a lot of front-loading on my end" describes Teacher 3.

Question five asked: What are some teaching strategies that you employ that challenges kids to think "outside the box"? The biggest element that goes into getting students to think

outside the box is the use of questioning. Teachers noted that questioning, and specifically how a teacher phrases the questions they ask is key to pushing thinking and learning. Teacher 2 and Teacher 4 both said that questions should be open-ended and well phrased. Teacher 6 noted asked rhetorical questions, and Teacher 7 stated, "If you have questions where you don't have an intended answer for then it's a lot easier to give students time [to think] because you're thinking about it yourself." Additionally, offering students time to reflect and write before answering questions was noted. Teacher 7, Teacher 3, Teacher 2, and Teacher 6 discussed offering student time to explore their own thinking before sharing with the group. Teacher 3 described "silent conversations" where students walk around the room and write either initial responses to the questions or, after she reads, the response and students can then go back and add additional responses. Teacher 5 and Teacher 2 also note that students need to time to explore a topic before the teacher gives them their side of the information. Teacher 1 also added that before she tells students if they are correct, she asks them to explain their answers. Another commonality was allowing students time to struggle. Teacher 2 said, "Learning something new is tough, and students are going to struggle, and we just need to let them. That's when learning happens."

Presentation of Data and Results

The research questions were answered using three measures: a questionnaire, classroom observations, and one-on-one interviews. Each measure was coded and evaluated for common themes. The questionnaire, observations, and interviews were analyzed and coded to determine teacher perceptions from the theoretical proposition of four creative factors discussed in the literature review. The researcher used a general code list, as well as color coding stripes to signify like codes, for example, "changes in approach to learning" and "adapts lesson/learning" were given the same color stripe. These color-coded stripes were then used to form categories

and evaluate patterns. The researcher analyzed patterns across all data measures, and overall themes emerged. The themes were used to summarize an evaluation of each research question.

The two central research questions were:

R_1: How do teachers perceive a creative learning environment in the middle and secondary classroom?

R_2: How do middle and secondary school teachers perceive the use of creative learning strategies affecting student achievement?

Question one. How do teachers perceive a creative learning environment in the middle and secondary classroom? Two central themes emerged that were relevant to the first research question. First, a creative environment is one in which student feel safe and trust the people in the classroom, especially the teacher. Second, students are recognized for their individual needs, learning preferences, and abilities. These themes will be discussed to demonstrate how teachers perceive a creative environment in a middle and secondary classroom.

Central theme 1: Community of trust. A trusting environment, in which students feel comfortable, is needed to establish a creative environment. Teacher 7 stated,

> I think it is very difficult for students to be creative in an environment where they don't feel safe and welcomed. So, I think teachers or in any environment, but having a trusting relationship with the people around you is really important.

Teacher 3 corroborated this by saying,

> I think you have to have a fearless teacher who creates a community where the kids trust the teacher enough to take a risk and do something that's outside of the box. And if the teacher and the students have a good enough relationship and can establish that as a whole class that is when you can see what's developing creativity. I think that teachers

who put on their teacher persona on and then go in and are not authentic people, I don't know if they could develop a truly creative classroom because there is no trust.

A trusting environment is one in which the rules and the expectations are clearly defined and understood. While creativity can be seen as "outside the box," several teachers perceived that there are still rules and expectations. Teacher 4 stated:

> I think, first of all, it is important is to set ground rules and expectations of your classroom, and once kids understand your expectations, then they understand your limits. You have to be willing to let there be some organized chaos in order for [trust] to be established. I think it all comes with having expectations you set for your kids when you are developing your classroom at the beginning of the year.

Conversely, Teacher 2 stated, "some classes just don't have the personality that allows for a creative environment." He noted that if students already distrust each other, the classroom subject creativity may not work. Teacher 1 also noted that prior experience with math classes have made her students distrustful of the subject and they may have a harder time with creatively approaching problems. She stated:

> I think [trust] is difficult in math. I only say that because I'm in high school and I have never taught elementary or middle school, but since they are ninth graders and tenth graders, they do have eight years or nine years of past math that have impacted how they see math and a lot of students have experienced, 'my teacher said I have to do it this way, and I'm going to get it wrong if I don't do it the exact same way my teacher does it.' So, trying to get them out of that habit and to think openly about math and how there are many ways to show math, you can have a picture, you can have it in writing, you can have it in symbols, and they all mean the same thing. This person could do step one like

this, but then you do step one like this, and you can still end up with the same result. That's very hard right now at high school in my opinion.

Teacher 1, Teacher 2, Teacher 3, and Teacher 5 discussed needing to help students take risks and eliminate the fear of getting the wrong answer. Teacher 3 stated:

> [Students] are so ingrained, they all want to give you the right answer. They don't want to take a risk, and so I keep saying "take a risk." I will reward you for taking a risk. It doesn't matter if your right or not, I will reward you for taking the risk. But they are not comfortable with that because I think in too many classes there is a right answer and wrong answer. And that's with AP classes. I do teach strugglers; the second semester I will teach a class of tenth graders that failed first semester English. The strugglers will meet me in taking a risk because they are not invested in the grade, but I have to spend more time having them invest in me and trust in me so that they will take that risk, so again it goes to that whole community that you can create if they trust you then they are willing to engage in that creative risk.

In an environment where students trust the teacher and the other students, they feel more comfortable to take risks, ask questions, and venture answers. Teacher 5 discussed the freedom kids feel when they feel comfortable to find new ways of approaching a math problem. She said:

> I've seen that something like if kids come up with new ideas or things I haven't even thought about. I tend to think more structure and more step by step, and sometimes they come up with new methods, maybe not a new method, but a different approach. Or just new ideas or ways that we can approach things. There is also a willingness [on the part of the student] to try if they don't know something. Keep asking questions. It's okay if I fail, I'm going to get there eventually. I think students in creative classrooms are willing

to keep at it instead of saying ‘okay, I don't know how to do this, so I 'm not going to try it.’ They are willing to take more chances.

Central theme 2: Recognition of students as individuals. Recognizing each student’s individual needs, learning preferences, and abilities was a central perception in a creative learning environment. Changing the approach to learning or adapting learning to recognize the individual student were commonly observed, as well as discussed by the participants. Teacher 1 stated:

> So, I feel as though creativity would be not teaching students one way of doing something. So that they have a variety of tools in their tool belt to accomplish a problem. I also view it as a way to make lessons unique to your class or students. Even if I teach geometry every single year, my lessons don't stay the same because I need to choose activities, choose engaging lessons to reach all my students, so every year those are different students, so the creativity is the ability to be flexible in your subject area and to not always be the same.

Allowing “student choice” was a common phrase found in all measures. Teacher 6 demonstrated student choice when she allowed students to choose the book they read for free reading. A formal assignment does not follow the reading. Therefore, students read strictly for enjoyment and based on individual interests. Additionally, she allowed students to “play” in her classroom and to “discover” learning through different choices in “hands-on mediums.” Teacher 6 stated:

> I have a weird past, my undergraduate degree was in advertising and marketing, so I think I kind of go that creative path just generally. Just by nature. Then, I went into business for a while, I have a master's in business, and then I went into teaching. I just

try to take my prior life experience, like the advertising, the graphics, the creativity, the creation pieces and try to bring it into the classroom.

It was her previous work in both advertising and business which led to her giving students access to play dough, pipe cleaners, and other art supplies to give them objects to manipulate as they work through new ideas in language arts. When students were learning new vocabulary words, she asked them to represent that word in some fashion. Students did this in different ways, from sculpting something to drawing something to writing something.

Teachers referenced changing up activities and recognizing learning styles frequently. Engaging students in stimulating topics, student choice, and different student groupings were noted. Teacher 3 stated:

> I just try to mix up what I do. I don't want them to come in and have the same thing every day. I want them to hear different voices; I want them to gauge in different ways. I don't want it to be so routinized that it just becomes stifling. I worked with a guy who made all his copies for the entire year at the beginning of the year and kept them in his filing cabinet and just whipped them out. I don't understand that; I would think that it would be extremely boring for the teacher and even more deadly boring for the kids. So, if I can try to keep up with the trends, then I can make things interesting for the kids and try expanding beyond what we have always done.

When discussing learning styles Teacher 7 stated:

> I think trying to modify, not necessarily day by day, but over the course of short periods of time- like a few days- giving them different activities so that they are learning in different ways. You know I think a lot of times, I need to have something that's kinesthetic and visual, and audio all in one class period and I think that’s too much, but if

you give those different activities over the course of a few days you are appealing to different kids' learning styles, your stretching the kids who don't quite fit inside the box and that encourages them to be creative in different ways depending on what they are doing and how they are learning.

Overall, in creative classrooms, teacher perceive the students as being central to all classroom decisions. Teacher 2 stated:

I would say it is providing students the opportunity to control their grade through a variety of learning opportunities, multiple ways to show a student has learned, meeting them where they're at. On the top of everything, it seems to me that you as a teacher decides on activities that may not be the easiest for you to do but are going to be the most beneficial to the individual students.

Additionally, Teacher 1 corroborated this by stating:

It just goes back to each student is different. If you teach the same exact way, and you never change how you teach, and you never change how you explain, you never change your instruction strategies, that's only going to work for the students that [strategy] works for, but that's not going to work for all of the students. I am positive that you have to have variety and you have to have opportunities for them to open their mind and see different ways of learning. To be able to reach all students and for all students to be able to learn.

Question two: How do middle and secondary school teachers perceive the use of creative learning strategies affecting student achievement? In evaluating all data measures, it is evident that creativity was viewed as a part of the learning process and viewed as positively impacting student achievement. The major themes that emerged concerning student achievement

in a creative classroom included: student achievement is improved when tasks offered clear goals but allowed for individual approaches to the learning and when students are allowed time to try new things or struggle with new learning.

Central theme 1: Clear goals, individual approach. Creative classrooms see gains in student achievement due to the opportunities students must experience learning in many different ways. Students are taught to examine things from multiple perspectives, and this builds their decisions in how to best approach a common assignment or assessment. Teacher 6 discussed the need to establish lesson objectives, but also to allow students to take their own approach to mastering those objectives. She asked all students to create a representation of a common book, and she offered them a rubric which clarified minimum expectations, but the way they go about developing this representation is entirely their own. She stated:

> To me, it means that the students are constructing their learning using tools and ideas that are relevant and meaningful to them. If students are passionate about what they are doing and can adapt content to their interests, they won't forget, and true learning magic will happen.

The response of Teacher 7 supported the same idea with clear objectives of a common paper, with the district writing goals at the forefront of the learning experience, but the approach that each student takes and the content they chose to include in their paper is completely their own. She said:

> I think sometimes it's better to provide just a simplistic framework and then let the kids be in charge of the learning. Because they end up coming up with way cooler things then we could ever be like prescribing for them. But that way I'm not saying you have to do it this specific way to be successful.

Additionally, Teacher 1 has emphasized that part of learning to find different paths to the final product is modeled by the teacher. She discussed many students only know one way to solve a problem, but if you show them there are more ways to solve it, then they begin to see learning as multifaceted. She emphasizes that students do better on standardized tests and other assessment measures if they learn to see problems as having more than one path to the solution. She stated:

> First, try not to do the same instructional strategy every single day. So, meaning like sit down and take notes, now do this worksheet. Every day they can expect a different opportunity to learn in a different way to learn. I try to show many different ways of how to solve a problem. Or how to think about a problem. I do use a lot of visuals, and I do try to use instructional strategies that might require the students to get up and move.

Central theme 2: Time to try new things and time to struggle. Several teachers perceive the opportunity students have to try new approaches to learning, as well as opportunities to struggle with learning as positively impacting student achievement. Teacher 5 stated:

> I think student learning increases when you allow a student to do more of the learning, to do the struggling, and they learn more from mistakes. They learn from there discovery or even teaching it to another kid, going over it. Which increase their own achievement because they are going to end up getting better. If they can explain, not just step by step, but where it's coming from then they're going to have a higher achievement. Even if it's a different kind of problem, but if they learn how to think they can approach different kinds of problems. Because you can't do every possible problem, but if they can learn how to think and create, solve, then they could address just about anything.

Teacher 4 also perceives struggling and try new things as being central to student academic achievement. She said:

> I think [creativity] impacts student's achievement because you are trying to foster different ways that students can learn and generate different ways to learn things and represent things and that can push it into a higher level of thinking. Raises the Bloom's Taxonomy and it just makes mastery easier, rather than memorizing a method you are learning it several ways to really understand it. Conceptual understanding rather than memorization.

Being able to get students to move out of the mindset of "one right way" to do something is perceived to increase student achievement on measures that are both creative and those that are more traditional. However, time must be devoted to the classroom to break this mindset.

Summary

This qualitative case study was able to explore teacher perceptions concerning a creative learning environment and the effects of creativity on student academic achievement. In understanding the teacher perceptions of creativity at the middle and secondary level, this study was able to begin to identify how creativity is being recognized and utilized in a post-NCLB education era. This chapter demonstrated the findings as they related to each research question. Data was collected using a questionnaire, observations, and interviews of seven middle and high school teachers. The data was analyzed using the theoretical propositions discovered in the review of the literature. Direct word coding was used to establish a list of common codes, which were then used to develop the central themes.

Each set of data produced overall common themes that were then used to develop the final two central themes. The questionnaire found that creativity is perceived in both the

learning environment and the learning process but is not found in assessment. The observations found that a creative learning environment is psychologically safe; structured, but not rigid; and has minimal distractions. Creativity was perceived as increasing academic achievement when clear goals are established, yet individual approaches and abilities are considered. The interviews further substantiated the observations by finding that a creative environment allows for mistakes and questions, as well as new ideas to be embraced. Additionally, the interviews highlighted again the student engagement in the learning process, done so through differentiating learning to individual needs is perceived to increase student academic achievement. In summation, a creative environment is established through recognition of individual differences and in trust built in the classroom community. The perception of academic achievement is increased when students are allowed to find their own path to the answer, given time to try new things and struggle with learning new concepts.

Some limitations found during the data analysis may have affected the interpretation of the results. The demographics of the participants were not equally represented in terms of race and gender. All participants were Caucasian and most of the participants were women. This disproportion in the participants may have resulted in an over-representation of some groups of the findings that were reported. Additionally, participants in this study taught math, economics, and English. Given that not all subject areas are represented in this study, the results are reflective of teachers who teach those courses. This chapter discussed the results of the study, with chapter 5 providing conclusions and recommendations for further study.

Chapter 5: Summary, Conclusions, and Recommendations

Introduction

The primary pedagogy of many educational systems center on the memorization of facts, repetitive drills, common assessments, and moving everyone through at the same pace (Senge et al., 2012). However, these practices do not prepare individuals to effectively be a part of the technologically-based, globalized world in which society now functions. People in both college and careers are no longer asked to simply evaluate data or take part in routine work but instead are asked to use creative, innovative thinking in various types of work (Robinson, 2011). Torrance (1965) noted that creativity could be developed if teachers were to encourage different ways of thinking and value a student's individuality. When students are given time to experience autonomy in the classroom, creativity flourishes, and a skill set better suited to modern society is developed (Csikszentmihalyi, 1996; Gardner, 2007; Torrance, 1976).

This qualitative case study was developed to evaluate the perceptions of teachers at the middle and secondary levels of education. These levels are viewed as the final steps before young adults take their place in society, it is crucial to understand the role of creativity, if any, on academic achievement and skill development. Creativity, and how it is fostered, is central to developing these college and career readiness skills. This study intended to answer the following research questions: (a) How do teachers perceive a creative learning environment in the middle and secondary classroom? and (b) How do middle and secondary school teachers perceive the use of creative learning strategies affecting student achievement? This study included a questionnaire, participant observations, and participant interviews. This study contributed to the body of knowledge necessary to address this problem by revealing the perceptions of middle and

secondary teachers regarding creativity and the effects on student academic performance and skill development.

This chapter contains a detailed discussion concerning the findings of creativity in the classroom as it relates to the known literature, as well as recognizing the educational pedagogical shifts since the literature was last updated. The discussion focuses on the contribution of the findings to the literature in the academic field. Additionally, the chapter contains the conclusion of the study and how these conclusions could influence professional practice of middle and secondary teachers. Furthermore, this chapter provides the limitations of the study, along with the practical and future implications. Finally, the researcher also discusses recommendations for future research, as well as for the effective practice of using creative methods in the middle and secondary classroom to develop skills needed for college and career success.

Summary of the Study

Studies show that creativity in the classroom has been demonstrated to help build learners that conduct investigations, encounter new learnings, and pose more questions (Aish, 2014; Bruner, 1996; Fisher, 2014; Rinkevich, 2014; Torrance, 1976). These learners offer practical solutions to problem-solving and carry their knowledge from the classroom to their real life (Duke, 2011). This study focused on exploring the perception of teachers on creativity in the middle and secondary classroom and its potential effect on student academic achievement. The overall purpose of the study was to add much needed qualitative data to the middle and secondary teaching experience. The researcher sought to provide school leaders and policymakers with the strong foundation to implement more creative approaches to learning and build students for the world in which they will move into upon completion of secondary education.

This study was conducted using a social constructivism framework which allowed use of individual points of view to examine creativity and the effect of it on the classroom environment and student achievement. The use of the social constructivist framework allowed for both the recognition of the individual experiences, as well as recognition of the knowledge that each participant contributes to the overall classroom learning experience (Fricke, 2015). For this study seven middle and high school public school teachers from two different districts agreed to participate in the study. All participants were chosen based on their responses to a researcher written questionnaire (see Appendix B). An average creative and average score were determined for each section and then for the questionnaire overall. Teachers who reflected a higher creative average were invited to participate in the second part of the qualitative study.

The second part of the study consisted of two 1-hour long classroom observations and two 30-minute face-to-face interviews. The observations were coded to one of four creative facets (person, process, product, environment) or way of thinking (convergent, divergent). Initial review of the observations and interviews were hand-coded, creating a general code list (Table 2). The observations and interviews were then coded using NVivo software. The researcher utilized color-coded stripes to signify like codes. These color stripes were then used to form categories and evaluate patterns. The patterns were analyzed across all transcripts and themes began to emerge. The themes were used to summarize an evaluation of each research question.

Overall, this study found that creativity was viewed as being present in both the classroom environment and the learning process. Classroom assessment, however, was not viewed as an area where creativity was emphasized. A creative environment is one in which students feel safe and trust the people in the classroom, especially the teacher. A creative environment is also established when a teacher recognizes students for their individual needs,

learning preferences, and abilities. Teachers perceive an improvement in student achievement when classroom tasks offered clear goals but allowed for individual approaches to the learning. Teachers also perceive increased student academic achievement when students are allowed time to try new things or struggle with new learning.

Summary of Findings and Conclusions

Standards-based educational practices have not developed the creative and critical thinking skills people need to be successful in today's globalized society (Smith & Sandvik, 2012). Current research has focused on creativity in the early childhood and elementary classrooms, as well as at the postsecondary level (Aish, 2014; Daly, Mosyjowski & Seifert, 2014; Mahdi et al., 2015; Rinkevich, 2014; Susnea & Tataru, 2014). A gap exists in understanding the middle and secondary classroom experience regarding creativity. To fill this gap in research, the researcher collected data concerning the middle and secondary teacher perceptions of creativity in a classroom environment, as well as his or her perceptions of student academic achievement as it relates to creativity.

Perceptions of a creative environment. Two central themes emerged as answers to research question 1: How do teachers perceive a creative learning environment in the middle and secondary classroom? Seven teachers, in two urban school districts at the middle and secondary level, perceived that a creative environment is one in which students feel safe and trust the people in the classroom, especially the teacher and an environment in which students are recognized for their individual needs, learning styles, learning preferences, and abilities. While a psychologically safe environment was recognized in previous research as relating to a creative environment (Aish, 2014; Reed-Klein, 2014; Rinkevich, 2014) the idea of "trust" being built

between students and all individuals in the classroom was not stated. The present study, however, found that trust was a central tenet found in all measures of data.

Additionally, the previous research has shown that when students are taught in a way that fits how students think, they perform stronger academically (Aish, 2014; Cho et al., 2013; Csiksentmihalyi, 1996, 2014; Fisher, 2013; Foreman, 2014; Kaufman & Beghetto, 2013; Rinkevich, 2014; Starko, 2013; Sternberg, 2006). However, Sternberg (2006) stated children with creative capabilities are almost never given opportunities to learn in a way that matches their pattern of abilities. The present study found, however, that teachers make several choices throughout the school day to meet individual needs, learning styles, and abilities. Several teachers throughout the study discussed the idea of "individual" being present in a creative classroom and, it was perceived that the presence of "an individual pathway" is what leads to higher academic achievement.

Central theme 1: Community of trust. Based on the data presented, the foundation of a classroom built on trust is perceived as necessary for creativity to thrive. This study noted several qualities that aligned to creativity, which included: (a) trying new things, (b) asking questions and venturing answers, (c) being open to new ideas or concepts, (d) taking risks, and (e) a certain level of acceptability in making mistakes and/or failing. However, the foundation noted by the participants for the establishment of these creative qualities was a community of trust. Teacher 3 stated, "You have to have a fearless teacher who creates a community where the kids trust the teacher enough to take a risk and do something that's outside of the box." As researchers noted, creativity was most likely found in environments that were viewed by the student as psychologically safe, as well as permissive of individual expression of ideas (Aish, 2014; Flint, 2014; Reed-Klein, 2014; Rinkevich, 2014). Creativity is a result of interaction

between an individual and the environment. Therefore, the environment must offer an openness to experience new ideas, tolerate ambiguity, and view things beyond the conventional. The environment, specifically the classroom environment, should be a place to play with ideas and concepts, imagining impossible combinations (Aish, 2014; Rinkevich, 2014).

As evidenced by the results of the study, teachers perceive students who feel a sense of trust in the classroom as being more apt to engage in creative thinking, be more open-minded, and take more risks in trying new things, asking questions, and venturing answers. Teacher 4 stated that trust was developed with the establishment of expectations. "I think, first of all, it is important to set ground rules and expectations of your classroom and once kids understand your expectations then they understand your limits, and you have to be willing to let there be some organized chaos in order for [a creative environment] to ever work." Several other teachers substantiated the notion of clear expectations to establish trust. Teacher 1 and Teacher 5, both math teachers, emphasize that the expectation from day one is "to try." The expectation is that students will try to figure out the answer before asking for help. Teacher 5 emphasized that even if they tried she will often just ask them questions to "get them on track." She wants them to not only trust her as the teacher but to trust themselves and their peers to help them learn. Teachers 6 and 7, both English teachers discussed the personal nature of writing and sharing the writing with others. Teacher 7 said that it was important for trust to be built with classmates prior to sharing opinions on personal topics. She stated, "I think it is very difficult for students to be creative in an environment where they don't feel safe. I think having a trusting relationship with the people around you is really important."

While this study did find that classroom teachers perceive trust as being paramount in a creative classroom, it was also noted that not all classrooms would be able to achieve this level

of trust. This idea asserts that a creative environment is not perceived to be solely developed by the classroom teacher, but by all members of the classroom community. Teacher 2 stated, "From day one, I try to do things that get students to at least be comfortable sharing and taking "risks." Teachers have to work very hard to set up a situation like that. It does not work in every class either. Some classes just don't have the personality that allows for a creative environment." Teacher 3 also expressed the perception that the dynamics of some classes do not allow for a creative environment. She said, "There are certain things that [students] need to in order to be successful. So, you need to try to [build trust] as much as you can, but ultimately, it's up to the individuals."

The present study found that a creative environment is one that is able to build a community of trust. Trust is built primarily with the teacher setting the tone of the classroom with expectations of both academics and interaction. As mentioned by several teacher participants, the tone of a creative classroom is one that is open and safe. Students feel secure in venturing questions and answers. Students feel comfortable in approaching new ideas and concepts, as well as making mistakes as a part of the learning process. Teacher participants discussed at the center of these interactions is a trust that is built between the teacher and the students, as well as between each student in the classroom. A few participants also noted that a creative environment is not always established. A classroom in which students to do not develop a level of trust amongst the people the room is less likely to be perceived as a creative environment. This assertion leads the researcher to conclude the creative environment is not perceived to be solely dependent upon the teacher to develop but requires the connection of all classroom participants.

Central theme 2: Recognition of students as individuals. The second tenet of a creative environment to emerge from this study was the recognition of the student as an individual. As noted in the literature, recognition of individual student needs, learning styles, learning preferences, and abilities sets apart the creative classroom from the traditional one (Aish, 2014; Beghetto & Kaufman, 2013; Cho et al., 2013; Kaufman & Beghetto, 2009, 2013; Reed-Klein, 2014; Rinkevich, 2014; Vygotsky, 2004). The data indicated that teachers perceive modifications to learning, both in the process and the product, as conducive to a creative environment. Teacher 2, Teacher 3, and Teacher 6 emphasized that they perceive students having opportunities to explore as a means for stimulating a creative environment as paramount. In describing what sets a creative student apart from other students, Teacher 3 stated, "They spend time exploring and wanting to understand things just on their own. They go beyond what a teacher tells them to do for the classroom and just have that desire to know more as an individual." While Sternburg (2006) noted children with creative abilities were almost never given opportunities to learn in a way that matched their pattern of abilities, this study found that teachers value a time of exploration but feel limited by district and department demands. Teacher 1 stated, "I wish our assessments were more individualized and I even wish our curriculum was more individualized, like telling a student you just have to master these big ideas, before you can go on to this next class. They just work through the big ideas separately and individually and I kind of wish for something like that." The biggest limitation to individualized education is the pacing guide provided by the district and the need for all students to move through the pacing guide at the same pace.

Teacher 7 also echoed the idea of finding limitations concerning individual learning within the district guidelines by stating, "The biggest thing I do is, as much as possible, within

my curriculum, you know we have set things we have to look at, as much as I can if we are going to write about something, I let them choose what they get to write about." She does recognize that at times these choices may be limited to writing about the topic that the district has planned for them to write about, but she likes to offer extensive open interpretation to each topic. She goes on to say, "You know when kids are just doing rote memorization or listening to a teacher talk and try to internalize those ideas I mean, maybe they are technically learning something because they have gained some new knowledge, but to me that's not real or authentic learning and, it's not something they are going to remember later on."

Most teachers reported that a creative environment allowed for the acknowledgment of the individual with changes in the approach to learning, open-ended learning experience, and supporting student choice and exploration. Teacher 1, Teacher 4, and Teacher 5, all of whom teach math, discussed the importance of emphasizing different ways to reach the same answer. Teacher 5 shared the difficulty in finding creativity in math by stating, "In math, there are not a multitude of answers, when it's an equation there is an answer. But what we can do is we can talk about different ways we can get there. So maybe in the process, there is some room for creativity, but not always in the answer." Teacher 1 shared this sentiment by discussing showing students more than one way to approach a math problem. She said,

> So, I feel as though creativity would be not teaching students one way of doing something. So that they have a variety of tools in their tool belt to accomplish a problem.

Open-ended learning experiences can represent several different teaching methodologies. Some common methodologies noted in this study were: (a) hands-on learning, (b) the flipped classroom, (c) interactive notebooks, (d) moving and physical representations of learning, and (e) classroom "play." Teachers shared that these open-ended experiences are incorporated to build

in creativity, problem-solving, and critical thinking. Teacher 2 stated, "I would say it is providing students the opportunity to control their grade through a variety of learning opportunities, multiple ways to show what a student has learned." He discussed altering assessments from a paper test with multiple choice responses to having students design a business to demonstrate their understanding of corporate accounting in economics. Several math teachers discussed the use of interactive notebooks to individualize learning. Teacher participants viewed the interactive notebooks as "creating their own textbook." Teacher 1 discussed how each student's notebook looks completely different. In reference to the difference in the notebooks, she said, "I love to see writing in math. Sometimes students can show learning in different ways, some students can be very good at visually showing what they learned, some are good explaining and writing what they learned, others are better at just working through a problem and solve it, so I think [interactive notebooks] are more student-centered."

Student choice was another common phrase that arose from the data. Several teachers mentioned allowing some sort of student choice in their classroom. This study found that offering students an opportunity to choose how to approach the learning was common. Teacher 6 allowed students to choose where they sat and what book they read during free reading. Teacher 3 allowed students to move the furniture in the room as they changed activities. Teachers 1, 4, and 5 all allowed for individual choice in approach to math problems. However, while student choice was present in the process and the product, student choice in the content to be studied was not.

When asked on the survey is they allow students to choose the topics that will be learned in class, 44% said "always" or "frequently/often." However, when participants were interviewed most agreed that the topics to be learned were not determined by the students. Teacher 1

perceived that there was no room for student-chosen topics due to the curriculum prescribed by the school. Teacher 3 also noted the limitation of student-chosen topics by stating that there are limitations based on "what we are called to teach." She stated that all lessons must include reading, writing, and speaking and did not believe that there was room to explore individual student interests as a formal lesson due to the grade level of her students. "I would tend to think that preschoolers and elementary schools have more opportunities for creativity because kids are younger, and they don't have the restrictions and all the weights placed on them." When asked to clarify weights she said, "You have to prepare them for the ACT, you have to prepare them for college, you have to get them ready for the next level." Overall, student choice seems to reflect a more individual approach to a common assignment, rather than choice of topic to be learned.

While Torrance (1963) found that teachers prefer high IQ students with less creativity and asserted that creative behavior was more often punished, rather than rewarded, this study found that teachers embrace creative students but feel limited by district and departmental demands. Teachers perceive a creative environment as one that recognizes the individual students and encourages individual pathways to learn. The data from this study suggested that teachers find limitations to individual creativity to be curricular demands, rather than a response toward creative students. Several studies found that all children can be creative and taught to be creative if in the right environment and with the right support (Aljughaiman, 2002; Cromwell, 1993; Gardner, 2011; Starko, 2013; Torrance, 1970). These elements still hold true today, with this study substantiating the previous work, finding that students who do not view themselves as creative can engage in creative thought if they are in a trusting environment that recognizes their individual learning preferences and needs.

Perceptions of the effects of creative learning on student academic achievement.

Two central themes emerged as answers to research question 2: How do middle and secondary school teachers perceive the use of creative learning strategies affecting student achievement? The data in this study demonstrated that the use of creativity in the classroom was perceived as increasing student academic performance. Two major themes emerged concerning creativity, and student achievement: (a) creative classrooms see gains in student achievement due to clear goals and an individual approach to learning and (b) students are given time to try new things and are allowed to struggle.

Central theme 1: Clear goals, individual approach. Based on the data presented, student academic achievement is increased when learning has clear goals but offers students a variety of methods to reach those goals. The first theme builds on the Csikszentmihalyi's Flow Model discussed in the literature review. Flow is achieved when the skill level of the person and the challenge of the task are in line in such a way that both boredom and anxiety are absent. For flow to occur, clear goals and objectives for the task are communicated. Individual approaches, with a balance between ability levels and elimination of fear or worry, are also needed to create a state of flow. Finally, immediate feedback is offered so that the task can continue to completion. The Flow Model was evident in data as teachers discussed setting both clear objectives to learning, as well as recognizing individual approaches to achieve those objectives.

Teacher 1 best demonstrated this with the use of interactive notebooks. She posts the objectives for each math lesson in her classroom, and students utilize their notebooks to "create their own textbook" for each lesson. She does offer students a set of problems but asks them to each complete the problems as they feel is best. Additionally, Teacher 4 gives students different levels of math problems and ask them to create a video to show classmates how to find the

answer. In this example all students have the same objectives, to solve the math problem and create a video, but the difficulty level of the math problems allows each student to work at their level. During this time the researcher observed students enter flow. Students were so focused on the task at hand that time ceased to exist. Students remained engaged in the learning process for the duration of the class, with many rushing to get things put away and gathered after the bell rang for the next class.

Additionally, several teachers offer students immediate feedback. Teacher 5 had students' complete problems around the room with each problem offering a letter, if done correctly they would form a word from the "math vocab" they had studied that week. Students could check their own work as they went along, blending the math problems with what they knew of the math vocab words. If the letters were not forming the word, they knew that had completed a problem incorrectly and had to go back and check. This immediate feedback, along with the combination of challenge and the elimination of fear placed these students into a "flow" moment. Students did not have time to consider how often and how many answers they were getting wrong. They worked on each problem and modified answers as needed, again losing track of time and getting lost in the moment.

This study found that the Flow Model developed by Csikszentmihalyi (2008) is a good representation of the creative classroom. The creative environment is one in which students are pushed outside of being comfortable, but not so much that they are unable to complete the task. Unlike Vygotsky's idea of Zone of Proximal Development, which requires an adult to work alongside a student, the flow model creates a situation in which the adult removes themselves from the task as many of the teachers did during this study. The learner, while frustrated at times, will find a solution on his or her own. Additionally, the Flow Model recognizes the need

for clear goals and an individual understanding of each student, which this study found was substantiated by several participants through both the interview and the classroom observations.

Central theme 2: Trying new things and time to struggle. Several teachers perceived real learning as meeting new ideas and concepts which may involve a struggle to understand. Dewey (1938) described the problem-solving process as an internal feeling that leads to a solution or learning. Initially, students may find it difficult to understand how to approach a problem; however, once the difficulty is defined, different solutions may be considered. Consequences of the solutions are evaluated, and one solution is accepted and tried out (Starko, 2013). Teacher 5 discussed a feeling of difficulty her students sometimes feel, stating, "It's good for the kids to see when something doesn't work, and we need to go back and do something else." She went on to describe giving her students time to struggle with new learning stating, "The kids have gotten where, I know yesterday one of them said, never mind I'm not even asking because I know you won't answer it. At first, that bugs them, but after a little while, they stop asking. I don't want me just to answer. I want them to try to figure it out." Teacher 3, Teacher 6, and Teacher 7 discussed watching as students struggle through learning but knowing that learning happens when students are trying to make sense of it themselves. Teacher 3 said, "I don't want to them to parrot what I am thinking, I want them to have their own thought."

Both Dewey (1938) and Wallas (1926) discussed stages of illumination or a-ha moments taking place in the learning process. This stage is perceived as essential to long-term student learning. Teacher 7 discussed struggling with education in her own life that made her value that experience for her students. She recalled, "When I think back on my highs school and college experience the things that I remember are all solely the things that involve some higher-level thinking of creative nature. Whether I knew that at the time or not is kind of irrelevant because

as I look back on it, that really stretched me you know I grew because I learned or I grew because I was pushed." Teacher 5 also reflected on her past education experiences that caused her to struggle as very meaningful to the learning process. She said, "You only gain and get smarter by failing first. So, we talk a lot about when you're struggling that's when you are learning. The learning is in the struggle. I had an English teacher that had that written on her wall. Learning is a struggle. I really encourage that."

This study found that a creative classroom embraces the idea that a struggle comes with new learning. Teachers often drew on their own experiences to discuss the struggle that is found in learning. Several educational theorists, including Dewey (1938) and Wallas (1926), emphasized a disconnected feeling as a one is trying to make sense of something new. Most participants discussed using strategies to encourage self-correction, rather than giving students a confirmation of yes or no when asked if the student had completed the assignment "correctly." The data from this study indicated part of academic achievement found in a creative classroom is rooted in allowing students time to both experience the new concept being learned and then to struggle with making sense of it. Authentic and long-term learning were both noted as goals for a creative classroom.

Implications

To address the gap in the literature, this research was conducted to develop insight related to creativity in middle and secondary education as it relates to the classroom environment and student academic achievement. The qualitative case study was designed to explore how middle and secondary teachers view creativity and its use in the classroom to prepare students for post-secondary education or career. The following sections discuss theoretical, practical, and future

implications for academic scholars and education practitioners. This section also evaluates the strengths, weaknesses, and the credibility of the study.

Theoretical implications. This study draws upon creative teaching practices and a creative classroom environment to support student academic achievement. Dewey's (1938) model of problem-solving and Wallas' (1926) idea of a cognitive process of creativity was used as a foundation to explore teacher perceptions of a creative learning environment and student academic achievement. In both theories, a child learns through interaction within his or her environment once a problem has been encountered. The learning takes place when what Wallas termed, an illumination moment occurs. This study also further established the existence of the "illumination moment" through the lens of Csikszentmihalyi's (2008) Flow Model. The Flow Model signifies that a person is most productive when in a state of flow. Flow is achieved when the skill level of the person and the challenge of the task are in line in such a way that both boredom and anxiety are absent. For flow to occur, clear goals and objectives for the task are communicated. Individual approaches, the elimination of fear or worry, and immediate feedback are also central components to flow. This study found that teachers perceive increased academic performance when students engage in a creative classroom embracing moments of flow.

Additionally, Torrance expanded on the connection between creativity and learning through in-depth studies on the creative student and how to develop a creative environment in a classroom setting. Like Dewey (1938) and Wallas (1926), Torrance found that it was important for students to experience autonomy in the classroom and be given time to explore their interests and work on self-selected projects (Smith, 1996; Torrance, 1976). In the present study, the teacher's emphasis on individual needs, learning preferences, and abilities aligned with the belief that student-driven learning allowed them to grow both in knowledge and in social understanding

(Dewey, 1938; Ornstein, Levine, & Gutek, 2011). Furthermore, this study further defined the creative environment, adding the perception of a community of trust to the on-going list of environmental factors, as well as establishing that not all classrooms communities are able to construct a foundation to give way to creativity.

Practical implications. This qualitative case study discusses the perceived effects of creativity on student academic achievement, through both the classroom environment and the teaching practices used by creative teachers. Previous studies have shown that modern society needs people that can use their creative abilities to solve relevant real-world problems and other countries are already beginning to shift away from Industrial Age education frameworks (Aish, 2014; Fisher, 2013; Flint, 2014; Foreman, 2014; Mahdi et al., 2015; Reed-Klein, 2014; Rinkevich, 2014). Society today demands that people see problems from a global perspective and it requires a great need for creative thinking (Aish, 2014; Pink, 2005; Robinson, 2011). Based on the results of this study, building a community of trust, recognizing students' individuality, and allowing students time to struggle would all increase the required skills demanded for life after secondary education. By better understanding how teachers perceive a creative environment, as well as how they perceive creative practices in regard to student academic achievement, may solicit a change in current education pedagogy.

In this study, seven urban middle and high school classroom teachers shared their perceptions on a creative classroom environment and the effects of creative teaching practices on student academic performance. The study found that a creative learning environment offers a community of trust; an environment that is structured, but not rigid; and an environment that has minimal distractions. A community of trust must be developed early through the establishment of expectations, with both individual and group interaction. It was also noted in this study that

the environment must offer an openness to experience new ideas, questions, and unique answers. Additionally, a creative environment is one in which students feel safe to take risks and fail.

The study found that creativity was perceived as increasing academic achievement when clear goals are established, yet individual approaches and abilities were considered. The perception of academic achievement is increased when students are allowed to choose elements of their learning, find their own path to the answer, are given time to try new things and are allowed time to struggle. This study also found that the biggest limitation to creativity in student academic achievement came from the demands placed on teachers from school districts and independent content departments. The limitations concerning what content could be taught and the pacing of said content limits the individual nature of the creative classroom.

Future implications. One limitation of this study was the lack of diversity within the teacher participants. The sample population consisted of teachers who all self-identified as Caucasian. Additionally, this study had only one male participant which did not allow for the potential difference between male and female teachers in regard to creative practices and classroom environment. Moreover, results from a male perspective may be skewed to represent only one point of view. In working with a more diverse sample, the perceptions of the classroom environment and teaching strategies could be beneficial. While this study had limited access to a more diverse population, a study conducted in a more diverse area might be able to address this deficiency.

Future studies could be strengthened by examining all questionnaire participants and making noted differences, if any, between the teachers who self-identified as traditional and those who self-identified as creative. Additionally, the inclusion of middle and secondary student perception surveys or interviews could provide another perspective on creativity. The

data from this study provides an insight into both what creates a creative environment, but also what limits it. This study also provided the perceived academic achievement of students in a creative environment, but an actual quantitative study related to these ideas would be beneficial to affirming or disputing such perceptions. Additionally, a mix-method approach might garner a complete picture of creativity and academic achievements.

Strengths and Weaknesses

This study focused on self-identified creative teachers, which may have limited participation if the potential participant did not believe he or she was a creative teacher. As the letter of introduction sent to all teachers stated the purpose of the study was to explore the perceptions of creative teachers there may have been teachers who did not participate due to their own assessment of not being creative. Additionally, those that did participate may have viewed themselves as creative, but if observed may have aligned more to traditional practices.

Furthermore, the size of the study being only seven teachers limited the study to point of view of those teachers. Originally the researcher had wanted 15 teachers, but in using the questionnaire to determine a level of creativity, the study ended up with only seven participants. The results may not represent the viewpoints of all creative teachers or teachers who use creative elements in their classrooms. Although this was a weakness, the study did provide insight into the limitations the teachers in these two districts faced as they try to encourage more creativity in the classroom. Additionally, the study was able to establish an insight that trust is needed in a creative environment and that the whole class culture contributes to that trust and not solely the teacher. Therefore, while weaknesses exist in the study, it was able to achieve the research purpose and to contribute evidence concerning creativity in a middle and secondary classroom. The strengths found in the study could be used to guide discussions with educational leaders and

policy makers in regard to district goals and autonomy in classroom content that may enable the development of the skills needed to be successful in post-secondary society.

Another weakness was the demographics of the sample. The sample was not an equal representation of gender, race, grade level taught, or content area taught. Most of the participants were female, and all participants were Caucasian. Also, this study had limited points of view from each grade level. Finally, this study mainly consisted of math and English teachers. The imbalance in the sample may have resulted in the over-representation of some groups in the findings reported.

While the data obtained supported what was reflected in the literature review, as well as previous studies, the added understanding of community trust, as well as the discussions of creative barriers faced by teachers, was an area of strength. The researcher learned that a community of trust, as well as the recognition of individual student needs, learning preferences, and abilities, are key to a creative classroom. The data obtained from this study may provide teachers with ideas regarding methods to develop an effective creative classroom environment, as well as increasing awareness of the effects of creativity on student academic achievement.

Recommendations

In this section, the researcher recommends the studies that future researchers could conduct to further evaluate creativity in the classroom. In this section also, the researcher summarizes the practical applications of the results of this study. These recommendations highlight the overall importance and conclusion of the study and offer a practical use of the results of this study.

Recommendations for future research. This study provides evidence to suggest that a creative classroom environment can be established with the building of a community of trust.

The measures used provided a triangulation of data and demonstrated consistent themes throughout the study. The use of the four facets of creativity allowed for a consistent evaluation of creative measures and the use of the observation and interview protocols also aided in narrowing the focus when conducting the research. Although the findings aligned to Csikszentmihalyi's Flow Model, more specific research to support this theory would be valuable.

The current study was designed to explore the perceptions of middle and secondary teachers who self-identified as creative. While the results of the study suggest all teachers were creative, further testing of the questionnaire as means to determining the classification of creative and traditional would further substantiate the research findings. Additionally, one central misconception found in the research and unexplored in this study was that creativity is rare and is only found in gifted children. Several studies have found that all children can be creative and taught to be creative if in the right environment and with the right support (Aljughaiman, 2002; Cromwell, 1993; Gardner, 2011; Starko, 2013; Torrance, 1970). This inequality is particularly pronounced for culturally diverse students who historically have been underrepresented in United States gifted education programs. Additional research should be conducted to determine the perceptions of creativity in more diverse populations. If the goal is to improve student success in college and career, additional data collection concerning creative teaching practices that build those specific skills could be evaluated.

Recommendations for future practice. This study reconfirms already established beliefs concerning a creative environment, as well as emphasizes the need for a community of trust to exist amongst the classroom participants. Additionally, the study was able to highlight barriers placed on a creative classroom with the required use of district pacing guides, curriculum, and assessment measures. The data presented in this study suggested that the teacher

holds an important role in developing trust within the classroom using the foundation of classroom expectations that support the development of trust; however, the teacher is not the only factor in the development of a trusting community of learners. The following recommendations for practitioners emerged from the conclusions of this study.

A creative learning environment should offer an openness to experience new ideas, concepts, and processes. Creative learning environments should be free from fear, worry, and failure. Teachers can promote a creative environment in building trust with students both one-on-one and as a classroom community as a whole. It was suggested in this research that the establishment of classroom expectations early in the school year was a possible way to build that trust. Additionally, a creative environment is structured, but not rigid. While teachers desiring to build up creativity in their classroom may concentrate on one particular subject area or are asked to meet a certain set of curricular stands, they encourage exploration and do not restrict answers to be found in one singular way. Students should be given opportunities to direct their learning through student choice in both process and product. Students should be encouraged with intrinsic motivation, rather than external rewards (Csikszentmihalyi, 2014, 1996; Kototsaki, 2011; Rinkevich, 2014; Starko, 2013; Sternberg, 2006). The overall classroom culture is one of improvement, rather than competition (Aish, 2014; Kototsaki, 2011; Reed-Klein, 2014; Rinkevich, 2014).

As a way to improve student's academic performance using creativity, it is recommended that teachers recognize the creative potential in each student and provide opportunities for children to identify and explore their individual interests (Bruner, 1996; Vygotsky, 2004). It was found in this study that when students have opportunities to experience autonomy in the classroom and explore their interests, they achieve higher levels of academic performance. To

nurture creative thinking, students need clear goals for learning, but be permitted to reach those goals in individual ways. Students need time to redefine the problem in a new way or be given time to struggle with finding a solution. Teachers should ask questions of students and lead them to potential pathways to the answer without giving them the answer. Finally, research has shown that when students are taught in a way that fits how they think, they will perform better academically. Therefore, teachers should consider each student individually when planning instruction.

Both classroom teachers and school administrators may benefit from this study as they consider the classroom environment and the development of content pacing guides, classroom curriculum, and assessment measures. The theories of Dewey (1938) and Wallas (1926) that acted as the foundation for this study suggest that learning should be constructed by the individual experience and each learner should be allowed time to synthesize new learning with past experiences in order to reach the illumination moment. Administrators should seek to support creative teaching practices by allowing for some autonomy in classroom curriculum and assessment measures. Additionally, providing access to professional development opportunities that promote creative teaching strategies and the establishment of a creative environment is another way that administrators can support creativity.

The results of this study support the establishment of a creative environment through the building of trust through the setting of classroom expectations and the acceptance of questions, risk-taking, and the ability to make mistakes or fail. Furthermore, this study emphasized the importance in recognizing the individual student needs, abilities, and learning preferences and styles, along with clear goals to assist in student academic achievement. While the goal of American education has been to produce workers who are ready to take their place in society,

emphasis on standardization has not lead to the skills needed to effectively be a part of the technologically-based, globalized world in which society now functions. Creative classroom practices should be considered as middle and secondary education looks to prepare students for the future.

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Appendix A

Creativity in the Classroom: A Questionnaire

For each set of questions, please mark the response that most accurately reflect your classroom.

Classroom Environment and Teaching Philosophy:

	Always	Frequently	Sometimes	Rarely	Never
1. Students work in cooperative groups.	5	4	3	2	1
2. The classroom activities are the same for all students in the same class.	5	4	3	2	1
3. I am often located in the front of the classroom.	5	4	3	2	1
4. The physical arrangement of the classroom changes to facilitate learning activities.	5	4	3	2	1
5. My students sit in seating charts that I arrange.	5	4	3	2	1
6. The textbook is our primary reference.	5	4	3	2	1
7. There is little ambiguity in my classroom; most topics offer one correct answer.	5	4	3	2	1
8. I serve as a mentor and motivator.	5	4	3	2	1
9. I serve as an expert in my subject area.	5	4	3	2	1
10. Excellence is defined as a percentage of comprehension of the material in my classroom.	5	4	3	2	1
11. Students in my class tolerate ambiguity without much trouble.	5	4	3	2	1
12. Students often provide answers that are beyond the conventional.	5	4	3	2	1
13. Students often connect my lessons to outside sources, such as other books, tv shows, world events, etc.	5	4	3	2	1
14. I believe that foundational skills with one correct answer are key to further learning.	5	4	3	2	1
15.I offer various perspectives or methods when I teach.	5	4	3	2	1
16. I believe there are multiple correct answers to all problems.	5	4	3	2	1

Learning Process/ Activities:

	Always	Frequently	Sometimes	Rarely	Never
1. Students make interest-based learning choices in my classroom.	5	4	3	2	1
2. Class activities are student centered.	5	4	3	2	1
3. Coverage of the curriculum is the primary influence on my lesson plans.	5	4	3	2	1
4. I use whole class instruction.	5	4	3	2	1
5. I teach to the intellectual level of the class as a whole.	5	4	3	2	1
6. "Hands-on" learning activities are provided for the student.	5	4	3	2	1
7. I present the material to be learned.	5	4	3	2	1
8. I plan the student learning activities.	5	4	3	2	1
9. I use a form of drill and practice in my classroom.	5	4	3	2	1
10.Students in each class complete the same assignments.	5	4	3	2	1
11.Students use critical thinking and problem-solving skills.	5	4	3	2	1
12.Students investigate real world problems in my classroom.	5	4	3	2	1
13.I provide immediate feedback to my students.	5	4	3	2	1
14.I have clear learning goals and expected answers to assignments.	5	4	3	2	1
15.I often ask students to question already established assumptions.	5	4	3	2	1
16.I ask students what topics they would like to learn more about in my classroom.	5	4	3	2	1

Assessment and Product in the Classroom:

	Always	Frequently	Sometimes	Rarely	Never
1. Students produce videos, simulations, and/or role play in my classroom.	5	4	3	2	1
2. Students are tested on the information presented in class only.	5	4	3	2	1
3. Students monitor their own learning.	5	4	3	2	1
4. Students give singular interpretations of ideas or events.	5	4	3	2	1
5. Assessment occurs at the end of learning.	5	4	3	2	1
6. I determine the assessment tool for class activities.	5	4	3	2	1
7. I determine the grading criteria for learning activities.	5	4	3	2	1
8. Standardized and/or textbook tests are utilized for assessment.	5	4	3	2	1
9. Tests and Final Exams are used as primary grades.	5	4	3	2	1
10. Students create portfolios to demonstrate learning.	5	4	3	2	1
11. Student assessment is based on authentic activities (i.e. portfolio).	5	4	3	2	1
12. Students determine the assessment tool (such as a choice of rubric, questions, or activity).	5	4	3	2	1
13. Students create and or come up with novel ideas or products.	5	4	3	2	1
14. Students replicate something I have modeled as a teacher.	5	4	3	2	1
15. A variety of materials and resources are available for student use.	5	4	3	2	1
16. Creative responses to assignments are encouraged.	5	4	3	2	1

Please answer the demographic questions below to the best of your ability. Your responses will be kept confidential. Feel free to decline to answer any questions for any reason.

1. What is your First Name and Last Initial?
2. What are the initials of the school in which you teach?
3. What is your age group?

a. Under 25

b. 25–29

c. 30–39

d. 40–49

e. 50–59

f. 60+

4. What is your gender?

    a. male

    b. female

5. What is your identified ethnicity?

    a. African American

    b. Asian/ Pacific Islander

    c. Caucasian

    d. Hispanic

    e. Multi-racial

    f. Native Indigenous

    g. Other

6. What is the highest level of formal education that you have completed?

    a. Bachelor's Degree

    b. Master's Degree

    c. Doctorate

7. How many years of teaching experience total do you have?

    a. This is my first year

b. 1–2 years

c. 3–5 years

d. 6–10 years

e. 11–15 years

f. 16–20 years

g. More than 20 years

8. How long have you been teaching at this school?

a. This is my first year

b. 1–2 years

c. 3–5 years

d. 6–10 years

e. 11–15 years

f. 16–20 years

g. More than 20 years

9. Additional Comments or Suggestions?

Researcher's Key to Questionnaire Interpretation of Data

Classroom Environment and Teaching Philosophy

Creative Teaching Practices	Traditional Teaching Practices
1	2
4	3
8	5
11	6
12	7
13	9
15	10
16	14

Learning Process/Activities

Creative Teaching Practices	Traditional Teaching Practices
1	3
2	4
6	5
11	7
12	8
13	9
15	10
16	14

Assessment and Product in the Classroom

Creative Teaching Practices	Traditional Teaching Practices
1	2
3	4
10	5
11	6
12	7
13	8
15	9
16	14

Appendix B

Observation Protocol: Diebel Creativity Study

Location:

Individual being observed:

Observation number:

Observer Involvement: Nonparticipant

Date/Time:

Place:

Duration of observation:

Class:

Number of Students:

Male/Female:

Number of Adults:

Physical Classroom Notes: (Arrangement, Wall Décor, Cleanliness, Organization, Objects, Student Materials Available, Teacher Materials, Furniture)

Creative Facets Checklist

Facet	Description	✓	Notes
Person	Students are driven by intrinsic motivation		
Person	Students have several broad interests		
Person	Students are open to experiences		
Person	Student autonomy is evident		
Process	Tasks offer clear goals but do not have a single way of reaching the goal		
Process	Immediate feedback is provided		
Process	Balance between abilities and challenge is demonstrated (frustrated at times, but finds a solution)		
Process	Distractions are minimal		
Process	Elimination of fear, worry of failure, self-consciousness		
Process	Emphasis on improvement rather than competition		
Process	Defines problems, Questions assumptions, Self-initiated projects, Explore individual interests		

Creative Facets Checklist Cont.

Facet	Description	✓	Notes
Product	Students create novel items		
Product	Students create several different items		
Product	Students do not replicate something the teacher did but construct something on their own		
Product	Materials and resources are available for student use at will		
Environment	Supportive of original ideas and remarks		
Environment	Psychological safe environment (students venture answers without fear)		
Environment	Students tolerate ambiguity		
Environment	Students answers are beyond the conventional		
Environment	Structured, but not rigid		
Environment	Students make many connections to topics outside the subject at hand.		
Environment	Invites experimentation or divergent thinking		

Convergent and Divergent Thinking Checklist

Thinking	Description	✓	Notes
Convergent	Seek the right answer		
Convergent	One single answer		
Convergent	Foundational skills		
Divergent	Novel approaches to learning		
Divergent	Varied perspectives		
Divergent	Multiple correct answers		
Divergent	Novel solutions		

Appendix C

District Invitation Letter

Dear Site Public School District,

My name is Melissa Diebel, and I am a doctoral student working toward the completion of my Ed. D. degree at Concordia University–Portland (2811 NE Holman St., Portland, OR 97211). I would like to invite all middle and secondary teachers within your district to participate in a qualitative research study that will explore the topic of teachers' perspectives on creativity in the middle and secondary classroom. The study is designed to gather information on how teachers view creativity as it relates to learning necessary for college and career readiness. The benefits of this research would allow for a deeper understanding of student academic achievement in a creative environment and provide data to either support or refute the use of creativity in learning pedagogy as it relates to college and career readiness.

To begin the study, all middle and high school teachers will be invited to complete an online questionnaire. The link to the questionnaire will be provided to each building administrator and will ask that they disseminate the link to his or her teachers. The questionnaire will take approximately 30 minutes to complete. The results of the questionnaire will be used to select 15 teachers to participate in two classroom observations and one-on-one interviews to further explore their point of view and assessment of creativity in middle and secondary education. The classroom observations will last no more than 60 minutes, and after each observation an interview will be conducted, lasting no more than 30 minutes.

The research has been designed solely for research purposes. The questionnaire that will be answered by the teachers contains no information that will identify students or guardians and each teachers' identity will be kept confidential. All classroom observation and interview notes will be kept in a secure password locked file on my computer, and a backup flash drive will be kept in a locked filing cabinet at my home.

All teacher participation in this project is voluntary, and they do not have to answer any questions that they do not wish to answer. There are no anticipated risks associated with participation in this study and no adverse consequences for students, parents/guardians, or staff for participating. The online link needed for the questionnaire will be provided by myself to the administrators at each middle and high school site and the results of this study will be provided upon request.

If you have any questions or comments about this research, please contact Melissa Diebel at [redacted] or [redacted]. You may also contact my supervisor, Dr. Donna Graham at [redacted] or [redacted]. Questions or concerns about the research participants' rights may be directed to the Director of Concordia University–Portland IRB, OraLee Branch, at [redacted] or [redacted].

Sincerely,
Melissa M. Diebel

Appendix D

High School Site Permission Letter

RR 18-14

August 17, 2017

Melissa M. Diebel, Doctoral Candidate

Concordia University - Portland

RE: Request to Conduct Research in the Public Schools
Dear Ms. Diebel:

Your request to conduct a study with [Redacted] secondary teachers during the 2017-18 school year to meet requirements for doctoral program at Concordia University is approved. Please contact principals at each school to secure permission to conduct this study and develop a plan for distributing your survey. Be prepared to share a copy of this letter when contacting district personnel. You will need a background check before you can enter any PS school for the purposes of collecting data. Please use the forms and procedures outlined in your proposal for securing consent.

Sincerely,

[Redacted]
Director of Assessment and Evaluation Services

Appendix E

Middle School Site Permission Letter

July 17, 2017

Dear Concordia University Portland IRB:

On behalf of the middle school in the study site school district, I am writing to grant permission to Melissa Diebel, a doctoral student in your program, to conduct her research study entitled, “Teachers’ Perceptions on the Role of Creativity in Secondary Education” during the fall semester of the 2017–2018 school year. I understand that Ms. Diebel will invite all middle school teachers to participate in the Creativity in the Classroom Questionnaire, selecting three middle school teachers to participate in two classroom observations and two interviews to follow the observation.

Regards,

The Study Site Middle School Principal

Appendix F

Participant Invitation Letter

Dear _____,

My name is Melissa Diebel, and I am a doctoral student working toward the completion of my Ed. D. degree at Concordia University–Portland. I was given permission to invite all middle and secondary teachers within your district to participate in a qualitative research study that will explore the topic of teachers' perspectives on creativity in the middle and secondary classroom (see attached letter of permission from [redacted]). The study is designed to gather information on how teachers view creativity as it relates to learning necessary for college and career readiness. The benefits of this research would allow for a deeper understanding of student academic achievement in a creative environment and provide data to either support or refute the use of creativity in learning pedagogy as it relates to college and career readiness.

With your permission, I would like to invite all the teachers in your building to complete an online questionnaire. The link to the questionnaire will be provided to you and I would ask that you disseminate the link to the teachers in your building. The questionnaire will take approximately 15 minutes to complete. The results of the questionnaire will be used to select up to 15 teachers from the district to participate in two classroom observations and one-on-one interviews to further explore their point of view and assessment of creativity in middle and secondary education. The classroom observations will last no more than 60 minutes, and after each observation an interview will be conducted, lasting no more than 30 minutes.

All teacher participation in this project is voluntary, and they do not have to answer any questions that they do not wish to answer. There are no anticipated risks associated with participation in this study and no adverse consequences for students, parents/guardians, or staff for participating.

I have included an anticipated timeline of research to help you understand my presence in the building. I thank you so much for assisting me in achieving this final step in a very long process.

If you have any questions or comments about this research, please contact Melissa Diebel at [redacted] or [redacted]. You may also contact my supervisor, Dr. Donna Graham at [redacted] or [redacted]. Questions or concerns about the research participants' rights may be directed to the Director of Concordia University–Portland IRB, OraLee Branch at [redacted] or [redacted].

Sincerely,

Appendix G

Timeline of Study

August/ September 2017

- Meet with each administrator to introduce myself and answer any questions
- Send administrators initial questionnaire to send to potential participants
- Reminder email sent to potential participants
- Questionnaire deadline will be Sept. 23
- Select schools with highest responses that best align to study
- Contact two primary administrators and teacher participants

October 2017

- Schedule observations/interviews
- Complete observations and interviews

November 2017

- Compile results
- Transcribe, Code Transcripts
- Follow up if need be

December 2017

- Thank participants
- Complete analysis

Appendix H

Administrator Directions Letter

Dear _____,

Thank you for your agreed participation in my qualitative research study that will explore the topic of teachers' perspectives on creativity in the middle and secondary classroom. In this email, you will find the link to the questionnaire to be given to all teachers within the building. The questionnaire will take approximately 30 minutes to complete.

The link to the questionnaire is found at:

[redacted]

I would ask that all teachers who wish to participate, please complete the questionnaire by 5:00 pm CST on September 23, 2017.

As a reminder:

- The questionnaire contains no information that will identify students or guardians and teacher identity will be kept confidential. The results of the questionnaire will be utilized to select 15 teachers to participate in the second part of the study.
- The second part of the study includes two classroom observations and one-on-one interviews.
- The classroom observations will last no more than 60 minutes, and after each observation an interview will be conducted, lasting no more than 30 minutes.
- All my notes and transcripts will be provided to each participant to ensure that his or her perspective is represented accurately.
- All classroom observation and interview notes will be kept in a secure password locked file on my computer, and hard copies and a backup flash drive will be kept in a locked filing cabinet at my home.

Teacher participation in this project is voluntary, and they do not have to answer any questions that they do not wish to answer. There are no anticipated risks associated with participation in this study and no adverse consequences for students, parents/guardians, or staff for participating.

If you have any questions or comments about this research, please contact Melissa Diebel at [redacted] or [redacted]. You may also contact my supervisor, Dr. Donna Graham at [redacted] or [redacted]. Questions or concerns about the research participants' rights may be directed to the Director of Concordia University–Portland IRB, OraLee Branch at [redacted] or [redacted].

Thank you!

Appendix I

Consent to Participate

CONSENT FORM

Research Study Title: Teachers' Perceptions on the Role of Creativity in Secondary Education
Principal Investigator: Melissa Diebel
Research Institution: Concordia University–Portland
Faculty Advisor: Dr. Donna Graham

Purpose and what you will be doing:

The purpose of this research is to gather information regarding your perspective on fostering a creative learning environment, as well as how you see the use of creativity affecting student academic learning. I expect approximately 15 volunteers. No one will be paid to be in the study. I will begin enrollment on August 28, 2017 and end enrollment on September 23, 2017. To be in the study, you will need to complete the questionnaire provided by your administrator and then be selected to be observed and interviewed concerning the topic of creativity in your classroom. Doing these things should take 30 minutes for the questionnaire, 2 hours of observation, and 1 hour of follow up interview.

Risks:

There are no risks to participating in this study other than providing your information. However, we will protect your information. Any personal information you provide will be coded so it cannot be linked to you. Any name or identifying information you give will be kept securely locked inside a folder on my desktop laptop, and hard copies will be locked within a locked filing cabinet accessible to only myself. Should anyone look at the data, none of the data will have your name or identifying information. We will refer to your data with a pseudonym that only the principal investigator knows links to you. This way, your identifiable information will not be stored with the data. We will not identify you in any publication or report. Your information will be kept private always, and then all study documents will be destroyed 3 years after we conclude this study.

Benefits:

The information you provide will help establish best practices in classroom methodology, as well as provide insights into how students learn. You could benefit this by providing honest and real feedback on your experiences and perceptions of student learning and classroom experiences.

Confidentiality:

This information will not be distributed to any other agency and will be kept private and confidential. The only exception to this is if you tell us abuse or neglect that makes us seriously concerned for your immediate health and safety.

Right to Withdraw:

Your participation is greatly appreciated, but you are free at any point to choose not to engage with or stop the study. You may skip any questions you do not wish to answer. This study is not required, and there is no penalty for not participating. If at any time you experience a negative emotion from answering the questions, I will stop asking you questions.

Contact Information:

You will receive a copy of this consent form. If you have questions, you can talk to or write the principal investigator, Melissa Diebel at melissamdiebel@gmail.com. If you want to talk with a participant advocate other than the investigator, you can write or call the director of our institutional review board, Dr. OraLee Branch (email {redacted] or call {redacted]).

Your Statement of Consent:

I have read the above information. I asked questions if I had them, and my questions were answered. I volunteer my consent for this study.

_____ _____
Participant Name Date

_____ _____
Participant Signature Date

_____ _____
Investigator Name Date

_____ _____
Investigator Signature Date

Investigator: __Melissa Diebel_; email: _melissamdiebel@gmail.com__
c/o: Professor __Dr. Donna Graham_;
Concordia University – Portland
2811 NE Holman Street
Portland, Oregon 97221

Appendix J

Parent Consent Letter

Parent/Guardian Informed Consent Letter

Dear Parent/Guardian,

My name is Melissa Diebel, and I am a doctoral student working toward the completion of my Ed. D. degree at Concordia University–Portland. I would like to notify you of the potential participation of your student's teacher in a qualitative research study that will explore the topic of creativity in the middle and secondary classroom. The study is designed to gather information regarding the teacher perspective on fostering a creative learning environment, as well as how he or she views the use of creativity effecting student learning. The benefits of this research would allow for a deeper understanding of student academic achievement and provide data to either support or refute the use of creativity in the classroom.

During this study I, the researcher, will be present in the classroom for two, 1-hour long observations, and after each observation will interview the teacher regarding his or her practices and student responses. I will not take notes on individual student names but will be noting student participation in the classroom activities. I will not use student names or data in any of my reporting. The research has been designed solely for research purposes. The study will contain no information that will identify students or guardians and teacher identity will be kept confidential. All classroom observation and interview notes will be kept in a secure password locked file on my computer, and hard copies and a backup flash drive will be kept in a locked filing cabinet at my home.

The ability to observe your student in the classroom is voluntary, and you may request that I come at a time that your student is not present in the classroom. There are no anticipated

risks associated with participation in this study and no adverse consequences for students, parents/guardians, or staff for participating. The school district is not conducting the research.

If you have any questions or comments about this research, please contact Melissa Diebel at [redacted] or [redacted]. You may also contact my supervisor, Dr. Donna Graham at [redacted] or [redacted]. Questions or concerns about the research participants' rights may be directed to the Director of Concordia University–Portland IRB, OraLee Branch at [redacted] or [redacted].

Your Statement of Consent:

I have read the above information. I asked questions if I had them, and my questions were answered. I volunteer my consent for this study.

_____	_____	_____
Parent Name	Parent Signature	Date

Appendix K

Student Assent Letter

Dear Student,

My name is Melissa Diebel, and I am a doctoral student working toward the completion of my Ed. D. degree at Concordia University–Portland. I would like to notify you of the potential participation of your teacher in a qualitative research study that will explore the topic of creativity in the middle and secondary classroom. The study is designed to gather information regarding the teacher perspective on fostering a creative learning environment, as well as how he or she views the use of creativity effecting student learning. The benefits of this research would allow for a deeper understanding of student academic achievement and provide data to either support or refute the use of creativity in the classroom.

During this study I, the researcher, will be present in the classroom for two, one-hour long observations, and after each observation will interview the teacher regarding his or her practices and student responses. I will not take notes on individual student names, but will be noting student participation in the classroom activities. I will not use your name or data in any of my reporting. The research has been designed solely for research purposes. The study will contain no information that will identify you. All classroom observation and interview notes will be kept in a secure password locked file on my computer, and hard copies and a backup flash drive will be kept in a locked filing cabinet at my home.

The ability to be in a classroom where I observe your teacher is voluntary, and you may request that I come at a time that you are not present in the classroom, please let your teacher know and we will plan accordingly. There are no anticipated risks associated with participation in this study and no adverse consequences for students, parents/guardians, or staff for participating. The school district is not conducting the research.

If you have any questions or comments about this research, please contact Melissa Diebel at [redacted] or [redacted]. You may also contact my supervisor, Dr. Donna Graham at [redacted] or [redacted].

Your Statement of Consent:

I have read the above information. I asked questions if I had them, and my questions were answered. I volunteer my consent for this study.

_____ _____

Student Name Date

_____ _____

Student Signature Date

Appendix L

Creativity in the Classroom: Interview One Questions

Opening Questions for all participants:

1. How would you define creativity?

2. How do you view creativity within your subject area? At your grade level?

3. How does creativity differ at your grade level from another grade level? (Such as middle school from pre-school.)

4. Can you explain how you utilize creativity within your classroom?

5. How do you believe a creative environment is established?

6. What are common characteristics of creative students?

7. How do you see creative practices and an environment influence students' academics, if at all?

8. What do you believe is evidence of creative thought? Is encouraging creative thought difficult or easy in your subject area? At your grade level? Why is that?

9. How does creativity impact learning and student achievement?

Appendix M

Creativity in the Classroom: Interview Two Questions

Follow up questions for all participants:

1. Does creativity have a place in assessment?

2. What does creative assessment look like?

3. What are common characteristics of a creative classroom?

4. What are common characteristics of a creative teacher?

5. What are some teaching strategies that you employ that challenge kids to think "outside the box"?

Appendix N

Statement of Original Work

I attest that:

1. I have read, understood, and complied with all aspects of the Concordia University Portland Academic Integrity Policy during the development and writing of this dissertation.

2. Where information and/or materials from outside sources has been used in the production of this dissertation, all information and/or materials from outside sources has been properly referenced and all permissions required for use of the information and/or materials have been obtained, in accordance with research standards outlined in the Publication Manual of The American Psychological Association

Melissa M. Diebel

Digital Signature

Melissa M. Diebel

Name (Typed)

02/04/2018

Date