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by

Qian Huang

May 2016

PRE-KINDERGARTEN TEACHERS' PERSPECTIVES, STRATEGIES, AND  
DIFFICULTIES IN FOSTERING CHILDREN'S CREATIVITY

A Dissertation Presented to the  
Faculty of the College of Education  
University of Houston

In Partial Fulfillment  
of the Requirements for the Degree

Doctor of Education

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Approved by Dissertation Committee:

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Dr. Nicole Andrews, Chairperson

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Dr. Mimi Lee, Committee Member

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Dr. Teresa Edgar, Committee Member

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Ms. Amy Corron, Committee Member

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Dr. Robert H. McPherson, Dean  
College of Education

May 2016

## Dedication

I would like to dedicate this dissertation to my husband,

Yang Peng,

who has always encouraged me to believe in myself  
and given his unending support of my graduate studies.

To my parents,

Chuanyou Huang and Lirong Liu,

for always reminding me to be a good person.

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### Abstract

Along with the rapid accumulation of information and unpredictable changes in technology, creativity has been commonly recognized as a core competency and a most desirable skill for both individual success and society prosperity of the 21<sup>st</sup> century (Craft, 2010; Sawyer, 2011). Since creativity is in high demand for society, all levels of education carry the mission of fostering more creative thinkers in the classroom (Baldwin, 2010; Craft, 2010; Ewing & Tuthill, 2012). Early childhood, from birth to eight years old, has been identified as an essential period of the lifespan for brain and cognitive development (Copple & Bredekamp, 2009). The facilitation of creativity relates to children's physical, social and cognitive skills and it is crucial for a child's development as a whole child. Previous studies have demonstrated that every child has the potential of being creative and it is the teacher's job to support such enrichment (Cheung, 2012; Esquivel, 1995; Ewing & Tuthill, 2012). However, how to drive children's creativity is still a salient topic in early childhood classrooms.

The purpose of this qualitative study was to examine how pre-K teachers defined and valued creativity in young children, the types of teaching strategies they implemented or considered necessary in supporting children's creativity, and the difficulties they faced when pursuing creative enrichment in the classroom. To answer these questions, three full-time pre-K teachers, who had received a minimum of two years training with the United Way Bright Beginnings Program (UWBB), were recruited to participate in the study. The methodology of the study followed Carspecken's (1996) first three stages of critical qualitative research, starting by observing each participant's classroom



instruction. Based on this, the interview protocol was designed to guide subsequent face-to-face, individual interviews. The audio-recorded interview data were transcribed and coded to generate the results.

The findings suggested that pre-K teachers valued creativity and possessed a basic understanding of creativity in young children, yet their comprehension was neither adequate nor clear. Some teachers used strategies for children's creativity facilitation, however they were unaware of the methodologies and struggled to describe the rationale behind the usage of such strategies. While some teachers faced difficulties and were unable to intentionally integrate creativity into lesson plans, this study added a useful resource and illuminated best practices in the field while prompting teachers to pursue a more suitable definition of creativity in young children, and to explore more useful teaching strategies aimed at children's creativity. The findings also provided teacher educators and professional trainers with information regarding pre-K teachers' current status, concerns and difficulties in teaching for creativity. Further, the study suggested to teacher educators and professional trainers of a need to incorporate more specific lessons and targeted topic trainings on creativity. If these specific trainings were put into practice, they would assist teachers in translating knowledge and ideas into action and positively impact children's creativity.

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## Chapter I

### Introduction

#### Background

A major market shift from industrial economics to knowledge and information economics caused today's world to be increasingly fast-paced, uncertain, diverse, and tangled (Karakas & Kavas, 2008). Individuals today are experiencing things that were previously unimaginable. In the next decade, projections about the future will become more difficult due to complex global environments, rapidly accumulating knowledge bases, and exciting shifts in technology. Few can predict emergent inventions or techniques that may alter lifestyles nor forecast newly appearing paths. Novel ways of thinking and learning are needed to comprehend these world challenges, which in turn require an efficient work force with the ability to provide innovative solutions. Because of these cultural shifts, the ability to think critically and creatively during task completion is in high demand (Craft, 2010; Ewing & Tuthill, 2012; Gardner, 2009; Karakas & Kavas, 2008).

Creativity is a core competency of the 21<sup>st</sup> century and a key indicator of success because individuals use creativity to solve problems. Moreover, creativity is the skill that most demonstrates employability in the workplace (Lin, 2011; Yilmaz, 2011). In his book *Five Minds for the Future*, American developmental psychologist Howard Gardner outlined five cognitive abilities that predicted individuals' future success. One cognitive ability that Gardner highlighted was "the creating mind." Gardner (2009) emphasized that creativity was crucial to individual survival and societal prosperity, and thus worthwhile to cultivate both in the classroom and workplace (Gardner, 2009).

A Google Image search of the term “creativity” yields pictures featuring smiling children, confident faces of successful people, and colorful works of art. Such images convey positive attitudes and demonstrate creativity’s values to individuals as well as its association with novelty, bravery, diversity, and delight (Kaufman, 2009). Black (2003) and Mindham (2005) suggested that creativity might endow individuals with unusual and nontraditional ideas. If such unusual ideas could be combined with enthusiasm, dedication, motivation, self-consciousness, and self-confidence, there was an increased likelihood that complicated projects could be successfully completed. Studies also demonstrated that creative people possessed the capability to generate new ideas while creating job opportunities for others (Baldwin, 2010; Black, 2003; Craft, 2010). In one IBM survey, 1,500 CEOs ranked creativity as the first “leadership competency” (Bronson & Merryman, 2010).

U.S. President Barack Obama stressed that creativity was an indispensable resource for productive careers and happy lives as well as a powerful driving force for the nation to remain prosperous and powerful. In his 2011 state of the Union address, he presented:

The first step in winning the future is encouraging American innovation. None of us can predict with certainty what the next big industry will be or where the new jobs will come from. Thirty years ago, we couldn’t know that something called the Internet would lead to an economic revolution. What we can do—what America does better than anyone else—is spark the creativity and imagination of our people. (Obama, 2011)

Education's primary goal is to benefit students and society, and must therefore conform to global economic trends and social demands. This relationship between education and society has generated discussions on how to better prepare students for the future. Although it was previously thought that the main role of education was to transmit information and knowledge to students, this construct had been questioned and regarded as insufficient for the development of society in the future (Craft, 1999; Sawyer, 2010; Shaheen, 2011). Rather, today's classrooms have realized the importance of fostering students' abilities such as creative thinking. Indeed, Ewing and Tuthill (2012) stated that teachers who want their students to be successful need to equip them with abilities to think creatively. Because of the increasing challenges of the world, students must have creative thinking skills—specifically, they should be able to solve problems, think adaptively, take risks, be self-learning, and discover the unknown (Isbell & Raines, 2013).

In 1972, Paul Torrance, who is considered an authoritative researcher on teaching for creativity, indicated that creativity should be taught and developed in the classroom. Torrance (1972) suggested that through focused teaching one could transition a seemingly uncreative student to being a creative thinker; however, the absence of focused teaching could remove students' ability to be creative. He also mentioned that creative thinking for students could be achieved by using different teaching strategies. Economic demands increased the need for creative thinkers, which further pushed creativity to the forefront of education (Craft, 2001). In the 1990s, policymakers realized the importance of creativity as a "fundamental life skill" (Craft, 1999, p.136) that was expected to become more important in the 21<sup>st</sup> century (Craft, 2001, 2005, 2006), and emphasized the

need to incorporate it into educational guidelines and fostered in the classroom (Mindham, 2005). The Texas Education Agency (2008) categorized creativity within the context of fine arts, which required teachers to integrate it with children's skills in music, art, and dramatic expression and use fine arts as a medium for children's creative thinking, self-expression, and representation. In recent years, researchers and educators have deemed creativity to be a desired human characteristic for adaptation to the developmental demands of the world (Craft, 2005; Yilmaz, 2011). Baldwin (2010) stated that helping students think unconventionally and enhancing their creative thinking was paramount because it prepared students for rapid changes in social environments and knowledge. To carry out the 21<sup>st</sup> century mission of fostering more talented people, dedicated educators—especially early childhood educators—have been tasked with inspiring and enhancing creativity in the coming generations (Craft, 2005; Kemple & Nissenberg, 2000; Yilmaz, 2011).

Early childhood, from birth to eight years old, has been identified as an essential period of the lifespan for brain and cognitive development (Copple & Bredekamp, 2009). Harris (1994) commented:

The first days of life, first weeks, and first months are absolutely critical to optimal brain development. . . . We must remember. The first few years of life are not a rehearsal. This is the real show. Children do not really have an opportunity to try to get it right later (p. 6, as cited by Lally, 2011).

Children's most basic cognitive abilities are formed during the early childhood years (Hendrick & Weissman, 2011). Optimal child development depends not only on nutrition and health, but also, crucially, on the quality of education received.



Preschool education starts before traditional elementary education and is especially designed for children from 3 to 5 years old (Tomlinson & Hyson, 2009). During this period, prekindergarten (pre-K) teaching is "a cognitively complex task" (Barnett, 2011, p.48), since it requires teachers to both promote children's comprehensive competencies to deal with life and ensure their school readiness for kindergarten and beyond. Pre-K teachers should be equipped with both general and specialized knowledge about early childhood teaching as well as a good understanding of children's cognitive abilities. Barnett (2011) indicated that an efficient pre-K teacher was able to integrate advanced information, knowledge learned from school, and professional development trainings into curriculum to ensure the development of children's physical, emotional, social, creative, and cognitive skills and to prepare children for future life events.

For children, creativity is natural and necessary (Kohl, 2015). Providing children with creative experiences can promote their learning skills and ensure a solid foundation for their future development. Creativity allows children the ability to freely express their feelings and ideas without judgment or restriction. If children are able to follow their own interests, needs, and curiosity while they are engaged in the learning process, their creative thinking may be amplified. This increase in creative thinking is often accompanied by the development of children's physical, social, cognitive, language, and literacy skills (Hendrick & Weissman, 2009; Van Hoorn, Nourot, Scales, & Alward, 2011). For example, children's social and emotional skills may be nurtured by free expressions, which in turn can guide children as they cope with their feelings and interact with others appropriately. Creativity in children could also help to build their sense of self-worth and individuality, leading to an increased probability of providing their unique

societal contribution (Dollinger, 2003). Researchers and educators also found that children with high levels of creativity would display better development of socially appropriate behaviors, autonomy, independent judgment, and problem-solving skills (Copple & Bredekamp, 2009; Hendrick & Weissman, 2009; Van Hoorn et al., 2011). More importantly, creative individuals have been shown to possess a better sense of self, both in terms of who they are and who they want to be in the future, and therefore may be more likely to achieve success in life (Prentice, 2000; Yilmaz, 2011).

Creativity plays a significant role in a child's development into the whole child. Nurturing creativity in students is an essential goal in early childhood education (Sharp, 2001). Yet Torrance (1964) found that the sharpest increase in creativity occurred at the age of four, and a decline in creativity took place at age five. Thus it is useful to determine which special characteristics of four year-old children help them to learn and experience the world in unique and creative ways (Isbell & Raines, 2013). Further, determining unique learning characteristics of four year-olds can provide an insight on how best to discover, protect, and develop creativity in pre-K education. Children's learning mainly takes place in the classroom—teachers are largely responsible for conducting instructional strategies, designing daily learning activities, and creating an environment that supports children's early innovative thinking and creative abilities. Teachers are therefore critical for achievement of such creativity enhancement and face both challenges and opportunities in fostering children's creativity in the classroom (Craft, 2005; Torrance, 1964; Yilmaz, 2011).

## **Brief Overview of the Study**

Education's ability to influence future generations and infuse them with innovative and creative thinking will, in part, determine the future of a nation. However, creativity is not enhanced by merely issuing good policies, but rather by how creativity translates into real classroom practices (Cheung, 2012). Teachers play an essential role in helping students to gain knowledge and skills; teachers are entrusted with incorporating multiple skills into the curriculum and developing students' potential to meet complex social needs of the future (Jaquith, 2011). To foster students' creativity, teachers must be able to:

1. identify the characteristics of creative students,
2. recognize and praise creative production,
3. understand students' cognitive processes regarding creativity, and
4. establish an appropriate environment that promotes students' creativity (Chien & Hui, 2010; Diakidoy & Kanari, 1999; Hill, 1992).

Based on these requirements, Cheung (2012) identified two aspects that measured teachers' capability to facilitate creativity in the classroom:

1. teachers' beliefs in creativity, and
2. teaching strategies used to develop creativity in students.

Moreover, Ewing and Tuthill (2012) suggested regularly reaffirming and examining teaching practices to determine whether creative-friendly methods had been effectively implemented into curriculum and daily instruction, thereby ensuring classrooms that nurtured student creativity.

Building on previous research, the goal of the current study was to discover the perspectives of pre-K teachers on topics of creativity and creative students, teachers' instructional strategies, and teachers' perceived difficulties in facilitating creativity in classroom environments. Specifically, the following three research questions were used to guide this study:

1. What are pre-K teachers' perception of creativity in terms of how they value creativity and how they define creativity, characteristics of a creative student, and a creative-supportive early childhood classroom?
2. What instructional strategies do pre-K teachers use and consider effective to facilitate creative capacities in the classroom?
3. What difficulties do pre-K teachers face in attempting to foster creativity in the classroom?

Qualitative methods were used to investigate the research questions. The methodology adhered to guidelines set forth by Carspecken (1996), who indicated that qualitative research was essential to examine the nature of action, subjective experiences, and conditions which influenced actions and experiences as a part of the methodological framework. In this way, qualitative studies provided accuracy, truth, and depth to findings.

Study participants were three full-time pre-K teachers who had received a minimum of two years training with the United Way Bright Beginnings (UWBB) Program of the United Way of Greater Houston. The method of inquiry started by observing teachers during classroom instructions, based on these observations, the interview protocol was designed to examine the research questions and guided

subsequent face-to-face interviews. The audio-recorded interview data were transcribed. Carspecken's (1996) coding techniques were then used to generate the results. Study goals were that findings might add early child practitioners with sources and understanding of pre-K teachers' conceptions of creativity as well as teachers' strategies and difficulties in enhancing child creativity.

### **Need for the Study**

In 1999, the National Advisory on Creative and Cultural Education (NACCCE) emphasized that the function of education should be re-conceptualized to equip students with creative capabilities and innovative thinking. In the past, policymakers, educational researchers, and psychologists had highlighted the role of creativity in education (Mindham, 2005), and various states had advocated for fostering creativity in early age education; however, creativity has remained a secondary learning objective and not central to curricula (Ferrari, Cachia, & Punie, 2009). Although Sharp (2001) emphasized that early childhood was an important time to foster creative thinking, central research tenets remained unanswered including the meaning of creativity and what kinds of environments, strategies, and experiences benefited the development of creativity. Both researchers and teachers continued to face difficulties in teaching for creativity; these difficulties merited further clarification and exploration.

Rich and systematic research that targeted creativity started in 1950s, when Guilford demonstrated the usage of intelligence testing and highlighted the importance of divergent thinking (Craft, 2001). Since the 1990s, attention has been focused on how to assess and measure creativity, how to define the characteristics of creativity, and how to foster creativity via different teaching approaches (Craft, 2001). In much of the extant

literature, creativity has been discussed within the context of the arts. However, some researchers have posited that the scope of creativity in education should be extended to other educational subject areas (Craft, 2005).

Moreover, the term “creativity” remains ambiguous due to its complicated and often divergent definitions (Baer, 1993; Lin, 2011; Prentice, 2000). The definitions for creativity of children have been very limited (Shaheen, 2011). For example, Baer (1993) indicated that teachers lacked necessary training and capabilities to discover and stimulate students’ creative thinking, whereas Jaquith (2011) found that school leaders were conflicted over definitions of creativity and teachers possessed inaccurate concepts of creativity and lacked explicit strategies to enhance students’ creative thinking. Such situations blurred the role of creativity in education, and further resulted in paradoxes between society’s expectation of teachers’ roles in spurring creativity enrichment and teachers’ related classroom practices (Aljughaiman & Mowrer-Reynolds, 2005).

Moreover, most studies on creativity to-date were conducted using quantitative methods. The researcher of current study considered such methods to be sub-optimal for investigation of the topic of creativity and teachers’ understanding of creativity. As previously stated, the definition of creativity was unclear, divergent, and complex (Baer, 1993; Lin, 2011; Prentice, 2000). Additionally, the definition of creativity varied among different teachers. Using an unclear definition of creativity to measure teachers’ conceptions might generate invalid results. Therefore, a study was needed to provide teachers the opportunity to define the meaning of creativity in young children based on their academic knowledge and teaching experiences.

All children have the potential to be creative thinkers. Creativity was shown to be teachable and should be induced for development (Runco, 2003; Torrance, 1972). Teachers were also responsible for teaching students creative thinking, identifying students' creative behaviors, and planning a classroom environment to facilitate creativity (Chien & Hui, 2010; Diakidoy & Kanari, 1999). Studies found that children's creative thinking depended on well-trained teachers who possessed good instructional strategies (Chien & Hui, 2010; Davies, 2010; Esquivel, 1995; Hui, He, & Liu-Au, 2013). However, few studies examined classroom strategies that could be beneficial to students' creativity. Providing teachers with minimal exposure on useful instructional strategies intended to stimulate creativity in children limited the specificity and value of "creativity facilitation" and diminished its impact on young children. NACCCE (1999) found that creativity flourished in classrooms where teachers used imaginative methods to impart subject knowledge in more interesting, exciting, and productive ways during the daily instruction. To better support the development of creativity in students, teachers should become more creative in activity planning and strategy implementation. This, in turn, would produce a learning environment in which creativity was highly valued and subtly integrated into the educational content (Al-Suleiman, 2009; Craft, 2005; Trna, 2013). Because of these knowledge gaps, this qualitative methodological study was initiated to explore alternate teaching examples and strategies for creativity development. The teacher participants' real-life experiences were used as a reference point to enlighten curriculum designers and educator colleagues on the creation of novel teaching ideas and methods to facilitate creativity in the classroom.

Moreover, Newton and Newton (2010) found that early childhood teachers neither fostered creative thinking in the classroom nor had adequate time to engage in activities or lessons for creativity enhancement. Also, the researchers found inconsistencies between teachers' perceptions of creativity and their actual classroom practices. That is, teachers' good beliefs of creativity might not have been reflected in their teaching practices (Cheung, 2012; Mansour, 2009). Other researchers concluded that the relationship between teachers' beliefs of creativity and their actual teaching practices was complicated and dynamic (Cheung, 2012; Mansour, 2009; McMullen, 1999; Newton & Newton, 2010). Some reasons for teachers' lack of creativity-promoting techniques that could bridge traditional teachings styles with innovative instructional methods might be their environments, their own understanding and ideas of fostering creativity in students, constraints of time and space, limited teaching resources, high levels of stress, and the lack of a strong support network (Byron, 2007; Cheung, 2012; Newton & Newton, 2010). As a prospective early childhood educator, this researcher was compelled to search for solutions to minimize the gap, and believed that teachers could contribute something to the field. Therefore, this study was designed to further detect teachers' challenges and identify internal or external reasons for discrepancies that led teachers to teach in a way that was not congruent with their beliefs.

To conclude, knowledge of the ability of in-service teachers to leverage teaching methods to enhance children's creativity was limited, especially for pre-K teachers. Specifically, there were few studies that used qualitative methods to comprehensively examine pre-K teachers' perspectives, strategies, and difficulties with children's creative development. To elevate the status of creativity in the classroom and to ensure teachers



better serve their students, further research on teachers' views and practices was needed (Kampylis, 2010; Yilmaz, 2011). For these reasons, the researcher conducted the study using a qualitative method to yield valid results on teachers' understanding of creativity in young children and to equip teachers with complementary strategies to maintain a creativity-enriched classroom environment. Meanwhile, this study perceived gaps in previous studies and for which the researcher deemed worthy of further exploration.

### **Statement of the Problem**

Education reform in Western countries has produced advanced teaching ideas and high standards aimed at facilitating creative thinking in students. Many American educators have recognized that fostering students' creativity could help build their self-worth and individuality, which could ultimately increase the probability of their unique contributions to society (Hendrick & Weissman, 2009). However, while America had been considered one of the world's most innovative societies, educationists realized that it had experienced a decrease in creativity during recent years. Dr. Kung Hee Kim, an associate professor of educational psychology at the College of William & Mary, conducted a study in 2010 using Torrance Tests of Creative Thinking (TTCT) to investigate creativity in almost 300,000 American adults and children. Her findings concluded that creativity has decreased among children in the United States (Bronson & Merryman, 2010). Changes in education policies and standards over the past two decades were, in part, the cause for this decline. Three major factors that might threaten students' creativity were listed below.

**The intrinsic duty of schooling.** Creativity was found to be influenced by cultural context and conditions (Robinson, 2001). In other words, the learning

environment was essential to encouraging students' creative performances. However, school was itself a bureaucratic institution (Sawyer, 2010). Sawyer (2010) commented that the intrinsic duty of school was to reproduce the social order, which could prove antagonistic towards nurturing innovative students because creative people often required the potential to challenge social order. These schooling characteristics dictated that teachers' main job was to transmit knowledge to students. To determine the success of schooling, students were tested on how many facts and procedures they retained, just as educational status was determined by the amount of information collected by students (Sawyer, 2010). That criterion forced teachers to require every student to memorize the same core knowledge without complaint. These actions actively discouraged creativity in the classroom (Sawyer, 2010). Educationists found that U.S. schools failed to encourage and might impede creativity facilitation among students across different branches of learning and subjects (Bronson & Merryman, 2010; McWilliam, 2007).

**A difficult balance between academic emphasis and whole child approach.**

The poor academic performance of students in America caused educators and policymakers to attempt to improve students' cognitive and academic skills (Bishop-Josef & Zigler, 2011). Duncan (2011) highlighted that young children's cognitive abilities correlated to their subsequent academic achievements in school. And the Matthew Effect indicated that "For unto everyone that hath shall be given, and he shall have abundance. But from him that hath not shall be taken away even that which he hath" (Matthew, XXV:29, n.d.), i.e., children who knew more at the beginning had better understanding capabilities and quicker learning skills than those who knew less at the outset (Hirsch Jr, 2011). Therefore, researchers suggested that early childhood teachers should reduce time

spent developing children's nonacademic skills, such as emotional and physical wellness, and instead engage them in additional literacy and mathematic instruction (Bishop-Josef, & Zigler, 2011). However, other researchers advocated for a whole-child approach, arguing that overemphasis on academic development and abandonment of nonacademic competence was shortsighted and adversely affected the primary goals of preschools and kindergartens. These researchers found that children who received more didactic instruction exhibited less creativity in their work, suffered a higher degree of emotional stress, had lower skills of social interaction, and failed to show increased academic performance compared to students who received child-centered curriculum (Van Hoorn et al., 2011). Researchers also realized that forcing children away from recess and play to drill them on academic studying hindered their natural development. Thus the debate between academic emphasis and whole child approach in the early childhood classroom remained unresolved.

**Drill-and-kill teaching style and high-stakes tests.** In the United States, there was an increase in mandated testing under the 2001 federal education act No Child Left Behind (NCLB) (Madaus & John, 2012). Early childhood programs succumbed to the pressures of enhancing students' testing scores, which were considered a major and accurate source in determining students' abilities and the quality of teachers and schools. Pre-K program certification was linked to how well the program could use reading and social skills tests to predict children's later academic performance (Madaus & John, 2012). Many schools applied "Intelligence" test scores as a basis for admission to kindergarten and promotion to first grade (Madaus & John, 2012). Teachers found themselves under tremendous stress for accountability on standardized tests scores, for

improving students' literacy and numeracy, and for preparing students to achieve success in later academic learning. High-stakes testing affected teaching methods early in preschools, resulting in a reduction or even elimination of the time teachers spend on students' skills such as emotional and social development. Reed, Hirsh-Pasek, and Golinkoff (2012) indicated that a direct instructional approach decreased the productivity of creative thinkers and active learners because more teacher-directed instructional styles have reduced the ability for students to express their own ideas. Moreover, educators expressed concerns that strict content standards and high accountability limited teachers' instructional content while decreasing the time that teachers could spend in developing students' thinking skills (Baer & Garrett, 2010).

In summary, beginning in preschool, teachers have a central influence on increasing children's creativity (Craft, 2005; Torrance, 1964; Yilmaz, 2011). It was deemed crucial to enrich these pre-K teachers' understanding of future social demands for productive citizens, to equip teachers with appropriate understanding and sufficient knowledge of creativity in children, to increase teachers' awareness to implement effective strategies and instructional ideas to develop children's creativity in the classroom, and to provide teachers with wisdom to overcome difficulties and balance between content knowledge teaching and creativity stimulation. In this manner, more teachers in the field could significantly impact the classroom to trigger children's natural interests in learning and to support children to be active learners and creative thinkers.

### **Significance of the Study**

Society and the workplace exist in a constant state of change. Creative thinkers and problem solvers who adapt to the challenges of complex social environments have

been in high demand (Craft, 2010; Sawyer, 2011; Yilmaz, 2011). In an attempt to complete the mission of the 21<sup>st</sup> century and resolve issues of decreased creativity in classrooms, intense studies have been conducted on teaching for creativity. Many studies have strengthened teachers' crucial role in planning classroom activities and supported a desirable skill of the 21<sup>st</sup> century: creativity (Chien & Hui, 2010; Diakidoy & Kanari, 1999; Eason, Giannangelo, & Franceschini, 2009; Hendrick & Weissman, 2009; Van Hoorn et al., 2011; Yilmaz, 2011). Efforts have been also made to discuss the extent to which creativity could be enhanced in the classroom, the characteristics of creative people, and the support mechanisms that could be implemented for creative thinking (Andiliou & Murphy, 2012; Chien & Hui, 2010; Diakidoy & Kanari, 1999; Reed et al., 2012; Torrance, 1972;). Previous studies have laid the foundation for the current study and necessitated a deeper dive on the topic.

After reviewing extant literature, a gap was found in the existing research base regarding pre-K teachers' views and abilities to enhance creativity in the classroom. Yilmaz (2011) indicated that teachers' views and their levels of knowledge regarding creativity were important factors for the development of creativity in children. Thus this current study focused on understanding the perspectives of three pre-K teachers of the UWBB on the topics of creativity in students. In particular, the study documented how these teachers valued and defined creativity, characteristics of creative students, creative-supportive classroom environments, and what teaching strategies have been employed or considered necessary to enhance students' creativity. Such questions not only drew teachers' attention to the topic but also provided opportunities for them to reflect on their knowledge and better serve children's creative thinking in the classroom. More

importantly, obtaining this information helped the researcher identify misconceptions or limitations within teachers' understanding of creativity and how teachers' views and conceptions of creativity had influenced their instructional strategies in the classroom. Gaps between teachers' expectation and conceptions of creativity and their everyday teaching practices, as well as obstacles and difficulties that teachers encountered in protecting and facilitating students' creative potential in the classroom, were allowed to emerge. The researcher attempted to add a useful resource regarding definitions of creativity in young children and strategies of creativity teaching for pre-K teachers to help them achieve a better understanding of the pedagogy and learning context that could develop or impede creativity among students. In other words, this study was aimed at shedding new light for early childhood practitioners, obtaining alternative ideas about children's creativity and developmental conditions, and promoting strategies for children's creative performance. Moreover, based on the information, proposed suggestions and possible solutions could be made for overcoming difficulties and minimizing gaps. It was believed that a real possibility existed of translating salient ideas and thinking into real classroom practices.

Previous research had suggested that insufficient professional training and inadequate knowledge regarding creativity could impede teachers' positive impulses for detecting, preserving, and stimulating creative performances among students in the classroom. In some cases, teachers' ignorance and inappropriate actions might have even hindered and diminished students' innovative thinking and creative behaviors (Aljughaiman & Mowrer-Reynolds, 2005; Baer, 1993; Byron, 2007; Jaquith, 2011). Teachers could help by promoting their own educational settings and professional

trainings (Yilmaz, 2011). Diakidoy and Kanari (1999) indicated that uncovering early childhood teachers' beliefs about creativity and their teaching practices would be beneficial to schools' effectiveness in promoting creativity in children. More importantly, these activities would provide a solid research foundation for both pre-service preparation programs and in-service professional development training for early childhood practitioners. This study recorded in-service teachers' current views and situations involving creativity, which added to understanding of the topic and contributed to quality teacher education and training programs. In other words, the results of the study could provide valuable source materials and appropriate recommendations to teacher educators and professional development providers. These individuals could build upon existing practices, current situations, and problems of teachers in order to design more pointed practice and make better decisions on necessary educational experiences and trainings for both experienced and prospective teachers. Such actions could ultimately bring desirable changes and promote best practices for creativity in early childhood classroom education (Shaheen, 2011).

Lastly, this study aimed to benefit parents and school leaders. Yilmaz (2011) found that teachers were able to affect people around them. For example, teachers who had a better understanding of creativity could assuage parents' concerns and provide them with appropriate suggestions to support children's creativity at home. Also, teachers could share ideas and increase school administrators' awareness of how to support their teaching practices in the most effective way. To conclude, the study goal was that optimized teaching and intervention would ultimately have a positive impact on children

by preparing them to be creative and successful in responding to the increasing demands of the workforce in the near future.

### **Research Questions**

Based on the review of relevant studies and guided by the intentions of the present study, the following three research questions were posed:

1. What are pre-K teachers' perspectives on creativity in terms of how they value creativity and how they define creativity, characteristics of a creative student, and a creative-supportive early childhood classroom?
2. What instructional strategies do pre-K teachers use or consider effective to facilitate creative capacities in the classroom?
3. What difficulties do pre-K teachers face in attempting to foster creativity in the classroom?



## **Chapter II**

### **Literature Review**

The literature review began with a survey of the complex definitions of creativity, including descriptions from psychological and educational studies, characteristics of creative people, creative products and processes, and the significance of creativity to humans. Documenting the definitions of creativity supported the foundation of the current study. Five important theories were found to illustrate the relationship between classroom environments and creativity in children. The existence of creativity as one of children's natural abilities was examined. Studies of neuroscience, concepts of "whole child development," and long-term economic returns of creativity were also addressed to illuminate the importance of protecting and supporting creative and independent thinkers at early ages; these investigations, in turn, underscored the critical role of early childhood teachers in catalyzing such enrichment in the classroom. The researcher reviewed teachers' beliefs on creativity in students and probed factors that affected teachers' understanding and identification of creative students and work. Teaching strategies were discussed based on the results of varied studies, including their promotion of creativity-enriched learning environments; their encouragement of creative impulses of students; their relationships to teachers' conceptions, characteristics, attitudes, and teaching experiences; and their effects on the outcomes of children's creativity. Within such research, teachers' roles were centered in strategy implementation and environment preparation. The literature also defined ways in which teachers were positioned in a "professional knowledge landscape" (Clandinin & Connelly, 1996), wherein teachers shifted between establishing their roles, developing their teaching knowledge, and

learning creativity from interactions both in and out of classrooms. Study of these theories led to an examination of the ways in which internal and external factors impacted teachers' perspectives and teaching strategies toward creativity enrichment in the classroom. The chapter ends with a conclusion in response to the study's research questions.

Seven main topics were addressed in this chapter:

1. definitions of creativity,
2. theoretical Framework,
3. creativity in children and early childhood education,
4. teachers' roles and beliefs,
5. the classroom environment and teaching strategies,
6. teachers' knowledge and challenges, and
7. conclusion.

### **Definitions of Creativity**

The definition of creativity is complicated, divergent, and personal because people view creativity based on their experiences, perspectives, and cultural backgrounds as well as the dissimilar contexts in which individuals view their subjects (Lin, 2011; Prentice, 2000). Sharp (2001) stated that creativity was difficult to define. Baer (2003) indicated that, "Of all the things that it is hard to understand—and this would be a very long list—creativity is certainly one of the hardest, and most mysterious, even when considered within the confines of a single culture" (p. 37).

The study researcher found that a variety of meanings and discussions were assigned to creativity and creative people. Previous researchers shared their

understanding of creativity based on their perspectives, work encounters, and investigative experiences (Craft, 2001). Some scholars considered creativity to be driven by the subconscious (Lin, 2011). Other investigators posited that creativity was a synthesis of complicated factors by creative individuals using a sophisticated process involving curiosity, distinctiveness, spontaneity, and originality (Glaveanu, 2011; Lin, 2011; Smith, 1996). Some scholars linked creativity to intelligence, personality, motivation, needs, and environmental circumstances (Fisher, 2013; Gardner, 1983; Guilford, 1950; Sternberg, 2001). Sternberg (2006) stated that creativity might be determined by people's knowledge, cognitive abilities, thinking styles, personality, motivations, and surroundings. Guilford (1950) found that creativity consisted of original and divergent thinking. He further distinguished between intelligence and creativity, and emphasized that people with high IQ scores did not necessarily possess creative productivity. Creativity also was considered to be a core human competency that should be acquired (Prentice, 2000). Other researchers have suggested that creativity belonged to all individuals and was a trait that could be learned and developed during interpersonal and environmental interactions (Amabile, 1983; Lin, 2011; Sternberg, 2003).

During the past decade, much effort was made to seek a generalized, conventional, and explicit interpretation of creativity (Lin, 2011; Prentice, 2000; Bramwell, Reilly, Lilly, Bramwell, & Kronish, 2011); however, the concept of creativity remained ambiguous with numerous meanings (Sharp, 2004). Difficulties in defining creativity also limited its practice and implementation in the classroom (Craft, 2003). Fisher (2013) indicated that creative people enjoyed exciting moments of idea formation and production of valuable items, yet showed bravery in confronting failures and taking

risks. It was therefore likely that creative individuals possessed unique characteristics and special environments to nurture their creative thinking. Guided by previous studies, the researcher synthesized ideas and approaches to the definition of creativity using specific attributes: characteristics of a creative person, the creative product, the creative process, and the significance of creativity.

**Characteristics of a creative person.** Creative adults were described in various ways:

flexibility, fluency, elaboration, tolerance of ambiguity, originality, breadth of interest, sensitivity, curiosity, independence, reflection, action, concentration and persistence, commitment, expression of total personality, and sense of humor (Guilford, n.d., pp. 2-4).

Torrance (1962) indicated that creative individuals possessed an awareness of problems, applied existing knowledge to solve problems, recognized the importance of consistent learning and multiple attempts at success, and valued persistence and concentration in pursuit of goals. Torrance also showed that such individuals used creative abilities during task completion such as hypothesizing and approaching problems in various ways. Duff (1998) analyzed the myriad definitions of creativity and suggested that creativity at its core was the ability of people to

1. view concepts from different angles,
2. apply past experiences to new situations to provide novel analysis,
3. seek original and unique ways to problem solve, and
4. hypothesize next steps using given information.

Other researchers expressed that creative people discovered things of originality and value, generated ideas of rebelliousness and unconventionality, and accomplished work of high recognition and significance (Feldman & Benjamin, 2006; Wegerif, 2010). Fox and Schirmacher (2011) considered that creative people were able to build relationships between two or more seemingly unrelated things. Isbell and Raines (2013) defined creative people as thinking differently, possessing new ideas, and forming new combinations of things. Other researchers listed qualities required for creativity: curiosity, flexible thinking, problem-solving, being natural, risk-taking, being critical, openness to new ideas, spontaneity, self-confidence, playfulness, adventurousness, independence, open-mindedness, and intrinsic motivation (Amabile, 1996; Cropley, 1992; 1997; Diakidoy & Kanari, 1999; Gardner, 1988; Torrance, 1962, 1964, 1992).

**The creative product.** Researchers differentiated creativity into two types according to its origins and ultimate objectives. The first type of creativity was product-oriented creativity, which was evaluated by its outcomes. The second type of creativity was process-oriented creativity, which emphasized the thinking procedure and methods of generating new and effective ideas or solutions to complete tasks or problems (Guildford, 1950; Lin, 2011).

Creative products were defined as outcomes or outputs that were original, new, novel, unique, productive, valuable, and crucial (Cropley, 2004; Guildford, 1950; Lin, 2011; Mayer, 1999, Torrance, 1988). These descriptive words were further grouped into two qualities that creative products should embody: novelty and goodness (Russ, 1993). Novelty was represented by descriptors such as original, new, and unique; goodness was indicated using descriptors such as significant, appropriate, adaptive, useful, aesthetically

pleasing, productive, valuable, and crucial (Mayer, 1999; Russ, 1993; Shaheen, 2011). Other researchers who shared similar perspectives also evaluated creative products on two criteria:

1. originality, and
2. usefulness to individuals and society (Amabile, 1998; Dickhut, 2003; Mayer, 1999; Hennessey & Amabile, 1988; Tardif & Sternberg, 1988; Torrance, 1970).

The usefulness of creative products would be judged and accepted by groups of people, communities, cultures, or teachers (Csikszentmihalyi, 1990; Gibson, 2005; Kwang, 2001).

Imagination was mentioned by researchers when conceptualizing creative products. NACCCE (1999) suggested that creativity was “imaginative activity fashioned so as to produce outcomes that are both original and of value” (p. 30). This group of researchers believed that successful application of imaginative thinking influenced creative outcomes and elevated their value (NACCCE, 1999; Odena, 2001; Robinson, 2001). Among a variety of definitions of creativity, educational researchers commonly used terms like novelty, originality, imaginative, newness, and value to studies (Amabile, 1987; Eysenck, 1994; Fisher, 2013; Gardner, 1993; Kaufmann, 2003; Martindale, 1999; NACCCE, 1999; Perkins, 1988; Robinson, 2001; Shaheen, 2011; Sternberg, 2001).

However, creativity did not need to be assessed solely by products or outcomes (Craft, 2000). Some researchers proposed that creativity could be valued by the process rather than the final product because it could be difficult to observe and evaluate creativity through outcomes, especially in early childhood classrooms (Barron, 1988; Eason et al., 2009; Schirmacher, 2006) Therefore, early childhood educators deemed it

more important to appreciate students' thinking processes when involved in creative acts (Isbell & Raines, 2013). This conclusion necessitated learning the process of creative thinking.

**The creative process.** Wallas (1926) created a four-step model to define the creative process: preparation, incubation, illumination, and verification. Preparation referred to learning and exploring the problem by collecting information and sources. Incubation involved thinking processes that sought possibilities and discovered things that were seemingly unrelated to the problem. Illumination was the creation of the new and useful ideas, which fit the process of problem solving. Verification was the amount of time needed to put ideas into practice to determine their effectiveness. Dewey (1933) developed a similar model using five steps of a reflective thinking process, which itself was considered to be an effective method for problem solving and decision making.

These five steps included:

1. problem identification and formulation,
2. analysis of causes and effects as well as generation of criteria for judgment of final solutions,
3. brainstorming various possible solutions,
4. evaluation of proposed solutions, and
5. selection of the best solution wherein criteria were met and action plans begun.

Guilford (1950) proposed four terms to describe creative thinking: flexibility, fluency, originality, and elaboration. Based on Guildford (1950)'s proposal, Torrance (1969) established a framework to evaluate the process of creative thinking, which included four steps that were implemented in classrooms (Cray-Andrews & Baum, 1996;

Fisher, 2013). Fluency was the first step to generate various ideas or methods of problem solving. Additionally, fluency emphasized the quantity of ideas as well as an understanding of information rather than memorization. Flexibility was the second step and it referred to the capability of viewing things or situations from different perspectives and formulating ideas with different possibilities and approaches. The third step was originality and it represented unique ideas, novel views, and unusual ways of synthesizing existing information. The fourth step was elaboration, which involved production of extended ideas, addition of details, and clarifications and in turn contributed improved understanding of topics.

Torrance also emphasized that the creative process involved novel ideas, different perspectives, removal of barriers, and integration of ideas and relationships (Craft, 2001). Moreover, Torrance considered creativity to be the process of realizing a problem, looking for solutions, establishing hypotheses, putting solutions into practices, and sharing results with others. NACCCE (1999) outlined four critical components of creative processes:

1. engaged thinking and imaginative behaviors,
2. conduct of reasonable and purposeful activities,
3. emphasis of goal achievement within imaginative activities, and
4. high correlation between outcomes and original purposes of the activities.

**The significance of creativity.** Researchers described creativity based on its significant value to humans. Existing literature clearly showed that numerous affirmative evaluations of creativity had been made, which validated the need and worth of the current study. For instance, Sharp (2004) stated that the development of creativity



benefited both individual success and economic development. Renzulli and Wet (2010) indicated that creative people could surpass their known information, ask unique questions, face difficulties with strong self-confidence, and ultimately contribute more to the workplace through key suggestions and solutions. Other researchers supported that creativity was relevant to high productivity, effectiveness, confidence, independence, and success (Black, 2003; Craft, 2010; Kaufman, 2009; Lin, 2011; Minddham, 2005; Sawyer, 2011). Many studies identified creativity as not only a thinking skill or a personal trait but also as an essential behavior that could be stimulated through interactions with others, could provide an optimistic attitude for dealing with difficulties, could impart a positive outlook on the world, and most importantly, could serve as a necessary tool to achieving success in life (Amabile, 1983; Davis, 2004; Lin, 2011; Sternberg, 2003). Further, Csikszentmihalyi (1996) stated that creativity provided our lives with meaning while making our future more rich, profound, and interesting.

Craft (2000) categorized the concept of creativity into “big c” creativity and “little c” creativity. “Big c” creativity represented creative products or the creation of new ideas that had real significance and great value to the progress of society and culture. This type of creativity was also called “cultural creativity” (Isbell & Raines, 2013, p. 5) or “high creativity” (Craft, 2001, p. 13). This type of creativity was very rare and could bring change and knowledge to the world (Dacey & Lennon, 2000; Gardner, 1999; Isbell & Raines, 2013). Feldman, Csikszentmihalyi, and Gardner (1994, as cited by Craft, 2001) stated that “big c” creativity was “the achievement of something remarkable and new, something which transforms and changes a field of endeavor in a significant way... the kinds of things that people do that change the world” (p. 1).

Conversely, “little c” creativity represented daily creativity, including people’s critical and divergent thinking. It was also named as “personal creativity” (Isbell & Raines, 2013, p. 6) or “democratic creativity” (Craft, 2001, p. 14) that normal people displayed during their daily lives (Isbell & Raines, 2013). This “little c” creativity could be a novel idea that was previously unknown to the person. The concept of “little c” creativity was more closely related to education than “big c” creativity, especially in daily early childhood classrooms that required creative actions to be elicited (Esquivel, 1995; Isbell & Raines, 2013; Lin, 2011; NACCCE, 1999). Hence, the type of “creativity” mentioned in this current study centered on the concept of “little c” creativity, which occurred naturally within every child and might be supported and valued by teachers (Craft, 2004; NACCCE, 1999). The review of previous studies served to document various understandings of creativity, provided a foundation for probing teachers’ perspectives on identifying creative students and creative work, and demonstrated a need to examine teachers’ capabilities of integrating concepts with methods for improving children’s creativity in daily classroom environments.

### **Theoretical Framework**

Piaget (1960)’s constructivist theory, Vygotsky’s (1962) social constructivist theory, Maslow (1970) and Rogers (1962)’s humanistic theory, Urban’s (1995) three components of creativity theory, and Rhodes’s (1961) four “Ps” theory provided a solid theoretical foundation to examine relationships between creativity and learning environments. These five aforementioned theories suggested the existence of a relationship between teaching and learning. In particular, these theories introduced audiences to ways in which children learned and grew as well as potential methods to

achieve children's potential and motivate their learning. The relationship between children's experiences, ideas, and the environment underscored teachers' main roles of providing guidance and challenging students; helping students build their knowledge; increasing students' experiences; stimulating students' independent thinking; and inspiring students' creativity. Therefore, understanding these theories increased the understanding of relationships between teachers' perspectives, strategies toward creativity, and students' development of creativity.

Piaget (1960) documented that interactions between “nature” and “nurture” guided children's cognitive development. According to Piaget's constructivist theory, during assimilation and accommodation children actively learned new concepts and built their knowledge within the environment. Piaget highlighted that an optimal learning environment was one in which children were considered to be central to the construction of their understanding of the world. Piaget identified four stages of a child's cognitive development: sensorimotor stage (from birth to 2 years old), preoperational stage (from 2 years old to 7 years old), concrete operational stage (7 years old to 11 years old), and formal operational stage (11 years old to 17 years old). The sensorimotor stage was a time period when children learned and interacted with the world through their sensations and body movements. To trigger children's curiosity to discover, manipulate, and explore the outside world, adults should expose children to multiple materials and incorporate exercises and experiences with children's senses. Children entered the preoperational stage around age two and exited at age seven. During this period, children were able to use symbols to represent actual subjects and to classify things in simple ways. More importantly, children began to engage in fantasy, becoming experts in combining

imagination with things learned from the environment into dramatic play. Therefore, the development of children's creative thinking fell into the second stage of Piaget (1961)'s cognitive development, which also implied that it was an optimal and appropriate time for adults to conduct strategies to enhance such thoughts effectively. According to Isbell & Raines (2013), this theory provided a basis for designing classrooms in which children could be exposed to different types of materials; having numerous activities for their experimentation, exploration, and discovery; and meeting their individual needs and interests. Children should also be encouraged to explore new ideas and to build their knowledge based on things they considered meaningful (Ozer, 2004).

Vygotsky's (1962) social constructivist theory highlighted the importance of the environment on children's cognitive development. Social interactions and economic influences played fundamental roles in building and constructing children's cognition. Vygotsky believed that children were born with basic cognitive capabilities such as memory, perception, and attention. As they grew, children were allowed many chances to interact with capable adults and peers, which, in turn, built their knowledge and developed their thinking. Vygotsky's theory supported teachers' roles as mentors, supporters, and coordinators for children's learning and thinking; in exposing children to various materials; in giving children challenging and age-appropriate tasks; in assisting children to comprehend new concepts; and in transitioning children from actual developmental levels to potential levels within their zone of proximal development (ZPD). Therefore, teachers engaged children in discovery learning and assigned them open-ended questions and unfamiliar tasks to increase their creative thinking abilities. Additionally, this social constructivist theory highlighted the function of play and art

activities rather than individual play, in which children were able to work and collaborate together to finish a project and to have many interactions with other kids. Such types of activities enriched children's learning as well as their creative opportunities (Isbell & Rainess, 2013).

Abraham Maslow and Carl Rogers contributed to studies of human behavior, personality, and individual satisfaction. These two humanistic psychologists believed that creativity was inherent in every individual and that creative potential could be developed and reached. Maslow (1970) created a motivation theory to examine what actually drove people to act in the ways they chose to act. He emphasized that all human had certain needs and desires, which if unmet would cause them to seek alternative fulfillment. Further, when one need was met, individuals would continually pursue higher level needs. In other words, previous needs laid the foundation for the next level of needs. Her hierarchy of needs consisted of five levels. They were biological and physiological needs, safety needs, love and belongingness needs, esteem needs, and self-actualization needs. Maslow (1970) mentioned that every individual had the potential to achieve each need and move toward the highest level of personal development, although social environments and life experiences could influence progress and achievement.

Creativity is an aspect of self-actualization needs (Isbell & Rainess, 2013) that required people to fulfill their personal potential, realize their capabilities, and be as good as they could be. Maslow (1970) stressed that people who reached the level of self-actualization embraced creativity and a productive life. Therefore, her theory hinted the importance of education in enabling children's basic needs and more importantly to support them in becoming fully realized human beings and good people (Isbell &

Rainess, 2013, Maslow, 1970). Rogers (1962) contributed more information for creativity. He proposed the concept of psychologically safe environments in which teachers provided a free and respectful atmosphere for children's growth. Within the environment, children were allowed to conduct their creative thinking, take risks, explore materials, test ideas unconditionally, and pursue their interests without fear of disapproval, judgment, or criticism. This type of environment was essential to facilitate children's health development, independence, self-confidence, and creativity (Isbell & Rainess, 2013).

Urban (1995) proposed that creativity was comprised of cognition, personality, and the environment. Cognition related to individuals' divergent thinking, knowledge, and experiences (Chien & Hui, 2010; George & Zhou, 2001; Lee & Kim, 2005; Sternberg, 1997). Personality represented individuals' motivation, openness, allegiance, and patience to complete tasks (Amabile, 1983; Lee & Kim, 2005; Sternberg, 1997). The environment identified the "individual, local, and global dimension" (Lee & Kim, 2005, p.100), which affected people's perspectives and behaviors through interactions with others and social environments (Amabile, 1983). This theory implied the relationship between children's creativity and the classroom environment in which creativity was enhanced.

Rhodes (1961) constructed the definition of creativity by using four "Ps"—person, product, process, and press—in which "person" was the individual who created creative outcomes or conducted creative thinking; "product" represented creative outcomes; "process" was the progress or stages of developing creative ideas or products; and "press" described the social or cultural environment where creativity was manifested.

The “press” in Rhodes’s (1961) four Ps theory highlighted the importance of the environment in individuals’ creativity development. Rhodes also pointed out that creativity could flourish only in a free and less restrictive condition.

### **Creativity in Children and Early Childhood Education**

Based on theories presented in the theoretical framework, the researcher probed the meaning of creativity in young children. Amabile (2001) at the Harvard Business School conducted a study of creativity. She examined three categories of creativity: domain-relevant skills, creativity-relevant processes, and task motivation. Her conclusions were that anyone with normal intelligence was capable of doing some degree of creative work. Children were naturally endowed with creativity, which could be detected in their artwork and play (Glaveanu, 2011). For example, a child used his crayons to draw pictures without written words to leave his mother a message to return a call (Smith, 1996). The child combined his previous knowledge with creativity to deliver information in a manner the adult would understand. Drawing was a special skill and an alternate way for children to compensate for limitations in writing and speaking at very early ages, and to assist them in effective and understandable ways to express their feelings and opinions.

Smith (1996) provided another example of how a child used a piece of fur to represent a skunk during dramatic play. This behavior illustrated that during play, children had opportunities to practice their abilities of substitution for actual subjects. Feldman and Benjamin (2006) concurred that early childhood education must serve to develop creativity in every child. However, studies also found that children’s natural creativity tendencies could be diminished without protection and appropriate cultivation

(Glaveanu, 2011; Lin, 2011; Mindham, 2005). These findings spurred further discussions and studies on how to maintain and develop creativity in young children.

Compared to formal education settings in which children received more teaching of knowledge and fewer opportunities to practice their creative thinking, early childhood education (in particular pre-K classrooms) was considered the best and most critical time to support creative thinking (Craft, 2005; Craft, Jeffrey, & Leibling, 2001; Yilmaz, 2011). Neuroscience researchers discovered that 90 percent of children's brains developed during the first five years of their lives (Grindal, Hinton, & Shonkoff, 2012). The same study also found that children's interactions with others and the environment could stimulate their brain neurons. During the process of connection and formation of these neurons, the brain gradually developed. By age 5, children who received limited learning sources, care giving, and responses were less likely to have a high IQ scores, academic achievement, and experienced higher rates of behavioral disorders than children who lived in happy, supportive, and friendly learning environments (Grindal et al., 2012). A creative-friendly classroom environment was one which allowed children to explore, to do things differently, to solve problems, and to take risks; within such an atmosphere, children were found to have exhibited their creative potentials (Baran, 2011; Isbell & Raines, 2013).

Studies also emphasized the importance and essence of preschools, which especially affected children from three to five years old. Tomlinson and Hyson (2009) indicated that the preschool years, or "the years before school attendance," was a golden and optimal period for individual development and learning for all areas of human competencies, including physical and emotional health, basic social behaviors,



intellectual abilities, world outlook, and sense of self-worth. Among these developmental areas and important factors that determined children's school readiness and future success, creativity was the most critical criterion. Not only did children experience their most creative time during preschool years, but also the development of creativity related to and promoted other skills (Farella, 2010; Raising Children Network, 2011; Torrance, 1964). Researchers found that children with high levels of creativity had better performance on social behaviors, autonomy, independent judgment, problem-solving skills, self-esteem, attention, and perseverance (Barron & Harrington, 1981; Butcher & Niec, 2005; Dellas & Gaier, 1970; Dess & Picken, 2000, as cited by Farella, 2010; Kemple, David, & Wang, 1996). An investment in early childhood education focused on fostering creativity had been shown to encourage economic development and benefit society (Craft, 1999, 2006; Esquivel, 1995). Economic returns of preschool interventions were significantly higher than school age and older interventions (Reynolds, Temple, White, Ou, & Robertson, 2011); such benefits were especially pronounced in preschools that served children from economically disadvantaged families. Since preschool was such a critical time for children's development, this stage should be treated with care because of its ability to recognize, protect, and develop children's creative potentials.

Children's creativity was shown to be different from creativity in adults (Isbell & Rainess, 2013). In fact, the majority of research was aimed at understanding creativity in adults with few definitions assigned to children's creativity (Isbell & Rainess, 2013; Shaheen, 2011). Researchers mentioned that creativity was present in all children due to their curiosity in the outside world; their knowledge, intention, and enjoyment in play; their sensitivity to challenge, support, clarify and extend understanding; and their desire

to actively learn things (Craft, McConnon, & Matthews, 2012; Doorley, 2013). More importantly, previous studies demonstrated that enhancements in creativity were influenced by classroom environments, creative thinkers' attitudes, and individuals' interests more than by intelligence (Fisher, 2013; Guilford, 1950; Sternberg, 2001; Sternberg & Lubart, 1991; Torrance, 1972). Therefore, the role of education was to prepare next generations to be ready to confront challenges and rapid changes of the 21<sup>st</sup> century through the recognition and development of creativity as a core life skill and necessary experience in all levels of the classroom (Craft, 1999; Jeffrey, 2005; Parkhurst, 1999).

Children's creativity could be observed through usage of unusual ways to respond to questions, a sense of humor, originality, unpredictability, and nontraditional thinking; yet many times, creative children might not obey classroom rules and take risks without fear of failure (Beghetto, 2006; DeBord, 1977). Teachers felt displeased about such perceived misbehaviors and ignored acts of creativity. In such situations, teachers' wisdom, appropriate understanding, and responses to children's behaviors were required to guide them to reach more positive and creative results. It was important for children to understand that making a mistake in the classroom was acceptable and that expressing their feelings and trying new ideas were allowable.

Raising Children Network (2011) indicated that children's creative thinking and imagination could be fostered through activities in the pre-K classroom, such as drama play, music, dance, and visual art. Kohl (2015) commented that children's creativity was based on their own experiences. She also explained that all children had their own creative abilities, and that those abilities could be observed through all of their activities

and different perspectives of their development; however, children's creativity could not be judged by comparisons but rather by the ways in which children processed thinking, explored surroundings, and manifested imagination. In educational studies, children's creativity was commonly agreed upon to be the "little c" creativity, which dictated that every child had the potential to be creative. This reasoning provided an obligation for teachers to teach and nurture creativity in the classroom through intentional and consistent practices (Craft, 2004; Esquivel, 1995; Fisher, 2013; Isbell & Rainess, 2013; NACCCE, 1999).

Children expressed creativity naturally in multiple ways, by various styles, and on different levels (Donnelly, 2004; Guilford, 1950; Isbell & Rainess, 2013). In particular, children from diverse ethnic or socioeconomic backgrounds displayed creativity in different manners. Acknowledgment of this diversity led researchers to question how to acutely and effectively teach creativity and how to develop this natural characteristic that existed within every child (Livingston, 2010). Daugherty and White (2008) emphasized the "need for early intervention to nurture and enhance creative ability in children from different cultural and economic backgrounds" (pp. 37–38). This requirement obligated teachers to possess cultural awareness, rich experiences, and sensitivities to respond to all children and subtly recognize and support their creative processes (Bowman, 2011). Without such cognizance, creative behaviors and ideas could be ignored or discounted by teachers because they would appear to be unexpected actions or nontraditional answers (Baldwin, 1985, 2010; Torrance, 1965).

Researchers also stressed that children's creativity should not be solely evaluated on the final product created, but rather by considering the creative process as a whole

wherein new connections were built, different perspectives were viewed, and risks were taken (Barron, 1988; Craft, 2000; Eason et al., 2009). For example, Isbell and Raines (2013) showed that children enjoyed the process of mixing colors together more than making the final color. Yet studies have shown that teachers judge children's creative works mainly through comparisons with their previous works (Fryer, 1996; Shallcross, 1981). That is, the unique quality of children's creativity challenged teachers' understanding of creative processes and the way in which teachers interpreted and valued children's behaviors and experiences. Amabile (1989) indicated that excessive focus on final products or use of inappropriate ways to assess, evaluate, reward, or compare could impair young children's creative thinking. The description of creativity in young children allowed teachers' responsibilities to become clear and prominent. The full potential of children's growth might be unachievable in the absence of qualified teachers. Therefore, it was necessary to investigate teachers' roles and beliefs about creativity in the classroom.

### **Teachers' Roles and Beliefs about Creativity in the Classroom**

Children's learning and development might be influenced by different environmental factors and chiefly related to teachers' comprehensive abilities; knowledge; and expectations, attitudes, and passion for their careers (Barnett, 2011; Craft, 2001; Nickerson, 1999). Teaching young children was described as "a cognitively complex task" which required a teacher to possess "general and specialized knowledge and above-average cognitive abilities" (Barnett, 2011, p.48). Preschool teachers' qualifications varied greatly—each state and sometimes each school program had individual requirements, ranging from high school diplomas to college degrees in child

development or early childhood education. Many employers required a nationally recognized credential, such as secondary or postsecondary courses in education, or working experience in childcare settings. Public schools typically required a bachelor's degree and state teacher certifications (Barnett, 2011). However, a good preschool teacher was able to "learn from professional development" as well as "adapt to advances in knowledge about learning and teaching" (Barnett, 2011, p. 48). Public expectations for preschool teachers have continued to grow, which in turn required teachers to have additional responsibilities including compliance with updated policies and requirements. Therefore, it was necessary to equip teachers with a comprehensive understanding of the complexity of human and social development including knowledge of genetics, neurobiology, nutrition, health, maternal attachment, teacher-and-peer relationship building, psychology, sociology, and economics. Moreover, conducting close observational assessments in the classroom was deemed necessary to implement a more appropriate, personalized, and effective curriculum for all children, as they ultimately provided teachers with precursor skills for success in future schooling (Bowman, 2011).

Teachers who spent most of their time with students and participated in students' daily activities played crucial roles in designing physical classroom environments and developing children's inner worlds. Teachers' instructional methodology and educational philosophy affected students' growth and success (Hendrick & Weissman, 2009). Many studies indicated that teachers were central to nurturing children's early innovative thinking and creative abilities; promoting their curiosity, interests, and expectations to explore the natural world; and learning new things (Cheung & Mok, 2013; Chien & Hui,

2010; Davies, 2010; Diakidoy & Kanari, 1999; Eason et al., 2009; Kemple & Nissenberg, 2000; Leong, 2010; Nickerson, 2010).

While teachers' tasks of stimulating children's development have been widely recognized, teachers have been facing more challenges and concerns regarding preparation of creativity-friendly classrooms for all children (Esquivel, 1995). Because a standard curriculum aimed at developing children's creativity had not yet been fully developed, instructional practices were more dependent on teachers intentionally designing curricula and educational activities. Areas of focus for these curricula and activities included teachers' capabilities to build bridges between their knowledge of creativity in young children and their instructional strategies; teachers' awareness and sensitivity to stimulate children's creative potential and discover their creative behaviors; teachers' wisdom to respect and expand children's curiosity and interests in exploring the world and solving problems; and above all else teachers' initiatives to conduct individualized instruction that met children's personal needs and interests (Beetlestone, 1998; Craft, 2005; Craft et al., 2001; Cropley, 1997; Diakidoy & Kanari, 1999; Eason et al., 2009; Kemple & Nissenberg, 2000; Yilmaz, 2011).

Studies found that teachers' understanding and attitudes toward creativity as well as their personal characteristics could affect their daily teaching strategies and their overall effectiveness of fostering creativity in the classroom (Aljughaiman & Mowrer-Reynolds, 2005; Eason et al., 2009; Nakamura & Csikszentmihalyi, 2001; Isbell & Raines, 2013). Craft (2001) mentioned that teachers' attitudes towards creativity, interactions with students, classroom supplies, didactic materials, and educational levels were related to outcomes of enhanced creativity in children. Reilly et al. (2011) tested the

relationship between creativity and creative teachers. The researchers' study determined the importance of creative teachers in successful education, including teachers' influences on both students and colleagues, teachers' roles in increasing students' creativity, and teachers' strategies for effectively implementing practices of creativity into curriculum. Researchers found that teachers' passions, motivation, and emphasis on creativity facilitation strongly correlated with children's creative outcomes.

Research by Eason et al. (2009) investigated public and private school teachers' perspectives on student creativity. The researchers sought to answer whether teachers' perspectives changed between different grade levels and how such perspectives could be affected by factors such as teachers' ages, ethnicities, teaching experiences, and educational backgrounds. There were 24 public school teachers and 24 private school teachers who were selected to participate in the study. Results indicated that private school teachers who were given more flexibility in designing curriculum ranked higher on student creativity levels than public school teachers. Grade level was negatively associated with creativity ranking in students. Creativity was valued more in kindergarten than in third grade, and private school teachers had higher creativity scores than public school teachers. However, there was no correlation between teachers' demographic factors and students' creativity. This result was consistent with the study of Dababneh, Ihmeideh, and Al-Omari (2010), which did not find a significant association between teachers' teaching experiences and their actual classroom practices. Lastly, the study found that teachers who gave themselves high creativity scores encouraged more creative activities in classrooms than those who rated themselves lower. The study also supported

the hypotheses that teachers who were more creative stimulated their students' creativity, and that less classroom pressure produced better creativity results.

Other research examined teachers' beliefs about creativity. Diakidoy and Kanari (2009) conducted a study at the University of Cyprus to evaluate student teachers' beliefs about creativity, consequences of creativity, and potential factors that affect the formation of creativity. The majority of student teachers studied believed that creativity was not a characteristic for all children; rather, they believed creativity was domain-related, with art, music, and literature being the top three domains for the emergence of creativity. Student teachers also believed that creative children manifested creativity in various domains and through multiple ways and that creativity could be increased through appropriate teaching and direction. These student teachers also agreed that educators encountered creative students often. However, most student teachers disagreed about the relationship between intelligence and creativity. They concurred that better academic performance did not necessarily correlate with higher creativity levels. Additionally, participants believed that individuals' personality characteristics such as imagination, self-confidence, independence, goal-orientation, and autonomy were critical for manifesting creativity. The study showed a high degree of uncertainty on the relationship between knowledge base and creativity, but about half of respondents still believed that the degree of creativity was dependent on previous knowledge preparations. For task knowledge, most student teachers believed that open-ended tasks, divergent-thinking tasks, and unfamiliar tasks were more likely to facilitate the development of creativity in children. On the question of whether environmental factors influencing creativity, all student teachers selected an emphasis on autonomy and independence, with 98 percent of



them considering that discovery learning was likely to facilitate the development of creativity. On the other hand, these teachers disagreed on whether school environment was critical for creativity formation because the majority of them believed that schools didn't have enough opportunities for children to exhibit such abilities. Participants did not consider that creativity in daily life was any different from creativity facilitated in the classroom.

Andiliou and Murphy (2010) conducted a comprehensive review of previous research studies. After synthesizing all findings, the researchers built a framework to present teachers' beliefs about creativity, which included their views about the nature of creativity, characteristics of creative students, and classroom environments. More specifically, the study found that teachers' beliefs about the nature of creativity were framed by four major factors: distribution, malleability, specificity, and the context of reference. "Distribution" was defined as whether creativity naturally belonged to all children or was possessed by only a few children. "Malleability" represented teachers' attitudes about whether creativity could be increased or decreased during a child's life. "Specificity" described the degree to which teachers considered that creativity manifested differentially in separate subject domains. "Context of reference" referred to outcomes that were considered to exhibit creativity in certain social and cultural environments. Teachers' beliefs about creative individuals formed the second component, which was comprised of individuals' knowledge base and personality characteristics. The knowledge base was defined as domain knowledge and task knowledge, while personality characteristics were comprised of an individual's intelligence, motivation, and attitudes. The third component was teachers' beliefs about the classroom environment and was

based on two subcomponents: teachers' attitudes and teaching strategies. Conclusions could be made based on Andiliou and Murphy (2010)' framework construct, the three factors mentioned above which determined teachers' beliefs about creativity, and the facilitation of creativity in the classroom environment. In sum, effective teachers who were able to enhance children's creativity must appropriately define the nature of creativity; hold positive views about creative individuals regarding their knowledge, task-completion abilities, and personalities; and employ effective strategies in the classroom environment.

### **The Classroom Environment and Teaching Strategies**

The classroom was an important learning and social medium for children because it was where their early innovative thinking and creative abilities could be developed. (Eason et al., 2009). Education researchers conducted studies to examine the correlation between children's creativity and classroom environments. Environmental factors were investigated that were beneficial to the development of creativity. Lee and Kim (2005) indicated that a traditional classroom environment that applied strict rules and teacher-directed teaching styles could hinder the development of children's creativity. Rushton, Rushton, and Larkin (2010) designed a study in response to the new insights of neuroscience in stimulating students' brain development and critical thinking abilities. The researchers promoted an idea to create a "brain-friendly environment" for children. These scientists suggested that a free, rich, and friendly learning environment provided by teachers could stimulate happy moods in children and ultimately promote the growth of neurotransmitters and increase children's attention and cognitive abilities.

The Reggio Emilia approach was a successful model for teaching creativity and promoting cognitive thinking in the field of early childhood education. Hendrick and Weissman (2009) documented the existence of many preprimary schools in Reggio Emilia, Italy that had implemented innovative and emergent strategies to develop children's creativity for more than 35 years and resulted in pronounced success. In the Reggio Emilia classroom, students were considered competent actors. Teachers' main functions were to provide children with rich materials for exploration, to allow students much time and space to conduct self-directed learning, to support students' ideas through observations and thought-provoking questions, and to extend their interested and on-going projects in order to enhance their learning outcomes.

Many schools in the United States adapted the Reggio Emilia approach and initiated "The Hundred Languages of Children" project, which advocated for the respect of children's interests and personalities while encouraging children to use their own unique ways to describe their ideas, express their feelings, record their observations, and solve their problems. Inspired by the program, play-based and child-directed curriculum were broadly encouraged and implemented to foster development- and creativity-friendly environments for all children.

Several studies discussed coping strategies that facilitated students' creativity in classroom environments. Hendrick and Weissman (2009) studied imagination and creative self-expression in young children. Their study indicated that play could significantly contribute to children's creative facilitation because it was child-centered and children learned things much more quickly and easily during play than during any other tasks assigned by teachers. During play, children had numerous opportunities to

practice creative thinking by selecting sources to symbolize types of subjects.

Additionally, Hendrick and Weissman (2009) described many practical suggestions for early childhood teachers such as providing blocks with various shapes and using self-expressive materials like easel painting, finger painting, chalk, crayons, dough, and clay collages. The researchers added that if teachers could use alternate strategies such as focusing on procedures rather than results, providing different choices for determinations, leaving much time and space for students' activities of interest, interfering less but offering effective support and help to students, and providing students with sufficient sources and materials, children's brains would be triggered to come up with unique ideas, which in turn would augment creativity in the classroom (Hendrick & Weissman, 2009).

The theory that children's creativity decreased when given didactic instruction due to reduced time for recess and play was supported by studies of Van Hoorn et al. (2011). These researchers stated that children engaged with more enthusiasm, patience, creative thinking, and motivation in their own directed play than during tasks assigned by teachers. Hence play-centered curricula should be implemented into the early childhood classroom, while free play without setting any goals and rules could be subtly used to impart new knowledge (Van Hoorn et al., 2011).

Reilly et al. (2011) also studied child-centered play and indicated that good teachers should be creative in curriculum preparation and capable of employing diverse and appropriate teaching methods to meet students' interests, developmental needs, and abilities. Eason et al. (2009) considered it effective for teachers to focus on valuing children's thinking processes while rewarding their abilities to problem solve without providing restrictions or evaluations. Gallagher (2007) argued that rich discussions

offered good opportunities to enhance students' creativity. Other researchers suggested that teachers should participate in children's activities while modeling creative processes, demonstrating creative behaviors, and displaying creative work to improve children's skills of play and thinking. Such efforts could subsequently help children to achieve creativity. (Craft, 2000; Fisher, 2013; Mellou, 1994; Russ, 2003). Kohl (2015) proposed that a teaching philosophy of allowing, accepting, and releasing classroom management back to children was appropriate and necessary for promotion of creativity in young children.

Other studies also centered on the multi-purpose roles of teachers to demonstrate how teachers affected classroom environments, which in turn impacted students' creativity. Cremin, Burnard, and Craft (2006) examined the relationship between the characteristics of children's possibility thinking and teachers' pedagogical practices in the classroom. Results indicated that children's creative thinking was in parallel with teaching strategies. Specifically, teachers who had flexible curricula and allowed significant amounts of time and space for children to think could demonstrate larger effects of possibility thinking. The results also found that accountability testing was the biggest issue teachers faced, which required their abilities to be balanced between pre-determined curricula and students' freedom to direct their own learning activities. The researchers also encouraged teachers to embrace multiple roles, as both researchers and learners, for their improved professional practices.

Dababneh et al. (2010) conducted a study in Jordan to determine how teachers' differences in teaching attitudes, teaching experiences, educational levels, and actual teaching practices affected the creative classroom environment. Researchers used the

“Creative Environment in Classroom” survey questionnaire, which contained a five-point Likert scale with 55 items to evaluate five major domains from teachers including knowledge, awareness, lesson planning, and educational materials. The study supported theories that teachers’ cooperative teaching methods—e.g., open-ended questions, multiple-response questions, multiple-choice in school assignments, abandonment of heavy loaded worksheets, tolerance of mistakes, positive attitudes toward creativity—could improve the creative classroom environment and were strongly correlated with the facilitation of creativity.

Teachers were able to support, facilitate, and model children’s creativity (Runco, 2003). A wide variety of strategies were suggested by researchers, allowing teachers to modify their practices and classroom environments to better promote children’s free expression and creative thinking. As a result, this researcher selected some preferred strategies that were frequently mentioned in studies:

1. Providing adequate and sustained time for children to finish their projects and enough space to play and manipulate materials (Craft, 2001; Edwards & Springate, 1993; Isbell & Rainess, 2013; Runco, 1990; Shallcross, 1981).
2. Preparing rich materials with different textures, colors, and functionalities for children to choose from (Edwards & Springate, 1993; Hendrick & Weissman, 2009).
3. Asking open-ended questions (Craft, 2000; Dababneh et al., 2010; Mellou, 1994; Runco, 2003; Springate, 1995).
4. Assigning children with tasks while encouraging their enjoyment, persistence, and motivation in completing them, and showing teachers’ interests and

cheering for children's achievement, which in turn would build their self-esteem, self-confidence, and self-worth (Craft, 2001; Mellou, 1994; Runco, 1990, 2003; Shallcross, 1981; Springate, 1995).

5. Following children's curiosity and interests while respecting their individuality in providing teachers with different ideas, new ways of thinking, and unusual answers (Amabile, 1983; Craft, 2005; Diakidoy & Kanari, 1999; Eason et al., 2009; Lin, 2011).
6. Learning to accept different problem solving options from children and trying to adapt to children's ideas rather than working within a pre-structured framework, even if some ideas seems unusual (Amabile, 1996; Cropley, 1992; 1997; Diakidoy & Kanari, 1999; Torrance, 1962).
7. Encouraging children's fantasies and ideas of expression by implementing different symbolizations (Craft, 2001; Hendrick & Weissman, 2009; Runco, 2003).
8. Valuing creative processes more than creative products (Craft, 2000; Eason et al., 2009; Isbell & Rainess, 2013; Schirrmacher, 2006).
9. Maintaining a warm, free, relaxing, and secure classroom for children in which there were no strict rules and children were allowed to take risks; to be independent, different, unique, and messy; to experiment with their ideas; and to make mistakes (Edwards & Springate, 1993; Fleith, 2000; Isbell & Rainess, 2013; Kampylis, Berki, & Saariluoma, 2009; Shallcross, 1981).

## **Teachers' Knowledge and Difficulties**

Clandinin and Connelly (1996) introduced the concept of “professional knowledge landscape” to position teachers and co-locate various people; complex relationships; and multiple places, times, and events. This landscape not only included physical environments but also represented spaces in which teachers’ thoughts, knowledge, and practices occurred. The landscape conveyed and reflected social meanings (Clandinin & Connelly, 1996). Teachers were “at the nexus of curriculum implementation” (Olson, 2000, p. 171) and their knowledge was constructed, revised, and developed during continuous interactions with themselves, their colleagues, and the environment in which they lived and worked. Teachers spent time mainly in two places on the landscape: inside and outside classrooms. In the classroom, teachers had the privacy and the authority to tell their stories and build relations with students. Yet outside the classroom, teachers considered others' opinions while obeying various rules, policies, and curriculum plans. Clandinin and Connelly (1996) then classified teacher’s knowledge into personal practical knowledge and professional knowledge. Personal practical knowledge was shaped during teachers’ own teaching activities in classroom environments with students, and professional knowledge was gained outside the classroom, such as research findings, public policy, and professional trainers (Clandinin & Connelly, 1996). In the professional knowledge landscape, teachers' practical knowledge and professional knowledge affected one other. Creativity, which was required to be incorporated into teaching, inevitably interacted with teachers’ daily teaching practices and affected teachers’ knowledge formation and processing (Craft, 2001). This, in turn, became part of teachers’ reflective thinking, which interacted with



teachers' personal practical knowledge. The concept provided a comprehensive picture for the current study to examine and facilitate understanding of teachers' difficulties and obstacles from both of their personal practical knowledge and professional knowledge.

Previous studies have found that early childhood teachers faced difficulties and dilemmas in fostering children's creativity in the classroom (Bolden, Harries, & Newton, 2010; Byron, 2007; Craft, 2001; Fisher, 2013; Fletith, 2000; Newtown, 2000; Yilmaz, 2011). Further, there was a gap between teachers' understanding of creativity and their real classroom practices—even teachers who valued creativity lacked appropriate approaches to spark children's creativity in class (Cheung, 2012; Fletith, 2000; Mansour, 2009; Newton & Newton, 2010). Such gaps could be caused by either internal or external reasons. Internal reasons included teachers themselves (e.g., knowledge of creativity, personality, teaching experience, style); external reasons included student actions and the cultural environments in which teachers worked and lived (e.g., time, space, teaching resources and support, expectation and requirements of administrators and parents) (Byron, 2007; Cheung, 2012; Fryer & Collings, 1991; Newton & Newton, 2010; Yilmaz, 2011). Runco (2003) added that teachers were pressured to focus on literacy and numeracy, had limited access to creativity training in the early stages of their careers, and faced difficulties in handling conflicts between needs of the majority of the class and interests of certain individuals.

Researchers examined these challenges and found that teachers lacked a clear definition and adequate knowledge of creativity (Bolden et al., 2010; Craft, 2001; Fleith, 2000; Odena, 2001; Wilson, 2005). Bolden et al. (2010) explained that offering limited courses and a lack of necessary training might threaten teachers' understanding of

creativity and jeopardize the goal of fostering creativity. The ambiguous understanding of creativity caused teachers' to display inappropriate or dismissive practices in response to children's creativity. For example, teachers tended to value creative products rather than creative processes (Bolden et al., 2010). Stoycheva (1996) also found that teachers neglected children's individual personalities, which were positively related to creative potentials such as independent thinking and emotional expression. Craft (2001) stated that some teachers were not expecting to define creativity, which in turn limited their abilities to discover children's creative potentials.

A disconnect was found between content knowledge teaching and creativity enrichment in some subject areas and was especially pronounced in mathematics (Bolden et al., 2010). Teachers felt that there were more important responsibilities than creativity in classrooms, especially due to pressures of high-stakes testing. Thus their teaching practices did not focus on creativity facilitation, which left insufficient time to intentionally prepare activities for children's creativity (Fleith, 2000; Stoycheva, 1996; Torrance, 1962). In addition, researchers found that classrooms were using outdated teaching strategies on rote learning and intellectual development (Bolden et al., 2010; Davies, 2002; Fisher, 2013). Teachers had not realized that methods for knowledge acquisition were insufficient for children's future survival and success. Rapid social changes shifted the societal need for people who engage in routine tasks to individuals who act and think creatively, which could play a major role in economic development and social prosperity (Bartel, 2015).

Within the myriad reasons contributing to teachers' difficulties, Byron (2007) stated that the major problem was that teachers lacked a clear roadmap to guide them

from traditional teaching styles to more innovative instructional methods. Teachers reported that they received limited support from school administrators, who also lacked in-depth knowledge about early childhood education and creativity teaching (Yilmaz, 2011). School administrators seldom communicated the importance of creativity with parents and valued students' creative products and creative processes inappropriately. Such situations also caused teachers to face dilemmas in developing creativity in the classroom. Therefore, the importance of equipping school administrators with an understanding of creativity was highlighted in the study, and further led calls to support teachers' practices effectively. Further, Yilmaz (2011) advocated for cooperation among parents, school administrators, and teachers in realizing creativity enrichment in the classroom.

### **Conclusions**

In summary, teachers' perspectives on fostering children's creativity contributed to an interactive relationship among creative teaching, teaching for creativity, and creative learning in class (Lin, 2011). Studies showed the importance of providing supportive classroom atmospheres in which children's innovative thinking and creative capabilities flourished inseparably from strategies implemented by teachers. Such connections were based on Torrance's (1963) ideas that teachers stimulated children's curiosity and questioning while expanding their capabilities for creative thinking and learning. Children learn from authority figures, teachers, questioning, inquiring, searching, experimenting, and most importantly during free play. Teachers' workspace was the nexus at which their teaching knowledge was influenced by in-classroom practices as well as outside classroom policies.

The reviewed studies demonstrated the need for the current study. After reviewing the literature, the researcher found that no studies were conducted that focused on pre-k teachers' perspectives, strategies, or difficulties in fostering creativity in the classroom, which demonstrated the research gap in the field. By noting the importance of pre-K teaching in children's lives, the study researcher deemed that it was necessary and urgent to conduct a study on pre-K teachers to examine how they influenced children's creativity in the classroom. The study could provide teachers with opportunities to define creativity, to illustrate corresponding strategies that have been implemented or were considered necessary to foster children's creativity in the classroom, and to elucidate challenges to classroom implementation of creative practices. Analysis of teachers' understanding, misconceptions, and confusion about creativity would be useful to future discussions in the field of early childhood education.

## **Chapter III**

### **Methodology**

The purpose of this study was to examine pre-K teachers' perspectives on creativity within the context of Texas-based early childhood education. More specifically, the study addressed teachers' conceptions of creativity, their understanding of identifying characteristics of creative students, and their perceptions on promoting a creative-supportive classroom environment. Additionally, the researcher documented instructional strategies implemented by teachers or strategies considered necessary for improvement of students' creative performance to determine if there were gaps between teacher-held expectations of spurring enrichment and actual classroom teaching practices. Further, the researcher recorded dilemmas teachers faced when fostering creativity in the classroom in order to identify factors and solutions that could minimize gaps.

The findings of this study could be used as a source for early childhood practitioners to obtain more concrete definitions of creativity. The findings might also permit such educators to realize the significance of creativity in determining children's societal success, draw more attention to the topic, and provide teachers opportunities to reflect and pursue effective curriculum and teaching strategies. Understanding pre-K teachers' current views on creativity would allow professional development providers, teacher educators, and policymakers to prepare more targeted classes and trainings. Such an appreciation would help teachers turn their knowledge into action and positively impact children's creativity in the classroom.

Based on previous research and the intention of the present study, the following research questions were posed:

1. What are pre-K teachers' perspectives on creativity in terms of how they value creativity and how they define creativity, characteristics of a creative student, and a creative-supportive early childhood classroom?
2. What instructional strategies do pre-K teachers use or consider effective to facilitate creative capacities in the classroom?
3. What difficulties do pre-K teachers face in attempting to foster creativity in the classroom?

This chapter details the methodology used in the study, including the overall research design that guided this study, selection and description of participants, an explanation of instruments, procedure for data collection, and data analysis.

### **Research Design**

To conduct an in-depth study of pre-K teachers' perspectives on creativity and obtain information to answer the research questions, the study methodology followed Phil Carspecken's (1996) first three stages of critical qualitative research methods and consisted of two main phases. The first phase was to conduct classroom observations of participants focusing on their instruction and activities with students. The classroom observations for each participant occurred on three separate days and each session was one hour in duration. Participant observations consisted of circle time, centers, large group activities, and small group activities during which much instruction and interactions between teachers and students could be captured. This phase was important for the researcher to be introduced to participants and their behaviors, to build an

understanding of their activities, and to experience the environment in which participants taught. During the second phase, the researcher conducted in-depth, face-to-face interviews with each participant in a safe environment to gain an understanding of their views on creativity based on their knowledge and teaching experiences. Each participant was interviewed twice and each interview was 30 minutes in duration. Thus, the total length of interviews with each participant was about 60 minutes. It should be noted that both study phases supported the validity of the data collection, which suggested a potential relationship between teachers' perspectives of creativity and teachers' demonstration of mastery of creativity concepts via observed teaching practices.

The rationale for choosing the qualitative approach instead of quantitative methodology was that it was best suited for the research subjects and purposes of the study. Carspecken (1996) indicated that qualitative research was an essential method for examining the nature of action, subjective experiences, and conditions which influenced actions and experiences as part of the methodological framework. Qualitative research brings more accuracy, truth, and depth to results than quantitative studies. Moreover, at study outset the term creativity still existed at an exploratory stage and lacked a commonly recognized definition in the field of education. A quantitative study would have required the definition of creativity to be explicit to construct measurable outputs. Carspecken (1996) indicated that "...social action and human experience are always, in every instance, highly contextualized. Generalizing across contexts is dangerous" (p. 25), and the researcher determined that operationalizing a definition and constructing an instrument for creativity was too abstract. The translation of multiple references into a single realm of objectivity and consideration of social action, human experiences, and

individuals' respective conditions as variables were considered unfeasible. It was not possible to generalize creativity in young children because it would have caused incorrect inferences and diminished the study significance (Carspecken, 1996).

Conversely, the researcher was able to interpret participants' feelings, opinions, and dilemmas on creativity and its complicated meanings through observations and face-to-face, in-depth interviews with teachers. Therefore, the qualitative method was determined to be optimal for the study because it provided a deeper understanding of teachers' perspectives on creativity, established how teachers incorporated the concepts into their instructional strategies, and recorded difficulties encountered when fostering creativity both in the classroom and the early childhood educational system.

The researcher followed all guidelines of the Committee on Scientific and Professional Ethics of the American Psychological Association to assure no harm to participants. Because the study used classroom observations and face-to-face interviews, no physical contact with participants occurred and thus minimal impact was transferred to participants. All interviews were administered at a private, undisturbed location at the childcare center where teachers were employed. The study researcher alone knew teachers' identities, and confidentiality was maintained by removing identifiers from documentation and replacing names with pseudonyms. A letter that included a detailed description of the research plans and goals was proposed and submitted to the United Way of Greater Houston for approval. The study was begun after the project summary and research protocol had been reviewed and approved by the Committees for the Protection of the Human Subjects of the University of Houston (see Appendix C).



## **Participants**

Purposive sampling was employed for participant selection of the study. The rationale of applying this method was to identify and choose the participants based on their knowledge and the purpose of the study. The research questions pursued in this study were suitable for applying purposive sampling technique. Three participants who worked for UWBB were selected based on three criteria.

Three pre-K teachers from the childcare centers of UWBB: Nina, Sophia, and Heather. To ensure confidentiality, all participants' were given pseudonyms. The rationale of selecting teachers from this program was meaningful. Houston had a large population of students who were from low-income families; since 2002, the UWBB program had served a large number of Houston area children to ensure their educational growth. The UWBB program aimed to provide comprehensive services to low-income students and their families by assigning well-trained teachers to their classrooms. Such a strategy better prepared students to meet Texas's academic standards upon entry to elementary schools, allowed students to start on a successful life path, and imparted long-lasting effects on students' futures. Previous studies found that conducting an early and effective intervention on children who were from low-income and high-risk backgrounds increased their long-term educational performance results and benefitted the social stability and economic vitality of the U.S. (Macdowell, 2012; Rolnick & Grunewald, 2011). To achieve similar long-term goals, the UWBB program emphasized teacher quality by providing professional trainings to novice teachers and promoting professional development for experienced teachers. Moreover, program classrooms adapted the Reggio Emilia approach, which was considered a prominent model in the field of early

childhood education for teaching creativity and promoting cognitive thinking. According to the UWBB's 2014 annual report, teachers who received training were better able to view children as individuals with different personalities and with capabilities to lead their own learning and discovery (Andrews, Tobe, Powers, Rutter, & Tajani, 2015). In addition to their teaching practices, teachers provided children more opportunities to explore and better realized the ways in which children learned through play and imagination. The 2014 report also indicated that directors observed that children taught by their teachers became explorers, eager learners, problem solvers, and risk takers in the classroom (Andrews et al., 2015). Based on the notable achievements of UWBB teachers in the Houston area, it was predicted that the participant teachers, who had received training in UWBB, would possess a nuanced view of children's developmental processes and share a common goal of imbuing children with the 21<sup>st</sup> century working capabilities. Therefore it was determined that this group of teachers would be a good cohort to approach on the topic.

The criteria of participant selection included:

1. having at least two years of training with UWBB,
2. serving as a full-time teacher in pre-K (4-year old age group), and
3. possessing at least a high school diploma.

Selecting these criteria decreased the pool of research participants and invited teachers who were suitable for study. In particular, two years of UWBB training equipped teachers with comprehensive knowledge of child development and skills for teaching and interacting with young children. Working full-time in the center demonstrated that participants shared adequate daily time with children and indicated

their commitment to teaching, a sense of job satisfaction, a good work ethic, and self-motivation. The third criterion verified teachers' educational backgrounds in teaching and their basic knowledge of educational policies and standards of the state of Texas.

With the help of university professors who had research collaborations with UWBB, five teachers from four centers were initially selected from the UWBB database. Center directors were contacted through email with requests to help recruit their eligible teachers. Finally, three teachers from two different centers expressed interest and a willingness to participate in the study, while the other two centers declined to join. Table 1 provides a brief description of each participant, including their teaching experiences, numbers of students in the classroom, educational background, and professional training received from UWBB.

Table 1

*Introduction of Participants*

Name	Length of teaching in pre-K classroom	Number of students in the classroom	Highest degree	Length of training received from UWBB	Received training regarding the subject of teaching for creativity (Yes/No)
Nina	8 months	20	Associate degree	5 years	Yes
Sophia	15 years	15	Bachelor degree	4 years	Yes
Heather	10 years	5	Associate degree	5 years	Yes

## **Interview**

Two interviews were conducted with each teacher on two separate days; interviews lasted about 30 minutes each. Thus, the total interview length for each participant was about 60 minutes.

Prior to interviews the researcher established the interview protocol (see Appendix A), which served as a guideline and reminder to address specific discussion topics and possible follow-up questions. The interview protocol was not rigid, which meant not all questions were addressed or asked in a certain sequence. Nonetheless, the protocol was semi-structured and the researcher had the flexibility to adjust the questions depending on participant responses and situational contexts. Carspecken (1996)'s model, research questions, and classroom observations served as the basis for the interview protocol content, which contained domain topics, covert categories, start-off questions, and follow-up questions.

To establish a comfortable conversational environment and help participants transition to the mood of the interview, the researcher began interviews by asking participants to briefly describe their teaching goals and teaching philosophy. After this opening query, the researcher moved to questions that were relevant to the study. Interview questions were mainly divided into three domain topics based on study research questions:

1. defining and valuing creativity in children,
2. instructional strategies, and
3. difficulties.

Within each domain topic, the researcher prepared one start-off question that provided a concrete scenario corresponding to participants' classroom observations. Participants were asked to describe scenarios from their own perspectives. Follow-up and open-ended questions were used to initiate discussions, elicit detailed ideas from participants, and provide more clarification and detailed examples for each topic. There were seven follow-up questions for the first topic domain, four follow-up questions for the second topic domain, and three follow-up questions for the third topic domain. Including the three start-off questions for each topic domain, the researcher constructed a total of 16 questions for each participant. Table 2 lists each topic domain and several follow-up questions.

Table 2

*Topic domain and some follow-up questions*

Topic Domain	Follow-up questions (examples)
Defining and Valuing Creativity in Children	<p>I would like to know as a prekindergarten teacher, how do you define creativity in children?</p> <p>Are there any characteristics or abilities that you consider necessary for a child who is considered as creative?</p> <p>How do you identify children's creative behaviors? Please give me one or two examples of children who are creative in your classroom.</p> <p>Why do you feel creativity is necessary to be fostered in pre-K classroom, especially considering children's future in the 21<sup>st</sup> century?</p>
Instructional Strategies	<p>Could you list as many as strategies or activities that you have been used to foster children's creativity? Did they work out? Please give me some examples.</p> <p>What other strategies that may be also useful for facilitating children's creativity, but due to some reasons you haven't got chance to practice with?</p> <p>What good strategies would you suggest other teachers to try, especially novice teachers, who want to increase children's creativity in their classroom?</p>
Difficulties	<p>Have you considered the relationship between academic approach and children's creativity facilitation? How do you balance between them?</p> <p>Has creativity been valued and supported at your center? What additional support you would like to receive from your director and colleagues to bring positive impact on your practices?</p> <p>I understand that you've received trainings from UWBB, how were they?</p>

**Data Collection**

Carspecken (1996) suggested that five-recursive stages could be applied to conduct critical qualitative research design, and this research study employed the first three stages for data collection. The first step of this study emulated the first stage of Carspecken's (1996) model: to compile the primary record through the collection of "monological" data (p. 43). In this step, the three pre-K teachers were the priority

observing objectives and the researcher acted as a passive observer, i.e., a third person, during the entire observation process in participants' classrooms. To ensure consistency in data collection, three observation sessions were conducted in each individual teacher's classroom over two weeks in spring 2016: during circle time, centers, large group activities and small group activities where participants engaged in teaching activities and verbal communications with students. Each observation lasted about one hour. A total of three hours of observation was conducted with each participant. Having such repeated observations reduced Hawthorn effects on participants and avoided effects of researcher presence on participant behavior. Furthermore, these observations gathered detailed data for the study that illustrated participants' classroom management styles, instructional skills, teaching styles, activity design, interactions with students, and methodology used for students' creative thinking. These data were used to supplement field notes and supported interview analyses. All three observations with each participant were audio-recorded. Two audio recorders were set up in the classroom to ensure the capture of teachers' voices clearly and completely. Additionally, the researcher took notes while observing, including physical arrangements of the classroom, meaningful occurrences or conversations that took place in the classroom, and researcher comments. Table 3 describes the date and time of observation and the teaching content for each participant.

Table 3

*Information of classroom observations*

Name	Date and time of observation	Teaching content
Nina	February 22 <sup>nd</sup> , 2016 9:40 am-10:40 am	Circle time for book reading “The Three Little Pigs” and transition to recess time
	February 23 <sup>rd</sup> , 2016 9:40 am -10:40 am	Circle time for reviewing the story of “The three little pigs” and centers (block play, arts, craft, reading, sandbox, Lego, role play)
	February 25 <sup>th</sup> , 2016 3:20pm-4:20pm	Reviewing the book “The Three Little Pigs” and centers (block play, arts, craft, reading, sandbox, Lego, Jello making, role play)
Heather	February 24 <sup>th</sup> , 2016 10:00am-11:00am	Circle time for book reading titled “Today I feel silly & other moods that make my day” and centers (painting with different materials, sandbox, literacy learning)
	February 25 <sup>th</sup> , 2016 10:00am-11:00am	“How to make flubber” and transition to recess time
	March 1 <sup>st</sup> , 2016 10:00am-11:00am	Video watching and centers (role play, block play)
Sophia	February 29 <sup>th</sup> , 2016 10:40am-11:40am	Circle time for “the pyramid of food “and transition to lunch
	March 2 <sup>nd</sup> , 2016 10:30am-11:30am	Large group activity “draw and cut your pizza” and transition to lunch
	March 9 <sup>th</sup> , 2016, 10:30am-11:30am	Circle time for learning different vegetables and storytelling “the Turnip”



The second step of data collection was the third of Carspecken's (1996) five stages: generating dialogical data and inviting participant voices through interviews. This stage was important because it allowed participants to become more involved in explaining their behaviors. The recorded data from observations were further confirmed and challenged during interviews. The researcher met with participants in a location that optimized sound, lighting, privacy, and comfort, thereby creating an environment that would allow participants to share their true feelings and thoughts (Carspecken, 1996). Initially some greetings and casual talk were exchanged to help participants feel relaxed. At the beginning of interviews, demographic information was obtained including experience teaching in pre-K classrooms, number of students in current classrooms, highest degree, and length of training received from UWBB (see Appendix B). During interviews, the researcher used the interview protocol as a guide for conducting the conversation.

To ensure the clarity of questions and a logical progression, the interview protocol for each participant was reviewed and approved by two University of Houston faculty members. One faculty member's expertise was in early childhood education and the other faculty member was an expert in qualitative studies and education. Both individuals were familiar with this study. This review process increased the validity of the interview protocol for each participant and ensured the likelihood that information provided by participants could be used to answer research questions. Although interviews were two-way communications, the main role of the researcher was to be a facilitator and a listener. The researcher contributed little spoken dialogue, avoided conscious or unconscious debate, did not use leading questions or words, and did not share personal opinions that

might influence participants' answers. Any personal disagreements or divergent viewpoints of the researcher towards answers of participants were discussed after interviews. Carspecken (1996) suggested other strategies that were implemented during interviews such as bland encouragement, non-leading leads, and active listening to interviewees' responses. Additionally, one word utterances like "yes," "um," and "good"; facial expressions; and repeating or rephrasing participants' answers were used to encourage participant dialogue and generate more data (Carspecken, 1996). These verbal and non-verbal clues helped maintain a natural environment during interviews and made the process seem more like a normal interactive communication. Moreover, the researcher delicately framed certain ideas within interview question constructs. Answers to these questions confirmed previous responses in support of observation behaviors and clarified inconsistent answers. These strategies ensured the trustworthiness of the data and contributed to the validity of the study. Two audio recorders were used to record conversations in their entirety. All verbal communication as well as nonverbal actions were transcribed and typed into Word documents for analysis.

### **Data Analysis**

Data analysis followed Carspecken's (1996) critical qualitative research method by analyzing both the "monological" data (p. 43) collected from classroom observation and dialogical data recorded from the interview. Hence, data analysis started during the observation process. The purpose of doing preliminary reconstructive analysis was to allow meanings contained within the data to surface and become more lucid, transparent, and understandable. Completion of reconstructive analysis permitted the larger system themes to emerge, and the interview protocol was constructed accordingly. In other

words, analyzing the data from classroom observations provided the groundwork to process interviews. Data analysis was cyclical and continued to occur during stage three: dialogical data generation. The results and the conclusions of this study were mainly generated and drawn from interview data, with observation data serving as supplemental support.

The coding techniques outlined by Carspecken (1996) were used for data analysis to recognize and categorize recurring patterns for each participant and to further crosscheck those patterns and their relationships among all participants for discovery of common themes. The researcher expected that identified common themes could help to answer the research questions. The coding techniques included meaning reconstruction, validity reconstruction, and horizon analysis, and were conducted to explore and interpret claims and statements that contained multiple meanings (Carspecken, 1996). Such techniques were oriented toward meaning reconstructions, which meant articulating cultural themes and system factors that were unobservable, tacit, and often unarticulated by the participants themselves. The researcher was responsible for breaking the holistic and unspoken meanings into different components and putting them into words. Using Carspecken's (1996) guidance, the researcher made mental notes of possible underlying meanings conveyed by participants while reading through transcribed interview data. After the initial readings, the researcher highlighted patterns and unusual events that appeared important to analyze. Low-level coding was used to mark out both routine and unusual events and for categorization. Several segments were selected that represented action patterns and abnormal phenomena as well as norms underlying more routine events for explicit, initial meaning reconstruction. The selected segments were copied

into a new Word document for high-level coding, and the researcher reviewed them to insert discursive understandings and explanations of tacit modes of meaning. Deep analyses such as pragmatic horizon analysis and validity reconstructions were conducted on the selected segments to clarify ambiguities, make events more explicit, and understand contextual motivation (Carspecken, 1996).

To ensure trustworthiness of the findings, the researcher conducted both verification on transcription of interview and peer-debriefing on coding avoided biased opinions from the researcher during the translation and data analysis while maintaining objective and non-induced data analysis (Caspecken, 1996). To be specific, after interviews, audio data were transcribed by the researcher who then asked a non-education major post-doctoral fellow—fluent in both Chinese and English and with no knowledge of the current study—to confirm the accuracy of the transcription. It should be noted that because one teacher’s native language was Chinese, the interview was conducted in Chinese to make certain that she felt comfortable to share her opinions and answer questions concisely with no misunderstanding. Her audio-recorded interview was translated into English. The post-doctoral fellow helped to verify the transcripts, which contributed to the fidelity and accuracy of the translation. Peer-debriefing was employed after interview data were transcribed and confirmed, the researcher and a different post-doctoral fellow who majored in early childhood education started analyzing the dialogical data separately and independently to outline themes, sub-themes, and initial codes. After both individuals finished coding, they met to compare and discuss each code. Results were discussed until full agreement was reached.

**Limitations**

There were three limitations in the study. The first study limitation was that only three teachers participated in the study, hence the sample size was small. Increasing the number of the participants could enrich the data and provide more comprehensive information for the study. The second study limitation was that only three instances of classroom observations over a two-week period were conducted before interviews. More frequent observations or even post-interview observations across a longer time span might better acquaint the researcher with participants and working actions, which might lead to better interpretation of their behaviors. The third study limitation was that all the teachers were recruited from the UWBB program in the Houston area, meaning that the results of the study might be restricted to this group of teachers and not be generalized to a larger population.

## **Chapter IV**

### **Results**

The purpose of this study was to determine how pre-K teachers defined and valued creativity in young children, the types of teaching strategies teachers implemented or considered necessary in supporting children's creativity, and the difficulties teachers faced when pursuing creativity enrichment. It was anticipated that pre-K teachers could be prompted to reflect on their current views of creativity as well as their everyday teaching practices. This reflection, in turn, would provide a more suitable definition of creativity in young children and allow teachers to plan and implement more useful teaching strategies aimed at the protection and enhancement of children's creativity in the classroom. As a prospective early childhood educator, the researcher believed that teachers should construct a better teaching approach and improve their teaching philosophies to accommodate innovations in society. This preparation would better serve students by prioritizing the role of early childhood education in individuals' career paths and guiding students toward successful futures.

Chapter four presents findings from three participants based on three sessions of classroom observation and two face-to-face interview sessions with each individual. The researcher used Carspecken (1960)'s critical qualitative research methods to highlight recurring patterns and unusual items for each of participant via data translation and analysis. The researcher then further compared and crosschecked data among participants to identify common themes, which were used to respond to the following research questions:

1. What are the pre-K teachers' perspectives on creativity in terms of how they value creativity and how they define creativity, characteristics of a creative student, and a creative-supportive early childhood classroom?
2. What instructional strategies do pre-K teachers use and consider effective to facilitate creative capacities in the classroom?
3. What difficulties do pre-K teachers face in attempting to foster creativity in the classroom?

### **Prelude: Getting to Know the Participants**

Three full-time pre-K teachers who worked in the Houston area and received at least two years of training from UWBB were recruited to participate in the study. All participants had rich teaching experiences in early childhood education. Before introducing the results from the dialogical data, impressions of each participant were provided as well as their working environments based on the two weeks of observations and interactions. The researcher hoped that the brief introduction of teachers could facilitate a better understanding of their responses to the study. All three participants were enthusiastic, self-motivated, and hard-working individuals committed to contributing to children's optimal development. However, participants possessed individual personalities, varied teaching styles, and different teaching philosophies.

#### **Nina**

“Anything of their wishes, anything that they are willing to do and I am there to support them.”

Nina had been teaching in a pre-K classroom for eight months. In her everyday teaching, she aimed to build trust with her students. Rather than self-determining the teaching curriculum, Nina respected children's individual developmental needs, interests,

and stages. That is, she allowed children to direct the classroom activities and decide what they wanted to learn and explore. This guiding concept meant that Nina never formally taught children any content knowledge because she believed that children possessed their own time schedule of learning different items. However, whenever children felt ready to learn Nina was there for them. She emphasized that children's creativity could be displayed everywhere, that children should be provided freedom, and that children should be allowed a variety of choices. Nina considered supporting children's needs to be the best way to stimulate children's creative development.

### **Sophia**

“We can help them to develop their creative thinking, and also we provide the basic, hopefully, they can have the basic reading, something like phonics, and something like that and prepare them they go to the regular school.”

Sophia was a pre-K teacher with 15 years of teaching experiences. The first encounter with Sophia was in the school lobby where she was working on the following weeks' curriculum design. She possessed rich and extensive teaching experiences but maintained her enthusiasm, passion, motivation, and devotion to early childhood education. Furthermore, Sophia never stopped learning, questioning, and reflecting on attitudes and knowledge, which deeply affected the researcher. She described herself as a structured person but believed that creativity was important to the future. At the same time, Sophia considered children's creativity to be built on children's basic experiences and existing knowledge, and that those were tools students could use to gain more skills and think more deeply. She believed that teachers, who planned everyday teaching, were keys to facilitating children's creative thinking. Thus, Sophia subtly planned different



activities to allow children to consider different kinds of truth, improve their cognition, and stimulate their thinking so they might ultimately be more ready for future learning.

### **Heather**

“My goal is for them to learn some things. You know I do have an expectation of them and like I stated before, by them being homeless I don't want them to get that negative connotation of them you know when they leave the preschool classroom and I want you to be spelling your name, I want you to know your alphabets, and I want you to be able to be independent, knowing learning help skills.”

The first impression of Heather's classroom was one of students' pictures hanging on the wall as well as explanations of the meanings of their names from their parents. This image gave the researcher a sense of home, care, and love. The classroom was nicely arranged and full of different kinds of supplies, books, colors, shapes, recycled items, and art materials; a “rich learning environment” was the first term that came to the researcher's mind. It was difficult for people entering the room to recognize that Heather's classroom was for homeless kids. Heather had been working with this group of children for 10 years. She called herself a “soldier” who protected her children and shielded them from negative outcomes; let them believe in trust and love; and ensured that they grew happily and appropriately like all other children. She believed that interacting with this group of children through building their self-esteem and self-confidence would benefit their creativity facilitation. She enjoyed watching or even joining in children's play, yet was very sensitive to teachable moments and used those to extend children's learning and teach them additional lessons.

## Coding Scheme

After carefully organizing and conceptualizing the data while ensuring their suitability to answer the research questions, a total of six major items were ultimately identified of which each was comprised of several relevant sub-items:

### 1. Valuing creativity in pre-K classrooms

- creativity is important to the blueprint of society
- creativity is critical to individual success
- creativity is necessary to be fostered at an early age

### 2. Defining creativity in young children

- creativity is important to the blueprint of society
- creativity is critical to individual success
- creativity is necessary to be fostered at an early age

### 3. Characteristics of a creative kid

- self-confidence
- open-mindedness
- adventurousness
- persistence

### 4. Creative-supportive classroom environment

- adequate physical space
- a variety of classroom supplies
- multi-themed learning centers
- secure and welcoming

### 5. Instructional strategies for facilitating creativity in children

- allow children to explore and think freely
- valuing more on the thinking process
- scaffolding
- motivation
- role models as a medium of symbolization

#### 6. Difficulties in fostering creativity in children

- individualized instruction
- lacking the capacity to facilitate creativity
- time constraints

### **Findings**

**Valuing creativity in pre-K classrooms.** This item was created in response to a portion of the first research question. It described how the three teachers viewed and valued the importance of creativity. During the interview, two teachers mentioned the significance of creativity in society, and all participants linked creativity to individual development and highlighted the necessity of fostering creativity in young children. In order to better clarify, present, and understand participants' ideas and statements, the following three sub-items were identified and established: "creativity is important to the blueprint of society," "creativity is critical to individual life and success," and "creativity is necessary to be fostered at an early age."

*Creativity is important to the blueprint of society.* Nina and Sophia shared a very similar view that people with creativity could contribute to the development of society (Gardner, 2009; Guilford, 1970; Sharp, 2004). Nina stated that the "country depends on creativity education that students are receiving at school." Her statement alluded to the

relationship between creativity and the development of a nation. More importantly, Nina acknowledged the responsibilities of education were to equip students with creative thinking: “even the parents are the first teacher, a lot of times; some kids don’t get the teaching from their parents. They get it from the teacher.” Thus teachers had the critical job of expanding activities and allowing children to freely express themselves and to explore things. Nina’s comments echoed Walberg’s (1988), who stated that school environments could stimulate creativity development in a very efficient way in all students.

In considering the future of society, especially technology and space advancements, Sophia said

I believe that creative thinking is important to the 21<sup>st</sup> century, seeing today’s development in technology and computer updating requires much creative thinking, how to design to develop new things, how to manipulate different functions of new technology, and human beings are even thinking to live in space for a year, so many equipment inside the spaceship. Without of creativity, we cannot achieve this dream and make it become true.

*Creativity is critical to individual success.* Creativity had been shown to lead to better life outcomes due to easier solutions being formulated for many problems (Csiszentmihalyi, 1996). Creative persons were in high demand because of their abilities to problem-solve, which were constantly needed for society (Sternberg & Lubert, 1999). All participants highlighted the impact of creativity on individuals’ quality of life. Nina commented that “Creativity is so important to the children’s future.” She related creativity with children’s cognitive development and stated “creativity gives children

divergent thinking skills, which is the key to problem solving, and it is the back bone of success.”

Creativity provided people with increased abilities of observation and analysis (Craft, 2000; Duff, 1998; Eason et al., 2009; Torrance, 1962). Sophia shared a similar perspective and commented “I want to equip them with creative thinking, so they won’t view things from a narrow view, only can see present, but are able to think about future, think further.” In addition, Sophia emphasized that creative thinking could affect many aspects of individuals’ lives:

Even we are not talking about great things that my students could contribute to the society or human being, they need creativity in their family life too, for example, how to create more space to put their stuff, or how to creatively use their menu to cook food. Creativity can be applied to many places, including the greatly improve in science and technology and personal professional development, relationships with family and friends. Creativity brings us a colorful and interest life. Without creativity, without flexibility, people’s life will be very boring.

Creativity was considered a desirable ability in the workplace (Lin, 2011) because creative individuals were able to provide new ideas and complete work efficiently and productively (Black, 2003; Craft, 2010). Equipping children with creativity could ensure their adaptability to the challenges of society and success in their careers. Heather mentioned “Because when you [children’s] grow up, you can’t do the same thing like everybody else. You have to think a different way to how to get the job done.”

*Creativity is necessary to be fostered at an early age.* It was widely accepted that early education played an important role in facilitating children’s creativity (Craft, 1999).

Creative children were more likely to make significant contributions to society from a long-term perspective (Hayes, 2004). All participants mentioned the idea of fostering creativity at an early age.

Conducting early interventions in children's creativity benefited children's development in all domains while building their knowledge, augmenting their strengths, and expanding their future learning capabilities. Nina said "It helps them to improve developmental skills for example, math, writing, and literacy." Nina further commented that creativity benefited children's further learning: "especially when they are going to elementary school, when they are going to middle school and high school and even when they get to college. It will help their learning capabilities."

Neuroscience studies indicated that experiences of early childhood could stimulate connections and development of brain neurons, especially from the time of birth to five years old during which a child's brain grows to be 90% the size of an adult's brain (Grindal et al., 2012). Therefore, creativity should be facilitated as early as possible. Sophia commented:

Children at 4 years old are experiencing the fastest brain development of their life. As a teacher, if we are able to prepare some activities to stimulate their neurotransmitters, children may have high level of thinking abilities, for example creative thinking in their future.

Creativity contributed to individuals' physiological and emotional health (Runco & Richards, 1997), including their self-esteem and self-confidence (Fleith, 2000), which required support and provided life-long benefits. Heather mentioned "I think creativity can go a long way even went through the adulthood, because it helps children to find

their own places and not being scared, being confident, seeing creativity and being unique, and being different.” Because she had worked with homeless children, Heather further explained that “just being different and knowing that being different is OK. I think creativity of being confident, having your [children’s] good self-esteem. I am thinking it goes a long way.”

**Defining creativity in young children.** The most frequently occurring points among teachers’ definitions of creativity in young children included “to be different and to be your own,” “creativity is children’s ability to symbolize things,” and “*creativity belongs to every child and can be fostered.*”

***Creativity means to be different and to be your own.*** The most basic elements of creativity included generating new ideas and viewing things from different angles, which in turn produce novel and valuable solutions to problems or original ways to complete work tasks (Davies & Howe, 2005; Sefertzi, 2000). During interviews, the three participants used words like “original,” “different,” “new,” “novel,” “unique,” “own,” “special,” and “not the same” to define creativity in students. Shaheen (2011), who grouped similar words, caused the researcher to use “different” and “be yourself” to represent the words above.

Nina said “Creative thinking gets new ideas.” In her opinion, creativity was defined as instances when children took time to use different items and build unique things, which enabled them to pursue their own thinking and interests. Based on this finding, everything generated from children themselves and not from others could be defined as creativity. Nina used children’s artwork as a way to explain creativity—she emphasized that children’s creative work represented their own thinking, imagination,

and viewpoints, which might be different from others' perspectives. During the interview, Nina showed various children's works and commented:

This is from his thoughts, this is his reflection, or his image... Maybe it's something that was on his mind. Maybe this one is something that was on her mind. I mean is not anything was from the teacher' standpoint. It was from the child's standpoint, not the teacher's. It's from their own images. It's from their own interpretations.

To Sophia, creativity meant that children viewed things from their own perspectives and built their thinking structures differently from others. Sophia defined creativity in children as “uniqueness” that “can be considered as children use different ways, different colors, and different structures to express their ideas and their thinking.”

Sophia further explained:

If they draw a circle, what does that circle mean? Some kids may say it is a sun. Other kids may say it's a play dough or pizza. Each child has different level of expressions and they may view things from their own angles. They provide you so many ways to explain a circle. Whatever it is if it represents themselves, it should be considered as creativity.

Sophia also viewed creativity in children as the process of constructing their own thinking and practicing their own ideas while making connections among available resources to create new things. She considered a scenario in which “a child chose to combine two materials to complete a new project in his mind, could be considered as creativity.”

Heather suggested that creativity made us “different from others, because we are



not the same and so that's what makes us so special." She related creativity to the word "special":

Everything they [children] do when they are building or creating something, whatever they are doing and they think that's special to them, I consider that is creative. Because that is different, so whatever it is if they feel special is creative. That's what they see themselves, they see their work is special.

*Creativity is children's ability to symbolize things.* All participants believed that symbolization could be considered to be children's naturally creative behaviors. They used children's block play as an example for describing how children used different materials to substitute for things they experienced in their everyday lives.

Teachers and adults were able to observe how children creatively represented themselves and the characters they dreamed to be in playtime. Nina's students sometimes would dress up like princesses in block play and build castles. She indicated that children would tell you the structure was a castle; if asked who lived in the castle, the children would say that they did. Nina considered that the children's use of blocks was creative in that they symbolized castles while imagining themselves as princesses who lived in those castles. Additionally, Nina mentioned that drawing could be considered another creative way for children to express their feelings due to their limited writing and linguistic capabilities. Nina said:

They show creativity when they try to do emotions and a lot of time we don't see it like some kids will be sad. But they don't know how to express it. A lot of times we wonder like why are they sad. You know but a lot of kids don't know how to

express it. So a lot of kids draw it, by even sometimes like my kids, even they are sad, they would draw something. A lot of kids would draw to do expression.

Children valued the integration of many materials and toys into their play because it allowed them to incorporate their life experiences in the classroom and use those materials to represent their thinking. Sophia mentioned:

For example, when they are in block play, they would love to have cars, toys, action figures, animals, and so many different things. They prefer to have all these stuffs in the play. But when you asked them the purpose of each material, they would tell you here was my parking lot, here was the zoo. So they want to have these stuffs which could match what they have seen in daily life. In their world of creativity, they have already combined real life with these toys. Thus they have their own ways to use and symbolize different real things from the materials and toys in the classroom. This also can be considered as their creativity.

Sophia also commented that many times she felt very surprised about how children could use items that adults had never considered as representing other things.

Heather shared similar experiences in her classroom. She said one child used a long block as her pillow and laid down on it; another child put the block on his head and said it was his goggles. Heather considered children's abilities to use things to represent real life items as being creative. Heather concluded:

You are using blocks. You may use blocks to make a TV or you may use that for different things. So that's being creative. What's that called? Like different representations, using things around them in the classroom. Well I think that's creative.

*Creativity belongs to every child and can be fostered.* All participants agreed that creativity was a natural gift that children are born with. Participants mentioned that adults could observe children's creativity. For example, Nina said "each child has their own natural creativity"; however, children represented creativity in different ways based on their individual needs and personal styles. In classroom teaching, teachers could witness children's creativity in their speaking, drawing, designing, expressions of feelings, or even gestures. Nina emphasized that even shy kids were creative—it was a teacher's responsibility to demonstrate more awareness of the trait. Nina explained that "Creativity is released through our [children's] needs. Anything can be creativity. Whatever they draw or whatever they are trying to tell me."

Creativity was found within young children, emerging via various forms and styles because of differences among individuals. Sophia shared a similar experience: "teachers could see children's creativity through their performances and activities. Even with the toys, they [children's] always show their creative thinking." Heather also commented that creativity was children's natural way of being different from others, stating "Each child is different, each child's creativity is different, and each child sees different things in totally different ways."

Both Sophia and Heather emphasized that creativity in children required teachers' intentional facilitation in the classroom. Sophia suggested that children's creativity could be developed by nurturing basic knowledge and information: "It is teachable and developable. If you teach them and give them the basic ideas or basic concepts, they can develop by themselves." Sophia further explained that "for normal kids, in general speaking, if you give them some basic information and ideas, they may think a little bit

further, build up more things and develop more ideas.” Her comments also implied that creative thinking needed to be an advancement or generation of new ideas beyond the information given. Heather concluded that “children are born with creativity and I think it takes teachers to scaffold their creativity.”

**Characteristics of a creative kid.** Participant teachers described characteristics of creative students as “self-confidence,” “open-mindedness,” “adventurousness,” and “self-confidence.”

*Self-confidence.* Three participant teachers mentioned self-confidence as being an important characteristic of creative children. Self-confidence encouraged children to try new things, evaluate themselves in more appropriate ways, and face challenges and failures bravely. Sophia stated “Sometime the major problem is children’s self-confidence, it’s not like they can’t but it’s more like they are afraid of doing it, so self-confidence is very important.” Self-confidence was when children believed in themselves and knew what they were doing. Heather gave an example from children’s block play. One girl in her classroom was building a room which she considered to be a house for dinosaurs. Another student pointed to her work and said it was not a house. This action did not make the girl doubt her work; instead, she responded to the student firmly by saying “This is a room for my dinosaurs.” Creativity required self-confidence to trust one’s self and one’s own feelings, to keep faith with what one was doing, and to face judgmental and negative criticisms directly and bravely. Self-confidence also improved individuals’ persistence in completing goals. Nina commented that “When I think of the kids, a lot of time when they try to doubt themselves, if I know that it is the point whether they can do it.” Sometimes children felt afraid and doubted their capabilities to try

activities, and it was the teachers' responsibility to know students' potential capabilities and to encourage them to engage in such tasks, especially initially.

*Open-mindedness.* Participants all shared their opinions that creative children did not limit themselves to one thing, rather opening themselves to different ideas, views, solutions, and people. Further, creative individuals were flexible with options, whenever in play activities or classroom discussions.

Nina shared her classroom experiences in describing that creative kids actively engaged in activities with both teachers and other students. In classroom discussions, Nina found that “creative kids they are open to us [teachers] and they are quickly ask (questions).” Also, during play, Nina found creative children were willing to collaborate with other children—even shy kids:

I think creative kids even they will be able to pull the shy kids from not being so shy. So you mean open them up. They will be able to open them up a little bit.

Creative kids make friends with the shy kids. Creative kids will quickly invite shy kids to centers and that variety.

Creative children freely obtained ideas from different sources, and they permitted new ideas to interact with their previous experiences to build new concepts. Sophia mentioned:

Creativity is based on the previous experiences to develop new things, not stick with previous ideas but open to new things, and feel flexible to absorb useful information, update previous ideas and knowledge.

Based on her ideas, Sophia emphasized that creativity depended on basic experiences and existing knowledge. She also explained how children conducted creative

thinking during toys play: “They will have their basic experience like what they saw before, and recall what they read in the book before.”

*Adventurousness.* Two participants mentioned that increasing children’s spirit of adventurousness by helping them to pursue their interests, tasting new foods, doing new activities, and not being afraid to face failures was important to creativity facilitation in children.

Children were naturally both curious and reserved. They wanted to explore the outside world yet they felt fear when facing new experiences. Sophia gave an example that:

Last week, we learned different types of fruits, so I made a tasty party for them.

The first time I prepared them three fruits, which they normally eat at school like apple, orange and pear. I asked them to taste first and told me which fruit they like the best, so we did a little bit math to calculate what their favorite fruit was. The second time, I prepared some fruits that they were not familiar with, because we were not eat very often at school, especially the grapefruit; most of children never eat it before. I found that some of my students were not willing to try it. In classroom activities, we could always observe that students might or might not try new things. They have different attitudes to new things.

Unsurprisingly, adventurousness was correlated with creativity and deemed necessary to be encouraged within students. Sophia commented “If they feel afraid to try things, feel afraid to face failure, their creativity can be impeded.”

Adventurousness also required children to not worry about how other people would judge their actions or evaluate their work; instead, they should pay attention to the

process and enjoy the experience. Heather mentioned “I want to say just going in and not caring, you know. Not being worried about what somebody else thinks about your creativity.”

**Persistence.** Two participants valued persistence in the process of pursuing interests, completing activities, and realizing creativity.

Nina described persistence as “they [children’s] attempt or try to do things and they are working hard to do it.” As a teacher, Nina valued the process and desires of children while they spent time doing things rather than final outcomes, especially for projects they were incapable of doing or unfamiliar with. Nina said “if they are trying to do it, they are attempting so as long as they are trying. It doesn’t have to be perfect. They don’t have to be perfect, especially if they are not used to do it.” She gave an example: “They [children] can draw on a piece of paper, it can be creativity. If they are trying to write something, they don’t know how to write very well. But they are trying; they are attempting to do it. It is creativity that they are attempting to write.” Persistence could be represented as children’s continuous efforts to solve problems and their courage to face difficulties and failures; such qualities led children to achieve creativity. Sophia stated “they can try again and do it, try it over times. They need to be persistent.”

**Creative-supportive classroom environment.** Classroom environments were central to the development of creativity in students, and unrestricted environments allowed the greatest creativity development to occur (Rhodes, 1961). Compare with family environments, school environments with sufficient support and continuous encouragement from teachers were considered to be more efficient in creativity facilitation (Hennessey & Amabile, 1988). Runco (1993) confirmed that having materials

and resources which could induce students' original and constructive thinking would contribute significantly towards building a beneficial and cooperative classroom environment. Hennessey (1995) and Craft (1997) suggested that certain aspects, including social, behavioral, and technological curricula; school buildings; and classroom spatial factors could be taken into consideration to create conducive environments. Multiple research groups and educators discovered that children in creative-friendly atmospheres were more likely to exhibit creativity, efficient performance, problem solving capabilities, and risk-taking skills (Baran, 2011; Fisher, 2013; Isbell & Raines, 2013).

All three participants shared opinions about features of creative-friendly classroom environments that they considered effective for fostering children's creativity. Those factors were coded as "adequate physical space," "a variety of classroom supplies," "multi-themed learning centers," and "secure and welcoming."

*Adequate physical space.* Space was a common concern expressed by all participants. Teachers mentioned that bigger classroom spaces gave them more flexibility and provided them with the potential to design different activities for children.

Open space benefited children in many ways such as ensuring children's flexibility in manipulating different materials, supporting mutual communication between them and teachers, and allowing them to meet their natural needs and follow their developmental paths. For example, Nina mentioned "I want it to be kind of open space, where the child is able to [she paused a while], hopefully the child will be willing to learn enrichment." Nina's comments suggested that open space might encourage students' thinking and exploration.



Sophia expressed that her dream classroom would have a bigger space where she would be able to prepare and design more activities for children. She stated “Our classroom is still very crowded.” It was obvious that more space would bring a variety of options for both teachers and students. Sophia further described her ideal, saying “If I have a bigger space, I can separate them [children] into different groups to engage in activities like dancing, singing, and storytelling. More space may bring more choices for them [children] to decide what they want to do.” Additionally, she mentioned the importance of outdoor spaces and supplies: “If we have a bigger playground with more stuff, we are able to design more outdoor activities for the kids.” Sophia’s comments indicated that outdoor activities contributed to children’s creativity development.

A clear relationship between outdoor activities and creativity in children was addressed by Heather, who indicated:

I think it is just like maybe the space and different surroundings, like you have different things going on out there versus inside the classroom. Maybe the classroom is more kind of like restricted area. But when you go outside more free, freedom, you know colors, you know different things. I think nature just provides that. You know...it brings a lot to the mind. Allow children to use their different types of senses.

Natural environments gave children a sense of freedom and relaxation; boosted their sensory and physical development; and ensured their enthusiasm, energy, and curiosity to explore many natural phenomena, which in turn sparked children’s creative thinking. Moreover, Heather indicated her desire to include more physical activities into the classroom by stating “One of my biggest things that I want in that classroom is a

larger motor area, somewhere like if it's raining outside the kids have this opportunity to jump of the stuff.” This statement also demonstrated Heather’s ideas that children’s physical activities benefited their creativity.

*A variety of classroom supplies.* Classrooms stimulated children to engage in more activities when they had diverse materials that were clearly displayed and easily accessible. Craft (1997) suggested incorporating resources such as books, computers, atlases, games, construction materials, puzzles, and craft materials in classrooms to promote creativity in students. When comparing different types of materials, unfamiliar materials were deemed better than familiar ones. One reason for this differentiation was that children played with familiar materials based on rote associations and preconceived ideas, which were not optimal for creativity development. Conversely, unfamiliar materials inspired students to bring novel ideas and possibilities into classrooms (Runco, 2003).

Nina believed that rich materials provided children with different choices to choose from. For example, Nina stated “they always have a choice. They can choose one thing or another or they will get three different choices and they can choose which one they really want to do.”

Meanwhile, Sophia indicated that rich materials had different purposes, cultural meanings, functions, and textures, which allowed children additional opportunities to develop their thinking. In particular, those materials that contained a wide range of content and elements for children to explore and learn were deemed best for classroom use. Sophia pointed out that:

In our library, we have different books within various subjects including animals, plants and stories except media characteristics, cultures, and religions. Also, this is similar to music. There are various types of music can stimulate children's creativity. We provide a variety of books for children, same as music and toys, materials that could be used to symbolize things in real lives. All of these materials are beneficial to promote their creative thinking.

In addition to various supplies and diverse materials within classrooms, teachers introduced unfamiliar and open-ended materials that could increase the likelihood of stimulating creative thinking in children. Heather mentioned that open-ended materials helped children learn many concepts:

That's what Bright Beginning is kind of [she paused a while], about you know just provide them materials and not tell them how to use it. That's what creativity comes in. So just provide them materials and just open-ended materials and just let them to explore.

Heather further described the usage of open-ended materials on children's creativity:

You don't have to suggest. You are not limiting yourself to one idea. That's why we use a lot of recycle materials in there. You are not limited to build a house. You know you are not limited to just one thing. So you can use your creativity to create different types of things.

***Multi-themed learning centers.*** Teachers should prepare a variety of centers for students and arrange them strategically to support children's learning. All participants

presented that centers should be separated and have their special functions designed for children.

When teachers prepared the classroom environment, they intentionally organized learning centers with multiple functions. By doing this, children were provided with a variety of choices. Nina mentioned:

We have a science area, we have science table, and we have a home dramatic play area. We have blocks, we have computer area, we have art, we have reading, and we have manipulative, where they can do to the table and we have sandbox.

Nina also gave an example of combining children's input into learning center arrangements:

We changed the reading and the art. We switched the location. Well, like I said my co-teacher and I want to rearrange something in the room. We just want to rearrange, so we ask the kids how you would feel about the v area space. They said they want to try it. So my co-teacher and I, we switch the art and the v-shaped reading area. It is a kind of a cozy and private area now. And also we have a writing center. The writing area so they can write things.

The reading area allowed children to direct their own learning at their own pace:

There are some kids very interested in reading right now, so we will have the level one books, first readers, some of my parents already read them first reader books, so they want to practice reading then they can.

Both Sophia and Heather indicated that each learning center should have its own function. Sophia shared that:

The arrangements could base on their interest centers as you can see in my classroom. These quiet area needs to be separated from noise areas. I mean noise centers are together and quite place are together, for example, science center should be connected to quite place.

Heather further emphasized “You know I am thinking everything should be right, so perfect. Every area should be its own area.”

*Secure and welcoming.* Maslow (1970) indicated that creativity was a highest level of need for human beings and termed self-actualization. Achievement of self-actualization first required the realization of the other four basic needs: biological and physiological needs; safety needs; love and belongingness needs; and esteem needs. Previous research indicated that secure environments were established through positive relationships between teachers and students (Xiaolei & Yan, 2004). While some researchers confirmed that positive and close connections between teachers and students could promote creativity, they also found that negative and impassive relationships had an opposite effect of not enhancing creativity (Esquivel, 1995; Shallcross, 1981; Torrance, 1970; Woods, 2004). All participants mentioned factors of security and welcoming as forming the basic foundation for children’s creative thinking.

Classroom environments provided children with a sense of comfort, security, and value, which in turn promoted their creative thinking and led them to optimal learning outcomes. Nina stated:

I think it should be secure and heartwarming. So we have to actually think, pursue and relax, in order to be able to be comfortable to tell the story or to read the story in the reading area. They have to feel safe and relax, so they feel comfortable and

trusting. So they are comfortable with thinking.

Children were willing to express and share when they had trusting relationships with their teachers. Nina used the words “guidance to trust” to describe the classroom environment that she expected to build:

The surrounding and the teachers, the environment as a whole. If they don't trust it and they would not open up and then they would not be able to express their creativity. Give them a trust and safety environment, so they would be able to be comfortable.

During interviews, Sophia expressed a concern for her own physical safety in dealing with pre-K children. She was also the only teacher who brought up this issue: “for the physical arrangement, we need to consider their safety. We cannot have a straight and open area for children running in the classroom. This may cause us some safety issues.”

Because Heather worked with a group of children who required special care in their emotional development, she designed her classroom environment to encourage close interpersonal relationships with students in order to express her love, care, and sense of welcoming. Heather considered that such a display would benefit children's self-esteem and self-confidence: “The way they come in when they see different things in the classroom. When they see themselves in the classroom with the pictures and the wordings, it gives them a sense of self.”

**Instructional strategies for facilitating creativity in children.** Effective strategies should match teaching objectives in engaging students' thinking and learning, nurturing their different abilities, and ultimately providing them with comprehensive

development. A variety of instructional strategies that benefited children's creativity was provided by the three participants, including: "giving children freedom to explore and think," "valuing more on the thinking process," "scaffolding," "motivation," and "integrating children's everyday experiences."

*Allow children to explore and think freely.* Children's creative thinking flourished in free atmospheres where they could self-direct their activities, engage with multiple choices and different materials, and not be judged by adult governed rules. All teachers mentioned that children should be given sufficient times and opportunities to freely express themselves and explore things.

Nina and Heather agreed that children should be permitted to explore different things, express various viewpoints, and finish projects in different ways. Nina mentioned "We don't try to prevent them based on one thing," while Heather stated "Allow the children to know that there is not one way to do something."

To better serve children's thinking and exploration, teachers need to allow children many choices and options. Nina said, "You [children] have the choice to do, you can choose to go here or go there. You can choose to use this item, that item or this item." Nina used an example of providing children different self-expressive materials in art activities:

You [children] have the choices of chalk, shaving creams, markers or crayons. So they can choose whatever they want to do. If they want to just use their figures draw with the shaving cream, then it's fine. It is nothing wrong with that. If they want to paint, they can paint. I will just put it on the table and in that way they can

choose what they want to do. What they put into their hand, paintbrush or whatever to their needs.

Sophia shared a similar view: “we provide different sources to children, show them different things, and then encourage them to freely choose whatever they want to play with it or do their projects. We believe that their creative thinking will be developed based on these things.”

Play, especially child-directed play, prioritized the ability of children to self-direct their own learning while providing them with many possibilities to explore and think. Both Sophia and Heather valued the function and significance of play, especially free play, in promoting children’s free expression and creative thinking. Sophia mentioned that she gave children freedom to play: “when they in play, it is not necessary constructively tell them what they need to do and how to do, but just let them free thinking.” However, Sophia also emphasized that in pre-K classrooms, teachers needed to control the length of the time children engaged in free play. Play not only gave children joy but also helped them to develop both effectively and fully. Heather said “Play is fun. That is the way they learn and develop.”

***Valuing more on the thinking process.*** All participants unanimously mentioned the necessity of valuing children’s thinking process rather than the final product in pre-K classrooms. Their ideas were consistent with previous studies indicating that creativity in children was difficult to be determined by outcomes (Craft, 2000; Eason et al., 2009; Isbell & Raines, 2013; Schirrmacher, 2006). Children normally enjoyed and benefited from the process of doing things more than the products they made.



Children's attempts to try new things, especially applying great concentration to activities, should be greatly appreciated even when results do not meet adults' expectations. Nina commented, "If they [children] are trying to do it, they are attempting so as long as they are trying. It doesn't have to be perfect. They don't have to be perfect, especially if they are not used to do it." In responding to children's work, teachers should be open-minded and remain objectively neutral. Nina suggested "They [children] are showing us what they do when they build. But it's up to us to ask them what you are building, so they can generate or tell us exactly what it is. Because what we may think it is, it might not be that." Such strategies enabled children's self-expression and benefitted their creativity. Pre-K teachers were able to observe children's innovative thinking and creative actions when they were engaged in play or art activities. Sophia provided an example similar to that of Isbell and Raines (2013) from her classroom: "they use the color, they blend the color together and make the picture so bright. You can see that their mind is thinking." This example implied that children showed their creativity during the process of creation rather than the final artwork product.

Therefore, teachers of young children needed to focus on processes when evaluating children's development. Heather said:

I have to say it's not the final product like product versus process and process versus product. It's not that. It's the process of them getting to that process what senses did you [children] use, what materials, how did you come to even think about it, what would you think about when you do that.

Heather also concurred with Nina when mentioning that teachers should allow children to describe their works without judging or assigning value: "my strategies are

[sic] not to judge the child, picture or creativity. Don't assume it is one thing when it's not, that one is not good." Heather expanded on this topic, saying "If you thought the child was drawing an airplane, but it might not be an airplane." Thus, rather than saying "Wow, I like that airplane that you draw," teachers should first ask "tell me about your creation, tell me about what do you design."

**Scaffolding.** With teachers' appropriate guidance, children could reach "the zone of proximal development" to build and extend upon their current knowledge and skills (Vygotsky 1978). All participants considered that scaffolding needed to be used in early childhood classrooms by use of questions, suggestions, and responses. This probing would in turn expand children's activities; promote their thinking skills; help them to master new skills; stimulate reexamination and modification of their projects; and assist them to reach optimal development at every developmental stage.

Teachers should understand students' capabilities and potentials when trying to support them effectively, relieve their frustrations, or encourage their persistence and motivation in task completion. Nina mentioned that teachers should "Allow them to be, not always free willing but you will be able to know how much your child can do or will do. But if they get discouraged and just try back it up and support them."

Scaffolding could also be incorporated into teaching by providing children with different options and choices. Nina said "If he [a child] tried it that way, ask if you [he] can try it another way or can you [he] give another way of trying it?" In classroom discussions and activities, Nina always gave children different opportunities to extend their learning, especially when children were facing dilemmas over next steps. Nina commented:

I give them different possibilities through discussions and activities, if they have come up with the solutions, or if like at their standpoints, they don't know what to do the next, then I will give them different possibilities, maybe you can try this way, how about you guys try this way and your other friends will try that way and then maybe you can switch.

In addition to offering children options, Nina gave children with opportunities to ask questions and express their feelings or opinions. Nina considered this to be a good way to engage all children in her classroom while supporting their creative thinking: "I ask them questions and I give them the opportunities to relate it back to me with questions. I would allow them to express themselves. Like where we will have a discussion, I let them to tell their points of view. I try to make sure all the kids are involved."

Scaffolding encouraged children's problem solving abilities, which in turn benefited their creative thinking. Nina commented:

Allowing the children to solve their own problems. A lot of time they get into contention and arguments, where they don't get along. But the first time we will try to send them and allow them to talk it out by themselves. If they know they did it wrong to say 'sorry', but if they cannot solve it on their own and then the teacher will step in.

Sophia, who frequently mentioned that creativity was built on knowledge and life experiences, considered scaffolding to be essential for children to build connections with real life experiences, especially when children faced challenges in creating their projects. Sophia shared an example of helping a boy who didn't know how to build a car:

We may give them an intervention. We could ask him what you want to build. If he wants to build a car, we could ask him what the shape of a car is. Helping him to collect the image of a car from his real life experience. We need to induce kids to remember what a car look like, does a car have tires, what are the shapes of the tires. This kind of basic knowledge kids should know from their daily life.

Based on the story, Sophia also suggested implementing two strategies during the process of scaffolding: “Using different open-ended questions to stimulate their thinking” and “giving them some hints if it is necessary.”

Heather shared similar perspectives: “scaffolding and doing intervention, setting up the interventions for the kids.” Teachers should be sensitive to every teachable moment, intervene to help children think creatively, and attempt to learn more things. Heather gave another classroom example of when students were using pipe connectors to make different letters and objects. A girl who was trying to make a walker suddenly asked “Ms. Heather, can the water go through the pipe?” Heather realized that it was a good learning opportunity for the child. She commented “How can I extend the activity for her? You know we have these little containers that we put water in and let the children measure. So I was like OK I am going to extend this activity to her so she can see how the water just goes through the pipes.” So Heather responded to the child: “Yes, let’s explore to see if water can travel like that!”

Like Sophia, Heather suggested that teachers “observe and join in children’s play and ask open-ended questions like how, when, what, why” to support students’ learning and stimulate children’s thinking.

**Motivation.** All participants mentioned the importance of motivation in helping

children to achieve creativity. Previous studies suggested that both internal and external motivation benefited children's creativity development (Sternberg & Lubart, 1991). Yet other groups indicated that extrinsic motivation for certain tasks could have negative effects on intrinsic motivation, thereby hindering the development of creativity (Hennessey & Amabile, 1987). Children naturally had intrinsic motivation because they were born with a curiosity of the outside world. Thus, teachers needed to encourage children's intrinsic motivation by using classroom activities.

Motivation built children's persistence and self-confidence, which were two factors teachers considered important to growing creativity. When children felt frustrated or had low levels of self-confidence, teachers should intervene. Nina said "I try to motivate them. I try to motivate them that you know it's OK that you can go and try it again. Basically try not to give up. Keep trying it until you know." Nina also commented on the function of encouragement usage to creativity: "to motivate them to do things, because if you don't motivate them, you will get discouraged. But if you motivate them, they will open up to use the creativity skills."

Sophia also mentioned that praise and encouragement were effective ways to motivate children and inspire them to achieve creativity. However, Sophia emphasized that praise and encouragement should be used in different situations: "when they get the project done, whenever it reaches your expectation or not, you should always praise their work. You should respect their work." However, encouragement was more appropriate to motivate children to make attempts, approach tasks in different ways, and try new things. Sophia further commented "During the process, we should give kids encouragement; give them some hints, to stimulate their thinking and development." Appropriate

encouragement would allow children to explore more new things, with Sophia suggesting “it is also important to give them encouragement, using encouragement to stimulate their thinking and assist them to explore more things.”

Heather valued motivation in building children’s self-esteem, which she considered related to children’s creative abilities. In classroom observations, the researcher saw Heather praise a girl who used a potato masher in a circular way to paint. Heather lauded her work as being creative. Heather explained “I think when we see that and we express it and I think it makes them feel good about themselves and it helps their self-esteem.”

***Role models as a medium of symbolization.*** Children’s natural abilities to substitute and symbolize actual subjects and life experiences into their artwork creation and play were defined as creativity (Glaveanu, 2011). Both Nina and Sophia suggested integrating children’s role models in the classroom in an effort to stimulate their creative thinking.

Role models provided children with sources and ideas for play and drawing to enrich their school lives; simultaneously, those characters stimulated children’s thinking as well as their curiosity and interests for learning and exploration. Children were naturally capable of using role models taken from different sources into classroom activities. Nina mentioned

There are a lot of kids want to do princess roles. So a lot of kids they want to dress up as princesses. And other times, they would draw like a lot of time, they want to live in the castle. So you would see those drawing castles and princess a lot of time. Some of my kids are into superheroes and they look as them to be role

models, superman, batman, and so they look as them being heroes, he would say he is going to save the world. One day I will go and be a policeman so I can save the world. So they are expressive.

Nina considered that incorporating role models in play could spark children's imagination and creativity. Sophia shared the use of a similar strategy in her classroom: "We also use their hero such as Superman, Spiderman, and Ironman to encourage them [children]." Such recognizable youth-oriented characters were used in Sophia's classroom to facilitate children's creative thinking and encourage their good behaviors and habits.

**Difficulties in fostering creativity in children.** Many studies found that teachers did not adequately and effectively facilitate creativity in teaching (Donnelly, 2004; Kampylis, Berki, & Saariluoma, 2009; Teo & Waugh, 2010). All participant teachers described similar difficulties. The challenges mentioned by the teachers were categorized as "individualized instruction," "lacking the capacity to facilitate creativity," and "time constraints".

***Individualized instruction.*** It was common for children in classrooms to come from varied cultural and socio-economic backgrounds, to have reached different developmental stages, and to possess unequal levels of learning capacities. Such situations required teachers to employ personalized instruction in the classroom to satisfy children's varied interests and needs. However three participants expressed their difficulties in meeting this expectation.

When there were children who were second language learners, it could be challenging for teachers to overcome the linguistic and cultural barriers, to connect with

those children, and to understand their needs. Nina was a teacher who worked at a bilingual classroom and who voiced these concerns: “sometimes it is hard to get the focus of some kids. It’s because some of those kids are not used to English.”

Differences among students might also be observed by their attention spans and capabilities to complete certain classroom activities. In other words, children might need different lengths of time to finish projects based on their interests, strengths, and limitations. Sophia mentioned, “Some kids may finish it very quickly, but some may take a long time to warm up.” However, when working with groups of young children whose attention spans were still short and who were easily distracted or bored, Sophia emphasized that “Teachers still need to control the length of the time of their free play.” To determine a suitable time frame for an activity, teachers who knew the whole class should comprehensively consider the majority of children’s situations. For children who were afraid of trying new things or felt it difficult to start their projects, Sophia suggested “we need to give more encouragement to the kids who need longer time, because they are waiting for you to help them to get started.”

Teachers were responsible for promoting students’ motivation and willingness to participate in classroom activities, to encourage their involvement, and to complete activities in a certain timeframe. Sophia emphasized “As a teacher, we should implement different ways to stimulate them, break their barriers to try thing.” In fact, such strategies were also important to lift confidence levels of children when trying new things; for some extremely reserved children, teachers even needed to pay more attention and supply more specific instructions. Heather reflected on her own classroom: “I am thinking about because [how], in here, you have children from different types of needs, and I really want



to get down to what is that [how] each child can really be benefit most from each experience.”

*Lacking the capacity to facilitate creativity.* The development of children’s creativity depended on teachers. However, two participants mentioned that they seldom intentionally planned activities that aimed to facilitate children’s creativity. Sophia mentioned: “I think the biggest problem is the teachers themselves. If you ask me is there any specific theme I am planning for fostering children’s creativity. I am not intentionally trying to do that.” Sophia mentioned that the key was whether “the teacher intentionally and carefully designs the activities.”

Teacher qualities included how they valued creativity in young children, how they evaluated themselves in teaching for creativity, and how those evaluations affected their teaching in the classroom. All three teachers openly discussed their personalities as well as their teaching styles, philosophies, and preferences. They took these factors into consideration and related them to the difficulties of fostering creativity in their classrooms.

All three teachers realized the importance of creativity and their crucial roles in facilitating creativity in children; however, they felt challenged to focus on creativity, integrate it into daily teaching plans, and develop it as a skill. For example, Nina said:

I am focusing on majority of everything, not just one thing at one time. Creativity is used through a lot of things, materials and everything. As I said, I cannot just value on one thing. I mean it is important and it’s a great deal.

During curriculum design, teachers also focused on accomplishing several teaching objectives in which creativity was absent. For example, Sophia admitted:

When I design my lesson plan, I always think about what children can learn from this theme and what I can do to help them reach the teaching goal. During the process, sometimes, I may ignore the goal of developing their creative thinking.

One reason why creativity was difficult to introduce in classrooms was that teachers themselves were lacking ideas to design activities that benefited children's creativity. Sophia explained:

I am thinking the teachers themselves are crucial to determine what kinds of activities prepare to children. To be honest, I cannot develop or think more creative teaching ideas, or design them many good themes to develop their creative thinking.

Creative teaching practices were correlated with teachers' personalities, however there were no significant relationships found with teachers' experiences (Dababneh et al., 2010; Eason et al., 2009). Sophia said:

The reason why I did not pay attention to their creative thinking may not be related to my experiences or teaching experiences, maybe because I am a very structure person and I pay attention to their knowledge teaching.

Heather indicated that she wasn't sure about her teaching strategies or outcomes of creativity facilitation in children: "Because I never think myself as being creative."

***Time constraints.*** Two teachers mentioned that they had limited time to design specific creative-friendly activities for children. Sophia posited "In our schedule, it is really hard to find enough time to plan activities that are intentionally for children's creativity. You could think about it but it takes time to prepare the materials." Heather also emphasized that pre-K teachers spent most of their day in the classroom with

students and faced an intensive daily schedule. Heather shared similar concerns as Sophia on the need for additional time to plan creative periods for kids:

Maybe more time as well as trying to plan more intentional things for the children to be creative way, when it comes to whether to purchase more material or look around your classroom and be able to sit just really sit down to think about those things that really need to be in place.

Optimal creativity teaching required teachers to respect children's individual personalities, satisfy their developmental needs, and cater to their unique interests. Planning activities aimed at creativity facilitation required a significant commitment of time and energy. However, it was difficult for teachers to find such time in their everyday schedules, as Heather illustrated: "All depends on the interests of the child. When you are able to sit down and think about each child's needs and what you can and can't do for them. I think that takes a great amount of time."

## **Chapter V**

### **Discussion**

#### **Introduction**

In this chapter, the researcher briefly reviewed the purpose of the study, the research questions, and the research method. The major study findings were presented and analyzed in the context of the research questions. Findings included suggestions, solutions, and implications for both research and practices. Conclusions were made and limitations were addressed to propose improvements for future studies.

The study aimed to probe teachers' understanding and knowledge of creativity to determine how creativity was defined, what teaching strategies were employed to facilitate children's creativity in the classroom, and what difficulties were encountered during teachers' daily practical teaching tasks. From the teaching experiences and classroom stories of the three pre-K teachers, valuable information emerged regarding their current statuses, concerns, and problems with teaching for creativity.

Also, the researcher hoped that this study would illuminate best practices for early childhood practitioners, researchers, professional training providers, administrators, and policy makers. This discovery, in turn, could allow for better understanding of creativity, well-organized teaching approaches to creativity, and creativity-centered curricula in the classroom. Such advancements might lead to more suitable and developmental-favorable classroom environments and sufficient administrative support, which could subsequently boost children's creative capabilities, provide them with bright and competitive lives, and ultimately benefit development and prosperity of society.

Three research questions were designed in response to the specific aim of the study:

1. What are pre-K teachers' perspectives on creativity in terms of how they value creativity and how they define creativity, characteristics of creative students, and creative-supportive early childhood classrooms?
2. What instructional strategies do pre-K teachers use or consider effective to facilitate creative capacities in the classroom?
3. What difficulties do pre-K teachers face in attempting to foster creativity in the classroom?

To answer these research questions, a qualitative study was conducted with three pre-K teachers. Data collection for each participant was divided into an hour of classroom observation on three occasions and 40 minutes of face-to-face interviews on two occasions. Observations acquainted the researcher with teachers and their working contexts. Interviews were used to hear, examine, and understand teachers' thoughts, practices, and difficulties concerning creativity and creativity facilitation in young children. Carspecken's (1960) critical qualitative research guided the study, and dialogical data of three participants were translated, coded, and compared. Finally, common themes were identified and placed into six major items:

1. Valuing creativity in pre-K classroom,
2. Defining creativity in young children,
3. Characteristics of a creative kid,
4. Creative-supportive classroom environment,
5. Instructional strategies for facilitating creativity in children, and

## 6. Difficulties in fostering creativity in children.

The first item contained three sub-items related to the valuation of creativity in pre-K classrooms: “creativity is important to the blueprint of society,” “creativity is critical to individual success,” and “creativity is necessary to be fostered at an early age.” Item two identified definitions of creativity in young children, including “creativity means to be different and to be your own,” “creativity is children’s ability to symbolize things,” and “creativity belongs to every individual child and can be fostered.” Item three was comprised of four sub-items of characteristics of creative children: “self-confidence,” “open-mindedness,” “adventurousness,” and “persistence.” Item four delineated factors of creative-supportive classroom environments and consisted of four sub-items: “adequate physical space,” “a variety of classroom supplies,” “multi-themed learning centers,” and “secure and welcoming.” Item five demonstrated effective instructional strategies for facilitating creativity in children and had five sub-items: “allow children to explore and think freely,” “valuing more on the thinking process,” “scaffolding,” “motivation,” and “role models as a medium of symbolization.” Item six included current challenges and difficulties teachers faced in fostering creativity in children and included three sub-items: “individualized instruction,” “lacking the capacity to facilitate creativity,” and “time constraints.”

Interactions and conversations with participants during classroom observations and interviews were very productive, and data generated by teachers addressed all three research questions. However, some interview questions could be improved in future studies to yield better and richer participant responses. The next section included several suggestions for instrument improvements in future studies. Items one to four answered

research question one: “What are the pre-K teachers’ perspectives on creativity in terms of how they value creativity and how they define creativity, characteristics of creative students, and creative-supportive early childhood classrooms?” Item five presented effective teaching strategies related to research question two: “What instructional strategies do pre-K teachers use and consider effective to facilitate creative capacities in the classroom?” Item six correlated the challenges and difficulties faced by teachers with research question three: “What difficulties do pre-K teachers face in attempting to foster creativity in the classroom?” Detailed findings to each research question are discussed below.

## **Discussion**

Interview data consists of participants’ responses to each research question, as discussed below. Suggestions, solutions and implications are also presented based on participants’ answers.

**Research question one discussion.** What are the pre-K teachers’ perspectives on creativity in terms of how they value creativity and how they define creativity, characteristics of creative students, and creative-supportive early childhood classrooms?

Research question one was addressed by items one to four. Item one identified how teachers valued creativity, and sub-items included: “creativity is important to the blueprint of society” and “creativity is critical to individual success.” Craft’s (2000) concepts of “big c creativity” and “little c creativity” were consistent with these findings, which discussed the impact of creativity on social innovations, cultural changes, economic development, and individuals’ daily lives.

Two teachers approached the importance of creative individuals from a “big c” perspective. These teachers mentioned the possible contributions of creative thinkers to future developments in society and technology. Heather was the only teacher who did not address “big c” creativity, possibly because of her students’ backgrounds. Rather, she valued creativity for its contribution to students’ future personal achievements. All three teachers expressed beliefs that “creativity is necessary to be fostered at an early age,” which were consistent with previous findings that early childhood was a critical period for children’s creative thinking (Sharp, 2001; Torrance, 1964). More importantly, this finding implied that participants were aware of and responsible for realizing such creativity enrichment.

Item two introduced teachers’ definitions of creativity in young children and consisted of three sub-items: “creativity means to be different and to be your own,” “creativity is children’s ability to symbolize things,” and “creativity belongs to every individual child and can be fostered.” The researcher found that it was challenging to identify and build such sub-items from participants’ responses because many definitions overlapped and lacked clarity or elaboration. Such findings were consistent with Romero, Hyvonen, and Barbera’s (2012) conclusions that teachers’ understanding of creativity was still inadequate. One reason for this obstacle might be that creativity itself was ambiguous and complicated (Lin, 2011). Additionally, few studies on creativity in early childhood had been conducted (Isbell & Rainess, 2013), which in turn made it difficult for teachers to master and formulate comprehensive, clear, in-depth, and practical definitions of creativity in young children (Bolden et al., 2010; Fleith, 2000). In fact, teachers’ definitions of creativity centered only on their acknowledgement of creativity as



a natural ability in children, evidence of children's self-expression, and creative symbolization in play. These findings were consistent with previous studies indicating that creativity was naturally inherent in individuals and their behaviors (Livingston, 2010; Simmons & Thompson, 2008).

Item three described characteristics of creative children and contained four sub-items: "self-confidence," "open-mindedness," "adventurousness," and "persistence," which aligned with findings of previous studies on creative children (Amabile, 1996; Diakidoy & Kanari, 1999; Isbell & Raines, 2013). Nonetheless, during the first interview session teachers expressed difficulties or failed to answer the question, "Are there any characteristics or abilities that you consider necessary for a child who is considered creative?" One teacher asked the researcher to provide some hints, while another teacher said she lacked the "terminology" to describe it. After the first interview, the researcher reflected on the situation and proposed two reasons:

1. teachers faced difficulties in recognizing children's creative behaviors and creative abilities in the classroom (Konstantinidou, Michalopoulou, Agelousis, & Kourtesis, 2013; Runco & Johnson, 2002), and
2. the interview question was problematic or unclear.

The researcher recalled that two teachers repeated the word "characteristics" while answering the question, and thus she considered that "characteristics" might be an obscure word or too vague for teachers to describe. Previous studies suggested that characteristics of creative students included initiative, curiosity, artistic, rich language and vocabulary, humor, enthusiasm, originality, and risk taking (Aljughaiman & Mower-Reynolds, 2005; Fleith, 2000). Moreover, teachers considered that manifestations and

expressions of creativity were largely affected by the personalities or personal traits of individuals (Diakidoy & Kanari, 1999; Konstantinidou et al., 2013; Lam, 2004).

Therefore, the researcher changed the wording and asked the question again during the second interview: “What kinds of personalities, qualities, or traits do you consider a creative kid should have?” By asking this revised question, informative and reportable data were generated from participants. Reflecting on this experience, the researcher considered that future studies could provide teachers with a list of various words to describe creative children, and then request teachers to select their favorable words and provide reasoning for their choices.

Item four, the factors of creative-supportive classroom environments, revealed four sub-items: “adequate physical space,” “a variety of classroom supplies,” “multi-themed learning centers,” and “secure and welcoming.” The literature indicated that classrooms with rich materials provided children with opportunities and possibilities to explore and enabled teachers to design more appropriate developmental level practices for children. Such rich classrooms were brain-friendly and favored creativity (Eason et al., 2009; Hendrick & Weissman, 2009; Rushton et al., 2010). Of note, all participants mentioned “secure and welcoming” as comprising the classroom environment. The reason for this could be the student population to whom teachers served. This finding was supported by Maslow’s (1970) motivation theory, which described how children’s creativity thinking could be achieved when their basic needs were satisfied.

**Research question two discussion.** What instructional strategies do pre-K teachers use and consider effective to facilitate creative capabilities in the classroom?

All participants described various strategies for creativity facilitation in daily classroom teaching, which were consistent with findings of previous studies. For example all teachers mentioned, “allow children to explore and think freely,” and they described that children should not be limited to one paradigm but encouraged to view problems from different perspectives and to approach the same task in different manners. These statements were supported by previous studies indicating that freedom in classrooms allowed children to follow their interests, meet their needs, and to develop their creative thinking (Cremin et al., 2006; Dababneh et al., 2010; Fleith, 2000).

Rich materials, especially self-expressive materials could encourage children’s creative thinking (Hendrick & Weissman, 2009). Similarly, Nina and Sophia noted that when students were provided with different choices and options in sources and materials for play, their creative thinking was more likely to be promoted. Heather and Sophia also emphasized the use of free play, which corresponded with findings of previous studies showing that play contributed to children’s creativity development because it was child-directed (Hendrick & Weissman, 2009; Reilly et al., 2011; Van Hoorn et al., 2011).

Additionally, all participants mentioned “valuing more on the thinking process.” This strategy had been demonstrated to be practical and useful, especially with younger children who exhibited more creativity during activity processes than in the final product (Baldwin, 2010; Craft, 2000; Isbell & Raines, 2013; Torrance, 1965). Vygotsky (1978) suggested the use of “scaffolding” as a method to improve children’s creativity. He considered that this strategy was one of the most important principles in early childhood education. All three teachers acknowledged the importance of scaffolding for heightening

children's motivation, increasing children's knowledge, and stimulating children's development potential.

In addition to scaffolding, the strategy of "motivation" was mentioned by three participants and recommended by previous researchers for stimulating children's thinking while piquing their curiosity to explore the outside world (Diakidoy & Kanari, 1999; Springate, 1995; Sternberg & Lubart, 1991; Van Hoorn et al., 2011). All participants considered that motivation could be used to encourage children's persistence during the process of problem solving and to stimulate their curiosity in exploring new things. It was noticeable that motivation coincided with teachers' descriptions of creative children, as they required self-motivation and persistence.

Nina and Sophia also shared their experiences of allowing children to use "role models as a medium of symbolization." This strategy was consistent with previous research that showed the importance of using play to foster children's creativity and the existence of children's natural use of symbolization (Craft, 2001; Glaveanu, 2011; Hendrick & Weissman, 2009; Smith, 1996). Thus, symbolization could be considered a critical characteristic of creative thinking.

The results for research question two also supported the previous studies that instructional strategies could be influenced by teachers' personalities, teaching philosophies, and student classroom demographics (Aljughaiman & Mowrer-Reynolds, 2005; Eason et al., 2009; Kohl, 2015). Nina considered that creativity was found within all children and defined it as "whatever children are building, expressing, or drawing." Thus, her classroom placed value on children's interests and needs, which she felt was an effective way to foster creativity in children. She tried to approach the idea of whole child

development in her teaching, but at the same time she could not separately and clearly discuss creativity as a certain domain within that development. This may be due to creativity's complicated definitions, for which Nina had not yet developed a clear construct.

Sophia frequently suggested that creativity should be built upon children's previous knowledge (Cropley, 1999; Hendrick, 1986; Feldhusen, 2002). In her words, knowledge was the basis for creative thinking, and therefore the teaching of content knowledge was important. Her views should be considered in the context of her own cultural background and the primarily Asian background of her students. These students' parents likely had high expectations that their children would gain substantial knowledge for future schooling. However, Sophia should be cautious about the boundary limit, i.e., how much knowledge or information should be given to students to foster their creativity. This was problematic because previous studies indicated that too much knowledge acquisition could stifle children's creativity (Craft, 2004; Nickerson, 1999).

Heather's strategies were determined by the group of children she worked with who were in a state of transition. To counter this obstacle, Heather built children's self-confidence and self-esteem and taught children that it was acceptable to be different.

In summary, all teachers offered useful strategies for creativity development. These teaching strategies were consistent with their descriptions of creativity-friendly environments in research question one. However, participants seldom interpreted the rationales behind the strategies used for children's creativity development. In other words, teachers might still face challenges to build connections between teaching strategies and creativity facilitation. Further studies could ask teachers to elaborate on

their strategic reasoning, which might help to better position teachable moments and indicate appropriate timing for creativity fostering.

**Research question three discussion.** What difficulties do pre-K teachers face in attempting to foster creativity in the classroom?

Previous studies indicated that early childhood teachers encountered difficulties and challenges when teaching to support children's creativity development (Bolden et al., 2010; Byron, 2007; Craft, 2001; Fletith, 2000). Many studies mentioned that the pressure of high-stakes exams focused teachers' attention on test score improvement (Fleith, 2000; Stoycheva, 1996; Torrance, 1962), which in turn could drain teachers of motivation and energy to intentionally prepare activities to foster children's creativity. However, the researcher noted that no participants mentioned exam pressure or study of content knowledge as affecting their teaching for creativity. The researcher was interested in this finding and suspected that administrators and parents in these centers had not yet indicated strong desires for improvement of children's test scores at the pre-K level. Instead, teachers expressed difficulties with "individualized instruction," "lacking the capacity to facilitate creativity," and "time constraints." Previous studies corresponded with these findings, which indicated that classroom environments, teachers themselves, and constraints of time and space accounted for inconsistencies between teachers' perceptions of creativity and their actual teaching practices (Byron, 2007; Cheung, 2012; Newton & Newton, 2010).

Under the sub-items "individualized instruction," Nina found different cultures and languages in her classroom. She specified that language barriers caused her difficulties in capturing students' focus and attention. Because of increases in racial

diversity and cultural backgrounds in classrooms, teachers faced difficulties in meeting children's needs. Further, creativity's ambiguous definition meant that its meaning for individual cultures was unclear and its application in multi-cultural classrooms was highly challenging for pre-K teachers (Baer, 2003). Many cross-cultural research studies indicated that people's creativity was influenced by culture, i.e., people of different cultural backgrounds assigned different definitions, values, and approaches to creativity (Huntsinger, Jose, Krieg, & Luo, 2011; Lee & Kim, 2005). For example, Western cultures might consider individuals' personal interests and abilities to create new products as demonstrations of creativity. On the other hand, Eastern cultures might value creativity more for its products and outcomes because these cultures were deeply influenced by Confucianism and highly valued collectivism, welfare of the group, social conformity, and harmony (Lee & Kim, 2005; Reilly et al., 2011). Further, Western people evaluated creativity's value by its humor and aesthetics, whereas Eastern people valued creativity for its contributions to society (Lee & Kim, 2005). Therefore a singular definition of creativity could not be generalized to all classrooms, especially for those with children of varied cultural heritages. There was a need for teachers to be highly sensitive to cultural differences (Bowman, 2011; Daugherty & White, 2008). One solution to this challenge could be an increased openness to different cultures and respect for their students' families and customs, which would allow teachers to communicate with children's parents and learn about students' beliefs. It might also be advantageous for teachers to incorporate more factors related to students' cultures into curricular design. These accommodations would create a welcoming environment and allow for improvement of students' English skills and facilitation of their cultural acclimatization.

Sophia described her own solutions for adjusting to students with different developmental paces and needs. She suggested that teachers should manage class time to satisfy the majority of children's needs and interests. Those students who had difficulties in engaging in classroom activities should be encouraged and worked with individually. Reilly et al. (2011) agreed with Sophia's approach: good teachers should be creative in curriculum design and activity arrangements to meet children's developmental needs.

Heather worked with students in a state of transition. She emphasized the importance of designing activities and conducting interventions to support and build self-confidence in children who were traumatized or transitory. Overall, teachers need to provide comprehensive understanding to their students. Classrooms with low student-teacher ratio might be optimal for fostering creativity because each teacher could satisfy the needs of every child under close supervision and guidance. Alternatively, two teachers in the same classroom could divide their tasks and group students separately based on students' interests and needs.

The second sub-item concerned "lacking the capacity to facilitate creativity." Findings implied that teachers could not design specific activities for creativity, frequently integrate creativity into lesson plans, or intentionally consider creativity to be a learning objective. The researcher considered that the major problem causing this phenomenon was the lack of a practical and clear definition of creativity (Craft, 2001; Wilson, 2005). This lacuna might exist because the definition of creativity was ambiguous and attempts to define creativity in young children remained controversial (Isbell & Rainess, 2013; Lin, 2011). Such problems might have the potential to diminish teachers' motivations to include creativity in their teaching. To clarify creativity's



meanings, teachers could be equipped with general ideas of what types of creativity might be needed in the future. Teachers could also be given assistance in combining students' capabilities and developmental stages to develop a more practical definition of creativity for students in their own classrooms. Such considerations could be further integrated into students' learning objectives, expectations from schools, and expectations from parents. Of note, the two teachers who defined themselves as structured and uncreative considered that these characteristics caused their limited teaching ideas and practices for developing creativity in the classroom. Bramwell et al.'s (2011) study suggested a relationship between teaching for creativity and creative teaching, yet little research examined how to improve creativity in teachers themselves. This gap could be a topic of investigation in future studies.

The third sub-item was "time constraints." For this issue, support from school administrators and the UWBB was necessary to provide background materials, new research findings, and successful teaching examples. Teachers could also establish learning groups to brainstorm and design lesson plans centered on creativity. Sharing useful ideas, developing effective strategies, and collaborating between colleagues and schools may also significantly reduce teachers' preparation time for creativity activities.

### **Conclusions**

The findings of the study suggested that pre-K teachers possessed a basic understanding of creativity in young children. Although creativity was known to these teachers, their comprehension was neither adequate nor clear. Although some teachers employed strategies for children's creativity facilitation, they were unaware of the methodologies and struggled to describe the rationale behind the usage of such strategies.

This type of disconnect indicated that teachers still had problems in connecting definitions of creativity with teaching methodologies. These situations may be caused by the complicated definitions of creativity and the ambiguous aims of teaching for creativity. Additionally, this study found that while teachers understood and valued the importance of creativity, they lacked specific teaching ideas, pedagogical sources, capabilities, and support for children's creativity in the classroom. Teachers faced various internal and external obstacles that made them unable to intentionally, proficiently, or frequently integrate creativity into lesson plans.

Therefore, this study provided teacher educators and professional trainers such as UWBB with information regarding pre-K teachers' current statuses, concerns, and difficulties in teaching for creativity. Further, the study suggested to teacher educators and professional trainers of a need to incorporate more specific lessons and targeted topic trainings on creativity, to introduce teachers to new research findings and successful examples of teaching for creativity, to help teachers build connections between concepts and classroom practices, and to recognize students' creative potential through their behaviors and performance. If these specific trainings were put into practice, they would assist teachers in translating knowledge and ideas into action and positively impact children's creativity.

### **Limitations**

The observation time with each teacher was relatively short when considering frequency and time span. Only three hours of observations were conducted with each participant over one to two weeks. Longer interview time spans as well as more frequent periods of observations could lead to richer data and increase researcher familiarity with

both participants and their working environments. Such increased interactions could lead to more in-depth and comprehensive interpretations and articulations of the underlying meanings of participant responses.

Additionally, the small sampling size of this study limits the generalization of the findings to a larger population. Meanwhile, the findings were from pre-K teachers at childcare centers, which might not apply to teachers working with other age groups of children at different school settings.

### **Future Studies**

Future studies could recruit pre-K teachers working with students from diverse educational, cultural, and socioeconomic backgrounds. Interviewing a more diverse subject pool would allow creativity findings to be applied to larger populations and increase generalizability of the study. It is suggested that the researcher followed up with post-interview observations with the same participants to further investigate the gap between teachers' beliefs of creativity in young children and their actual teaching practices, and to pinpoint their difficulties.

Piirto (2004) indicated that children's creativity development was affected by multiple external environmental factors such as home, school, and community. Previous studies suggested that school administrators' influence on teachers might affect indirectly student learning outcomes (Kirby & Paradise, 1992), yet the way in which administrators affect the development of creativity remains unknown. Thus future studies could include center directors to determine how their views and support could influence teacher practices, and whether this would have a positive or negative impact on children's creativity development. Similarly, future studies could examine parental effects and the

ways in which interactions between parents and teachers affected children's creativity development.

Diakidoy and Kanari (1999) indicated that teachers' positive beliefs of creativity were the basis for creativity facilitation in students. Teachers' professional training equipped them with knowledge and strategies to successfully identify children's creative behaviors and to implement effective approaches in the classroom. Because professional training is important to improve teachers' methods of teaching creativity, future researchers could evaluate these training courses to examine their effectiveness. Researchers could also examine the ways in which these training modules affect teachers' actual teaching practices. Studies such as these could promote highly effective professional trainings as a way to better serve teachers, which in turn could benefit the development of creativity in students.

Finally, the current study was conducted using a qualitative method. It was shown that quantitative methodologies possessed advantages when comparing certain categories and when establishing causal relationships among data. Thus, the combination of qualitative and quantitative methodologies in future studies aimed at evaluating teachers' views of creativity in young children could be advantageous. Nonetheless, the study established that a more standardized and valid instrument for use in quantifying children's creativity would be of great benefit to the field of early childhood education.

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**Appendix A**  
**Interview Questions**

### Interview Questions for Nina

I met with many pre-K teachers and they had different requirements and wishes to their students, which inspired me and touched me a lot. I would like to know yours. Do you mind briefly (2-3 sentences) to describe your teaching goal and teaching philosophy?

#### **Topic domain: Defining and Valuing Creativity in Children**

*Covert Categories:* definition of creativity, characteristics of creative children and creative products, importance of creativity to an individual child and society

*Lead-off Question:*

Thanks again for allowing me to observe your classes. I was very impressed with different activities you designed for the students based on the story of “the three little pigs”. I am interested to know when you plan these activities for them, have you ever valued their creativity?

*Follow-up Questions:*

1. I would like to know as a prekindergarten teacher, how do you define creativity in children?
2. (Depends on the answer of Q1) If I am asking you to use at least three words to describe children’s creativity, what are they?
3. Are there any characteristics or abilities that you consider necessary for a child who is considered as creative?
4. How do you identify children’s creative behaviors? Please give me one or two examples of children who are creative in your classroom.
5. Could you show me any of your children’s work that you consider as creative? Why do you define this work (or this child) as creative?
6. Is creativity something that children are born with or something that can be taught in the classroom?
7. Why do you feel creativity is necessary to be fostered in pre-K classroom, especially considering children’s future in the 21<sup>st</sup> century?

#### **Topic domain: Instructional Strategies**

*Covert Categories:* classroom environment, themes, activities, materials/supplies, teaching styles (praise, feedback) and contents

*Lead-off Question:*

I know that you have been teaching pre-K for years. Do you have an image of a pre-K classroom in your mind that you are trying to approach? What would it look like?

*Follow-up Questions:*

1. What are the factors of classroom environment that you consider important to enhance children's creativity? Why do you think that?
2. Could you list as many as strategies or activities that you have been used to foster children's creativity? Did they work out? Please give me some examples.
3. What other strategies that may be also useful for facilitating children's creativity, but due to some reasons you haven't got chance to practice with? (Or do you intend to use any strategies in your teaching to facilitate children's creativity?)
4. What good strategies would you suggest other teachers to try, especially novice teachers, who want to increase children's creativity in their classroom?

**Topic domain: challenges**

*Covert Categories:* standardized testing, time limit, the amount of students in the classroom, policies, expectation of parents, and opportunities for professional development

*Lead-off Question:*

As you mentioned, in your idea of a classroom, where children's creativity can flourish, what do you need to get there? What caused the gap? Or what are the barriers that hinder your practices of improving children's creativity?

(Based on the answer of the question above) I heard that some teachers talked about their problems of trying to balance between academic emphases, for example making students to be ready in knowledge for kindergarten and elementary and facilitating children's creativity. Parents want more content knowledge to be taught in the classroom. Have you faced the same challenges or problems?

*Follow-up Questions:*

1. Have you considered the relationship between academic approach and children's creativity facilitation? How do you balance between them?
2. Has creativity been valued and supported at your center? What additional support you would like to receive from your director and colleagues to bring positive impact on your practices?
3. I understand that you've received trainings from UWBB, how were they?

### Interview Questions for Sophia

I met with many pre-K teachers and they had different requirements and wishes to their students, which inspired me and touched me a lot. I would like to know yours. Do you mind briefly (2-3 sentences) to describe your teaching goal and teaching philosophy?

#### **Topic domain: Defining and Valuing Creativity in Children**

*Covert Categories:* definition of creativity, characteristics of creative children and creative products, importance of creativity to an individual child and society

*Lead-off Question:*

Thanks again for allowing me to observe your classes. I was very impressed with the theme “the pyramid of food” you designed for the students to build them a good sense of nutrition and health. I also saw their physical, emotional and literacy skills were improved through this topic. I am interested to know when you plan activities for the students, have you ever valued their creativity?

*Follow-up Questions:*

1. I would like to know as a prekindergarten teacher, how do you define creativity in children?
2. (Depends on the answer of Q1) If I am asking you to use at least three words to describe children’s creativity, what are they?
3. Are there any characteristics or abilities that you consider necessary for a child who is considered as creative?
4. How do you identify children’s creative behaviors? Please give me one or two examples of children who are creative in your classroom.
5. Could you show me any of your children’s work that you consider as creative? Why do you define this work (or this child) as creative?
6. Is creativity something that children are born with or something that can be taught in the classroom?
7. Why do you feel creativity is necessary to be fostered in pre-K classroom, especially considering children’s future in the 21<sup>st</sup> century?

#### **Topic domain: Instructional Strategies**

*Covert Categories:* classroom environment, themes, activities, materials/supplies, teaching styles (praise, feedback) and contents



*Lead-off Question:*

I know that you have been teaching pre-K for years. Do you have an image of a pre-K classroom in your mind that you are trying to approach? What would it look like?

*Follow-up Questions:*

1. What are the factors of classroom environment that you consider important to enhance children's creativity? Why do you think that?
2. Could you list as many as strategies or activities that you have been used to foster children's creativity? Did they work out? Please give me some examples.
3. What other strategies that may be also useful for facilitating children's creativity, but due to some reasons you haven't got chance to practice with? (Or do you intend to use any strategies in your teaching to facilitate children's creativity?)
4. What good strategies would you suggest other teachers to try, especially novice teachers, who want to increase children's creativity in their classroom?

**Topic domain: challenges**

*Covert Categories:* standardized testing, time limit, the amount of students in the classroom, policies, expectation of parents, and opportunities for professional development

*Lead-off Question:*

As you mentioned, in your idea of a classroom, where children's creativity can flourish, what do you need to get there? What caused the gap? Or what are the barriers that hinder your practices of improving children's creativity?

(Based on the answer of the question above) I heard that some teachers talked about their problems of trying to balance between academic emphases, for example making students to be ready in knowledge for kindergarten and elementary and facilitating children's creativity. Parents want more content knowledge to be taught in the classroom. Have you faced the same challenges or problems?

*Follow-up Questions:*

1. Have you considered the relationship between academic approach and children's creativity facilitation? How do you balance between them?
2. Has creativity been valued and supported at your center? What additional support you would like to receive from your director and colleagues to bring positive impact on your practices?

3. I understand that you've received trainings from UWBB, how were they?

### **Interview Questions for Heather**

I met with many pre-K teachers and they had different requirements and wishes to their students, which inspired me and touched me a lot. I would like to know yours. Do you mind briefly (2-3 sentences) to describe your teaching goal and teaching philosophy?

#### **Topic domain: Defining and Valuing Creativity in Children**

*Covert Categories:* definition of creativity, characteristics of creative children and creative products, importance of creativity to an individual child and society

*Lead-off Question:*

Thanks again for allowing me to observe your classes. All the materials and opportunities you provided to the students amazed me. I remembered that one day you did an activity named “painting with different materials”, and a girl used a potato masher in a circular way to paint. You praised her work was creative. Why you do that?

*Follow-up Questions:*

1. I would like to know as a prekindergarten teacher, how do you define creativity in children?
2. (Depends on the answer of Q1) If I am asking you to use at least three words to describe children’s creativity, what are they?
3. Are there any characteristics or abilities that you consider necessary for a child who is considered as creative?
4. How do you identify children’s creative behaviors? Please give me one or two examples of children who are creative in your classroom.
5. Could you show me any of your children’s work that you consider as creative? Why do you define this work (or this child) as creative?
6. Is creativity something that children are born with or something that can be taught in the classroom?
7. Why do you feel creativity is necessary to be fostered in pre-K classroom, especially considering children’s future in the 21<sup>st</sup> century?

#### **Topic domain: Instructional Strategies**

*Covert Categories:* classroom environment, themes, activities, materials/supplies, teaching styles (praise, feedback) and contents

*Lead-off Question:*

I know that you have been teaching pre-K for years. Do you have an image of a

pre-K classroom in your mind that you are trying to approach? What would it look like?

*Follow-up Questions:*

1. What are the factors of classroom environment that you consider important to enhance children's creativity? Why do you think that?
2. Could you list as many as strategies or activities that you have been used to foster children's creativity? Did they work out? Please give me some examples.
3. What other strategies that may be also useful for facilitating children's creativity, but due to some reasons you haven't got chance to practice with? (Or do you intend to use any strategies in your teaching to facilitate children's creativity?)
4. What good strategies would you suggest other teachers to try, especially novice teachers, who want to increase children's creativity in their classroom?

**Topic domain: challenges**

*Covert Categories:* standardized testing, time limit, the amount of students in the classroom, policies, expectation of parents, and opportunities for professional development

*Lead-off Question:*

As you mentioned, in your idea of a classroom, where children's creativity can flourish, what do you need to get there? What caused the gap? Or what are the barriers that hinder your practices of improving children's creativity?

(Based on the answer of the question above) I heard that some teachers talked about their problems of trying to balance between academic emphases, for example making students to be ready in knowledge for kindergarten and elementary and facilitating children's creativity. Parents want more content knowledge to be taught in the classroom. Have you faced the same challenges or problems?

*Follow-up Questions:*

1. Have you considered the relationship between academic approach and children's creativity facilitation? How do you balance between them?
2. Has creativity been valued and supported at your center? What additional support you would like to receive from your director and colleagues to bring positive impact on your practices?
3. I understand that you've received trainings from UWBB, how were they?

**Appendix B**  
**Demographic Information**

**Demographic Information**

1. How long have you been a prekindergarten teacher?
2. How long have you been teaching in this childcare center?
3. How many students do you have in your classroom?
4. Do you have other teaching experience other than teaching prekindergarten?
5. What is the highest degree you hold or working on currently?
6. How many times have you received professional training from the United Way Bright Beginnings? How often do you attend their training?
7. Have you ever received training that is relevant to the subject of children's creativity?

**Appendix C**

**Division of Research Approval**

UNIVERSITY of HOUSTON  
DIVISION OF RESEARCH

February 11, 2016

Qian Huang  
c/o Dr. Nichole Andrews  
Curriculum and Instruction

Dear Qian Huang,

The University of Houston's Institutional Review Board, Committee for the Protection of Human Subjects (1) reviewed your research proposal entitled "Prekindergarten teachers' perspectives, strategies and difficulties with fostering children's creativity" on December 11, 2015, according to federal regulations and institutional policies and procedures.

At that time, your project was granted approval contingent upon your agreement to modify your protocol as stipulated by the Committee. The changes you have made adequately fulfill the requested contingencies, and your project is now **APPROVED**.

- **Approval Date: February 11, 2016**
- **Expiration Date: February 10, 2017**

As required by federal regulations governing research in human subjects, research procedures (including recruitment, informed consent, intervention, data collection or data analysis) may not be conducted after the expiration date.

To ensure that no lapse in approval or ongoing research occurs, please ensure that your protocol is resubmitted in RAMP for renewal by the **deadline for the January, 2017** CPHS meeting. Deadlines for submission are located on the CPHS website.

During the course of the research, the following must also be submitted to the CPHS:

- Any proposed changes to the approved protocol, prior to initiation; AND
- Any unanticipated events (including adverse events, injuries, or outcomes) involving possible risk to subjects or others, within 10 working days.

If you have any questions, please contact Samoya Copeland at (713) 743-9534.

Sincerely yours,



Dr. Lorraine Reitzel, Chair  
Committee for the Protection of Human Subjects (1)

PLEASE NOTE: All subjects must receive a copy of the informed consent document, if one is approved for use. All research data, including signed consent documents, must be retained according to the University of Houston Data Retention Policy (found on the CPHS website) as well as requirements of the FDA and external sponsor(s), if applicable. Faculty sponsors are responsible for retaining data for student projects on the UH campus for the required period of record retention.

Protocol Number: 16185-01

Full Review:

Expedited Review:

316 E. Cullen Building Houston, TX 77204-2015 (713) 743-9204 Fax: (713) 743-9577

COMMITTEES FOR THE PROTECTION OF HUMAN SUBJECTS.