

Developing Creativity in Young Children by Implementation of Open Ended Activities in the USA and in China

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Abstract: This qualitative case study aims to analyze whether there are differences in creativity in preschool children growing up in China and in the U.S. by exploring how children used symbols in the creation of artwork. The context of this research includes early childhood education in China and America, theories of childhood development and creativity, and the development of symbolic thinking in young children. The instruments for collecting data included classroom observations, open-ended interviews and the children's artwork. The research findings offer important information about cross-cultural investigations into creativity. First, the study found that children's artwork demonstrates varied and unique expression patterns and can be interpreted in connection with children's thoughts. Second, the study indicated that environment has a significant influence on how children produce art. As a result of the findings, the research suggests that in order to better promote creativity and imagination in children, teachers and parents should give them more opportunities to observe the outside world. Moreover, through a comparison of American and Chinese teaching strategies in connection with art, it can be concluded that educators should balance children's natural talents and instincts with professional guidance and instruction.

Keywords: Creativity; Preschool; Cross-cultural

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1 The Problem Defined

1.1 Background Statement

“Creativity, imagination, and the ability to engage as individuals” are necessary skills in the social competition that has become increasingly fierce in the 21st century (Cho, Pemberton, & Ray, 2017, p.1). Many scholars encourage the cultivation of creativity early in childhood, and 3 to 5 years old is an essential period of creativity development. Therefore, the development of creativity has received a lot of attention. However, research into the development of creativity across cultures is scanty. With an increase of frequent economic and political exchanges and cross-cultural communication between China and the United States, recognizing and understanding the different cultural backgrounds and exploring the cultural differences is crucial. It is significant for enhancing mutual understanding between the two countries and promoting the development of bilateral relations (Chang, 2008). There are many differences in early childhood education between China and the United States, and these differences are reflected in many different aspects, such as educational concepts, educational methods, educational purposes, and family environment. This research project aims to conduct a cross-cultural study in the USA and China to investigate children's creativity by conducting an open-ended activity to explore if there are any differences in symbolic representation between these two countries.

1.2 Why Develop Creativity in Preschool?

When people mention creativity, they might first associate creativity with its important impact on

science and technology. However, creativity is also significant for all of the disciplines; it is necessary to discover, develop, and encourage people's potential creativity (Sternberg, 2006). Everyone has their own type of creativity. This also applies to children as unique individuals; it is an integral part of their education to encourage and cultivate their creativity.

Findings from a recent American research study shows that promoting creative thinking in young children is beneficial for children's success in the future (Aminolroaya et al., 2016). Additionally, scholars indicated that fostering creativity from early childhood will have many benefits that extend for the span of their whole life (Lowenfeld & Brittan, 1987; Mirgheydari, 2001). Moreover, according to Benlliure (2013), training creativity can help children understand the world and build relationships between its components and increase children's flexibility, imagination, and skills of formulating issues (as cited in Aminolroaya et al., 2016). According to Kohl (2008), "Creativity is as natural and necessary for children as fresh air and sunshine" (p. 1). Hence, developing creativity from preschool age was accepted by most American scholars.

In the same way, studies in China have shown that children demonstrate creativity at an early age, manifested in the children's movement, language, perception, imagination, thinking and personality characteristics (Youparent, 2016). Children's curiosity and imagination are the two most important manifestations of their creativity formation and development (Kohl, 2008). Moreover, creativity is not only beneficial to social progress, but also has many benefits for children's personality development (Youparent, 2016). Therefore, researchers in both countries of United States and China have found that developing creativity in young children is significant.

1.3 Why Conduct a Cross Cultural Investigation in China and the USA?

Cross-cultural investigation is an approach to exchange experiences, to learn from each other, and achieve common progress. It is important to promote and understand the learning and research of each country. There are many differences between Chinese and American cultural beliefs.

The United States early history was influenced by the British, and its culture belongs to the category of European culture (Yang & Zhou, 2003). Therefore,

the United States preschool is also influence by European schooling. Throughout Western history, the influence of ancient Athens is far reaching (Yang & Zhou, 2003). Correspondingly, the Athens government respected the freedom of its citizens and embodied in its educational models the idea that the cultivation of virtuous citizens and the free development of personality were related to the cultivation of morality. Europe's equality and democracy pay attention to the individual's educational ideas from this origin (Liu, 2001). Similarly, parents in the United States support a child's personality by giving them more choices, while encouraging independence and individualism (Gardner, 1989; Huntsinger, Jose, Krieg, & Luo., 2011).

Unlike the United States, China has a different cultural background. Chan (1963) argued that Chinese education is heavily influenced by Confucianism, which focuses on a respect for elders and a devotion to family (as cited in Huntsinger et al., 2011). Chinese parents in a family "should utilize their authority to dictate matters, to maintain order, and to inspire respect, so that members of a family will be obedient" (Ebrey, 1991, p. 318). Following their parents' expectations, Chinese children often choose following their parents' thoughts.

1.4 The Research Problem

This research aims to analyze if there are differences in creativity in preschool children growing up in China and in the U.S. by analyzing the symbolic representation created by children from each country.

The current research shows preschool is the golden age of development of children's creativity. Promoting creative thinking is positive for successful outcomes and can extend to the whole of life (Aminolroaya et al., 2016). Moreover, scholars think that children embody human creativity (Glaveanu, 2011). From this, fostering creativity from the preschool age is very necessary.

Research showed that Chinese and Americans view creativity differently. Confucianism heavily influences Chinese education. On the other hand, parents in the United States encouraging children independence and individualism (Gardner, 1989; Huntsinger et al., 2011). However, according to Ho (1994), "There have been just a few cross- cultural investigations into creativity" (as cited in Huntsinger et al, 2011, p. 135). There needs to be more investigations that are

cross-cultural between the United States and China.

Therefore, in this study, children's creativity and imagination will be investigated by analyzing the results of creating a torn paper collage. Moreover, the analysis of the results from the participants in this study will provide important information about cross-cultural investigations into creativity. By comparing different educational philosophies, early childhood educators can recognize the difference between Chinese and American childhood education, thereby learning and improving the educational methods.

1.5 Definition of Terms

1.5.1 Preschool in America and China

Preschool in America is about school for children between three and four years old. On the other hand, in China, people switch the terms of preschool with kindergarten, and kindergarten is divided into three parts: children from three to four are called "small class," children from four to five are called "middle class," and children from five to six are called "big class." But in order to facilitate understanding, this study uses the single expression "preschool."

1.5.2 Project Zero (PZ)

According to the Harvard Graduate School of Education, "Project of Zero was founded by the philosopher Nelson Goodman at the Harvard University of Graduate School in 1967 to study and improve art education" (2016, p.1). Goodman argues that arts learning should be considered as a serious cognitive activity, but "zero" has not yet been established in this area, so the project is named Zero (Harvard, 2016). Today, Project Zero has expanded its research projects to include "investigations into the nature of intelligence, understanding, thinking, creativity, cross-disciplinary and cross-cultural thinking" (What is PZ, 2016, p.3).

1.5.3 Symbolic Representation

In children, symbolic representation is the ability to use one object to represent another. According to Vygotsky (1967), and Werner and Kaplan (1963), "Children acquire skills that allow them to separate the meaning of an object from the object itself and to give identities to objects other than their actual ones" (as cited in Boytzis & Watson, 1993, p 729). However, Chinese scholars believed that children's symbolic representation signify their paintings cannot

present objective images and their features as reality, and their painting only to retain the basic shapes of objects (Wang Fan, 2011,). For example, children usually use simple and abstract lines to depict objects, and when they draw people, they pull away the human characteristics, such as gender, age, and appearance, and only the main characteristics remain. "Their paintings are even close to the form of simple symbols, which reflects children's generalization of the objects depicted" (Wang Fan, 2011, p. 49).

1.5.4 Collage

The word "collage" comes from the French, and collage in this study is art that combines things together with glue (Cowling, 2012). In the process of making collage, the child needs to master the ripping, cutting and gluing skills (Cowling, 2012). For preschool children, this enables them to develop hand-brain coordination.

1.6 Research Questions

This qualitative study based on an analysis of children's symbolic representation in this research project the artwork, the investigator will attempt to answer the following research questions:

- (1) Are there differences between the Chinese and American educational approaches?
- (2) Are there any differences in the symbolic representation and mental relationships of the different countries' children's artwork?
- (3) Will different countries' cultural differences affect the children's creativity?

1.7 Limitations of Study

The researcher is an international graduate student who is influenced by different cultural backgrounds and this may be perceived as a limitation of this study. The researcher is also a volunteer working in one of the preschools in this study; the children are familiar with the researcher. So, in the course of the observation, the investigator could be biased toward one group in this study.

An additional limitation may result from the limited number of participants of children from each country. The preschool chosen by the researcher for the project has only 14 children. A further limitation of this study may result from the preschool location chosen; different cities have different cultural differences, and this study has a certain geographical location.

2 Literature Review

2.1 Introduction

With the arrival of a new century, cultivating creativity is the general trend of social development. In the book *Out of Mind Learning to be Creative*, Robinson (2001), argued that creativity is as important as literacy, and should be treated equally. If we want children to thrive, we should allow them to pursue their passion (Robinson, 2001). Every child has a great potential for creativity, which should not be wasted. Nobel Prize Winner in Physics, Tsung-Dao Lee, who is originally from China, proposed that the most important part of education is cultivating creativity (as cited in Xi, 2016). Additionally, the development of children's creativity occurs while interacting with the environment, so different cultural backgrounds may affect the development of children's creativity. In this chapter, the researcher will discuss early childhood education in the USA and China for preschool children, childhood development and creativity in preschool age children, and development of symbolic art in young children.

2.2 Early Childhood Education in the USA and China for Preschool Children

Martin Rein suggested that policy is the "curious admixture of psychological assumptions, scientific concepts, value commitments, social aspirations, personal interests, and administrative constraint" (as cited in Takanishi, 1976, p.12). The formation of early childhood education policies proved very useful in preschool period, and some conceptions are still significant for recent early childhood education.

During the 20th century, the American federal government was involved in three early education programs: The Works Progress Administration (WPA) nursery schools (1933-1943), the Lanham Act Child Care Centers (1943-1946), and the Compensatory Early Education Programs or Head Start (1965-present). These programs included economic support, child development, parents' education programs and cooperation with public schools (Takanishi, 1976). The goals of each federally supported programs is explained in the follows section (Takanishi, 1976, p.13):

(1) The purpose of the WPA program was to offer work opportunities to individuals during the Depression; supply health services and nutrition,

physical, social, and mental development for children; provide education programs for parents; and increase the opportunities of public schools to realize the value of nursery schools to adopt into the public system. (Takanishi, 1976, p.13)

(2) Lanham Act Child Care Centers offered childcare to mothers who were employed in war industries during WWII, direct contribution to child's life and the prevention from physical and emotional wreckage, and parent education to ensure mothers had the ability to work, as well as opportunities for public schools into the system. (Takanishi, 1976, p.13)

(3) Head Start programs improve children's physical health and abilities, accelerate children's emotional and social development, and strengthen the family's ability to solve children's problem positively so as to prepare for children's public school experience. (Takanishi, 1976, p.14)

From above, the main goals of America's children's programs is to cultivate a 'whole child,' which means to "improve a child's intellectual, social, and emotional development; it is to socialize one child so as to make him or her become a productive and contributing member of the society; to make preparations for a child's compulsory level schooling; and it is to provide children for comprehensive development services" (Takanishi, 1976, p. 18).

Currently, according to the U.S. Department of Education (2014), the Obama administration encouraged the appropriate teaching content, which is suitable for child development, improving the funding of preschool programs, and ensuring children's education and emotional development. The No Child Left Behind Act provided grants for preschool programs and supported low-income families with children entering school. The programs also provide language, reading and literacy activities for children. In Even Start supports project, it improved the educational opportunity for the low-income family's children and parents by early childhood education, adult education and family interactive education (U.S. Department of Education, 2014).

In China, from 1904 to 1949, during the late Qing Dynasty, due to the invasion of Western countries, Western concepts also entered China. Early childhood education appeared in the late Qing Dynasty and then was influenced by Western culture. The Policy Zhang Cheng (an Chinese policy for young children's school) stated that, according to the kindergarten

mode of Western countries, China should set up a Mengyang courtyard (the schools' name for young children), which recruited children from 3 to 7 years old and allowed women students with education majors to take care of and educate the children (Peng, Wang, & Yao, 2010).

From 1912 to 1994, preschool education experts Heqin Chen, Xingzhi Tao and Xuemen Zhang began to explore methods suitable for the Chinese culture of early childhood education (Yuheng Zhou & Qinxi Fan, 2009). After the American educator John Dewey visited China, his philosophy of pragmatism was widely disseminated in China. This period of preschool education policy was deeply influenced by Dewey's "pragmatism," which advocated against separating different subjects, emphasizing the child as the center in the classroom, and teaching content that related to real life (Peng, Wang, & Yao, 2010).

After the Second World War, the Chinese government advocated a comprehensive study of the Soviet Union. This period of early childhood education policy imitates the education characteristics of the Soviet Union, promotes different subject education, pays attention to the well-rounded development of young children, and uses different age group's characteristics to divide different classes (Peng, Wang, & Yao, 2010).

From 1987 to now, China's early childhood education has focused on: children from birth to before they go to primary school; the teachers' teaching and training; preschool education; and children's parents education development (Peng, Wang, & Yao, 2010).

2.3 Childhood Development and Creativity in Preschool Age

Early childhood is the most rapid and critical period in the development of an individual's life. At this period, the child acquires knowledge and understands the learning construction. The knowledge learned during this period plays an important role in children's future life (Krosh & Slents, 2010). According to the educational psychologist Bloom (1964), demonstrated the first four years play an active role to promote cognitive development, and "50 percent of the variations in intelligence at age 17 can be estimated at age four" (as cited in New World Encyclopedia, 2016, p. 34). Therefore, it is important to promote studying children development at an

early age. Additionally, according to Piaget's theory of cognitive development, 4-years-old is the second stage of preoperational stage. The children of this stage do not understand specific logic, and can not mentally manipulate information (Loftus, 2009). At this age, children's language develops rapidly, they use their imagination to understand the world, they can control their muscles well, and they often have creative ideas (Dodge et al., 2002). Preschool age is also the golden stage for children's learning and their development of creativity (Aminolroaya et al., 2016). Torrance (1963) concluded "the most creative are four-year-old children, they are independent, curious, uninhibited, interested in learning new things, active participants, playful, and adventurous" (p. 3).

2.4 Theories of Creativity and Early Childhood

Psychologists have debated the definition of creativity. Different documents focus on different aspects; it is difficult to find a definition that can be accepted by everyone. Historically, different scholars have had different views of creativity. In an early definition of creativity, Wertheimer (1945) claimed that "when thinkers seize the core of a problem and their relationship with the final answer, this moment of creativity and epiphany arises" (Goodwin, 2012, p. 257). In 1950, J. P. Guilford gave a presidential address on the research into creativity to the American Psychological Association (Treffinger et al., 2002). Since then, many scholars have modified their definitions of creativity. Moreover, Guilford (1967a, 1967b) believed that creativity has to be original and visible to others; Torrance (1963) stated that creativity is being aware of things missing in the world; Henrick (1986) claimed that creativity is the construction of original thoughts, and solutions, influenced by previous experiences and knowledge. Robinson (2001) presented creativity as the production of unique things of value.

However, now psychologists have generally accepted definitions: creativity is the ability to produce innovative and practical (consistent with the constraints) ideas (Chen, & Zheng, 2015). Furthermore, historically, creativity has been an important part of early education that still exists today. Many well-known childhood educators have put forward educational theories related to creativity. Vygotsky (1962) studied children by observing the social context and interactions with others to explore

creativity; Chinese educator Heqing Chen (1940) believed that, children have a strong ability to create, and if educators give children the correct guidance and training, creativity can be cultivated; children's knowledge grows along with their experiences, which explores and modifies their thinking (Dodge et al., 2002); Robinson (2001) stated that all children have great talent in creativity; education must identify and develop natural ability.

2.5 Views of Children's Creativity in China and America

Many research findings demonstrate that different cultures have different opinions about young children's development of creativity. For example, research showed that Chinese and Americans' views on creativity are different. According to Gardner (1989), Chinese think creativity takes place after mastering the basic art skills; in contrast, Americans generally believe that creativity is innate. Because of this, Chinese parents let their children learn professional art skills, and some children were sent to art school to learn when they were young. Some American parents might think too much art instruction will destroy their children's creativity (Huntsinger et al, 2011). Moreover, many scholars claimed culture affects many aspects of children's artwork (e.g., Alland, 1983; Cox, 1993; Golomb, 2002; Wilson, 1985).

2.6 Providing Creativity Curriculum for Children

Currently, creativity curriculum is being used more and more in preschools, and much research validates its effectiveness (Smarty Pants, 2014). The creativity curriculum aims to conduct class in a suitable way for early childhood age characteristics, provide rich and varied content, and improve the skill levels of young children (Dodge & Berke, 2013). The safety and valued environment which were met children's physical needs is the foundation for children's development (Bredenkamp & Copple, 1997, pp.14-15). Moreover, when children are in a psychologically secure situation, they can be independent to be creative and take intellectual challenges (Maslow, 1943). Essentially, the creativity curriculum allows children to be capable, make independent decisions, and guide their learning, and meets the basic needs of children to help them learn and acquire skills (Dodge et al., 2002). Moreover, the creativity curriculum was established based on many theories, including Erik

Erikson's theory of the emotions and learning, Jean Piaget's theory of logical thinking and reasoning, Lev Vygotsky's theory of social interaction and learning, Howard Gardner's theory of Multiple intelligences, and Sara Smilansky's theory of play and learning (Smarty Pants, 2014). The creativity curriculum balances the teacher's direction and the child's independent learning relationship, in order to stimulate the child's interest in learning (Smarty Pants, 2014).

However, studies show in the traditional classroom formats often provide an unhappy atmosphere. For instance, the teacher is the instructor, while the children sit at their desks. The children have no choice but to wait for the teacher to tell them the instructions, such as what time they should start learning and the content that they can learn (Bottini & Grossman, 2005). To the contrary, children need opportunities to move and explore rather than be stuck in classroom rules and teacher frustration (Bottini & Grossman, 2005).

2.7 Development of Symbolic Art in Young Children

2.7.1 Developing creativity by art activities

Art activities give children opportunities to construct knowledge, to observe and to comment on other thoughts to appreciate diversity, and from observe other artwork and discuss what they see to foster imaginative and critical thinking (Shurenadmin, 2013). Through life observation and conversation, art activities will blend into children's daily life to cultivate children's minds by encouraging children's ability to create beauty (Shurenadmin, 2013). According to famous Chinese educator Mr. Chen Heqin's study, it is concluded that: None of the children do not like painting. Children's painting develops with their physical and mental development, and it is also inseparable to the development of children's feelings, perception, movements, language and thinking ability; moreover, life and education practices influence it. Children have the talent of using symbols to express emotions, and their paintings are always corresponding to their spiritual world (as cited in Wang, 2000, p. 49).

According to Mulcahey (2009), rich art activities connect to the large art world to introduce different types of artistic activities, which allow children to make several choices about what they can create and so provide a variety of outcomes to respect their

uniqueness.

Furthermore, preschool teachers play an important role in child development. When teachers create appropriate art activities, they can significantly encourage creativity for young children. The creative curriculum teacher's role is to help children observe, guide children's learning, and assess children's learning (Dodge et al., 2002). At the same time, teachers need to pay more attention to the learning process, rather than the results. In this process, teacher should allow children to make mistakes, so they can try different ideas and hear different views. Moreover, according to Aminolroaya et al. (2016), if educators want students to become creative, they should enrich the knowledge in this area, and create a classroom atmosphere for discussion.

2.7.2 The stage of artistic development

Mastering the knowledge of different stage about children's artistic development can help educator better understand the children's representation in their artwork, and create better art activities for children (Fussell, 2011). In 1947, Lowenfeld published "Creative and Mental Growth", which claimed an existence of six stages of artistic development. Scribble Stage (1-3 years old), Preschematic Stage (3-4 years old), Schematic Stage (5-6 years old), Dawning Realism (7-9 years old), Pseudo-Naturalistic Stage (10-13 years old), and Decision Stage (13-16 years old). In the Preschematic Stage, children connect to communication through their paintings, and form some simple lines and circles to represent the outside world (Fussell, 2011). Moreover, Mulcahey (2009) suggested at three to four years old, are transfixed by the colors and shapes of strange paintings clearly transfix children, and they have many ideas about what they want to say. Different culture backgrounds and education affect children; their artistic stages may also have little differences. In China, scholar Dagan Wang (2000) put forward different children's artistic development stages than Lowenfeld (1947), which include: Scribble Stage (1.5-3 years old); Symbol Stage (3-9 years old), divided into the symbol stages of word, sentence, and statement; Realism Stage (9-15 years old), divided into the realism stages of statement, differentiation and vision; and Rational Stage (15-18 years old). Chinese educators call the preschool age of artistic development the Symbol Stage, because

they use some symbols (circles, squares, triangles, etc.) to represent the characteristics of objects. For 4-year-old children, they can draw combined graphics and begin to express something consciously (Wang, 2000). In which the child say what they are going to draw before drawing, or draw while saying. The objects they express are scattered and pieced together, having no connection with each other. There is only the meaning of "words," so it is called "the symbol stage of words". However, at the stage of 5-7 years old, they can express more complex contents and give more details, so it is called the symbol stage of sentences (Wang, 2000).

2.7.3 Artistic symbolization in Project Zero

Harvard Graduate School's Project Zero aims to research and improve art education programs. As a result of research Project Zero by Gardner (1989) illustrated that they identified four forms of artistic symbolization: "the conveying of mood (expression); attention to the fine details or texture of an object (style); the arrangement of elements with attention to their effects on one another and on a work as a whole (composition); and the communication of multiple meanings (ambiguity or layers of significance)" (p. 99). This will provide a theoretical basis for the analysis of children's symbolic expression in this study.

Grotjahn (1971) claimed that the observation of the meaning and power of symbols can help people understand the relationship between a person and her or himself, and can also express life, death, history, and the future. Knowledge of symbolism is necessary for communication and to help to understand people's perceptions. Especially for children, a study shows that, at preschool age, their ability to recognize words is limited, but they can identify different images and shapes in their mind (Huang & Gao, 2013). Through this, symbols become a tool to express their ideas and emotions. By analyzing their artwork, children can convey a symbolic relationship, and we can know their thoughts and feelings from it.

Overall, according to Ho (1994) "there have been just a few cross-cultural investigations into creativity" (as cited in Huntsinger et al., 2011, p. 135). This research aims to analyze if there are differences in creativity in preschool children growing up in China and in the U.S. by analyzing the symbolic representation (a torn paper collage) created by

children from each country after hearing the story of Alexander and the Wind-Up Mouse by Leo Lionni (as suggested by Dodge et al., 2002).

2.8 Conclusions

There is evidence to show that developing creativity in preschool-age children is very necessary. The literature of this study is based on early childhood education in China and America for preschool children, theories of children development and creativity, and the development of symbolic thinking in young children. This study did not thoroughly discuss different countries parents' and teachers' perceptions about children's creativity. The researcher suggests future investigators can complete a quantitative data analysis based on a questionnaire focusing on parents' and teacher's attitudes about creativity development.

3 Methodology

3.1 Research Methodology

“A symbol is an idea or image or behavior that possesses a special connotation in addition to the conventional meaning. It can be conscious or unconscious, with a particular meaning for the person” (Nowak-Fabrykowski, 2005, p. 46). For this study, the idea of symbolic representation means using one object to represent another. For example, a child creates an object, maybe it looks like a triangle, but for this child, it represents a mouse. In this study, the researcher is attempting to investigate the symbolic representation of torn paper collages created by four-year-old children from China and the United States to analyze whether there are differences in creativity in preschool children growing up in China and the U.S. The research focuses on the following questions: Are there differences between the Chinese and American educational approaches? Are there any differences in the symbolic representation and mental relationships of the children's artwork from these different countries? Are there any differences in the expression of the creative activity of the four-year-old children due to gender differences? Do different cultural backgrounds affect the children's creativity and symbolic representation? The researcher used a qualitative approach in this study via “the collection, analysis, and interpretation of comprehensive narrative and visual data to gain the study results”

(Gay & Mill, 2016, p. 661). This included collecting data from observing classroom daily activities, conducting an open-ended activity with children in each country, and asking questions about their torn paper collage artwork.

3.2 Data Collection

3.2.1 Research Participants

In this research, the participants included 13 children (7 boys and 6 girls) from a preschool in Mount Pleasant, USA, and 14 children (8 boys and 6 girls) from a preschool in Anhui, China. The preschool in America is a free preschool which offers programs for 3 and 4-year-old children. There are students of Chinese, Saudi Arabian, and Greek origins, with those of a mixed heritage in the majority. The goals of the preschool are to let the children become learners with independent thinking, self-confidence, curiosity and responsibility for their own behavior, and to encourage children to observe, explore, paint and count. They have a creative curriculum intended to achieve these goals.

In contrast, the preschool in China is a public preschool built in 1984. The preschool is famous in Anhui Province for its experimental platform for children's science and technology activities. The preschool is divided into small, medium and large classes, and there are sixteen classes with more than 600 children total in the preschool. The preschool focuses on the educational goals of exercise and a strong physique, stimulating interest in learning, cultivating outgoing personalities, and developing good habits. The students have origins in China, and their native language is Chinese.

3.2.2 Research Procedure

In May 2017, a letter of permission was submitted to the preschool office in each country requesting permission to conduct the study which would involve the children creating a torn paper collage after hearing the story of Alexander and the Wind-Up Mouse. After receiving permission from each country's preschool, the researcher submitted an application to the Institutional Review Board (IRB) at Central Michigan University and got IRB permission to conduct the study at the end of May 2017.

For the study itself, the researcher first observed the classroom in each country for one week in order to know the daily activities of the Chinese and American preschools and to observe the children's

daily activities. During the observation period, the researcher took field notes, kept a journal reflecting on teachers' education issues, and noted the children's daily schedule and art activities. The next step of the study involved teacher participation. First, the children were read the story, Alexander and the Wind-Up Mouse, which is a children's book which uses bright colors and torn paper collage to describe the friendship between a real mouse, Alexander, and a wind-up mouse. Next, the children were asked to answer three open-ended questions about the book (see Appendix A) as well as what they thought of the two mice. Once they were done with their collages, the teacher and researcher asked them two questions: What did you create? Why did you create this? The researcher also marked their gender on their artwork to analyze if there were any differences between the boys and girls.

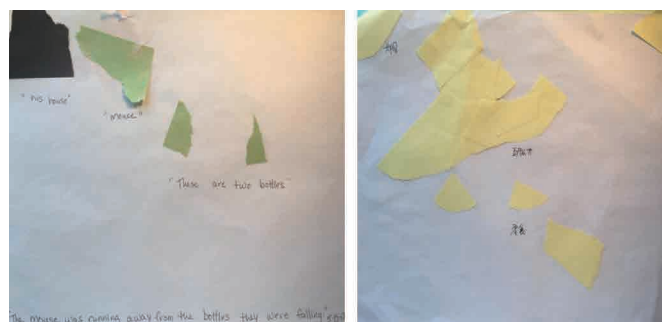
3.3 Data analysis

The qualitative study was based on collecting each country's children's collages, which exhibited a variety of symbolic representations, from the creativity activity. Additionally, the researcher coded and gave labels to the field notes and reflective journal observing preschool classroom daily activities to explore if there were any connections with the children's creative development and comparing if there were any differences of educational styles between the two countries. Finally, through analysis of the children's artwork, the researcher investigated if there were different symbolic representations between the two countries and if there were any differences in the expression of the creative activity based upon gender.

3.4 Findings

The study included a discussion with the children about the collages they had created. In particular, the study focused on comparing the American and Chinese children's creation of houses, the mouse-character (Alexander) and the character of the wind-up mouse. Additionally, the study noted gender differences in the use of colors and subjects and the influence of the environment on the children's work. The study found that in the process of creating collages, children can not only feel the happiness of production, their creativity and imagination also can

be developed. From analysis of the daily schedules of the two preschools in this study, different methods of instruction were found between the American and Chinese preschools.



Finding 1. What did the children create?

Figure 1. Sample collages from an American child (left) and a Chinese child (right)

The collage samples demonstrate the use of different shapes: a triangle, rectangle, trapezoid, and fan. These shapes illustrate different symbols in their artwork.



Figure 2. Different shapes of torn paper creating a collage by an American child (left) and Chinese child (right)

The artwork was created with different shapes of torn paper pasted together. The collage represents the mouse's home and sea or clouds.



Figure 3. A static schematic visualization created by an American child (left) and a Chinese child (right)

In the artwork with a mouse, there is no plot or story represented, just the static mouse which was described in the story book.

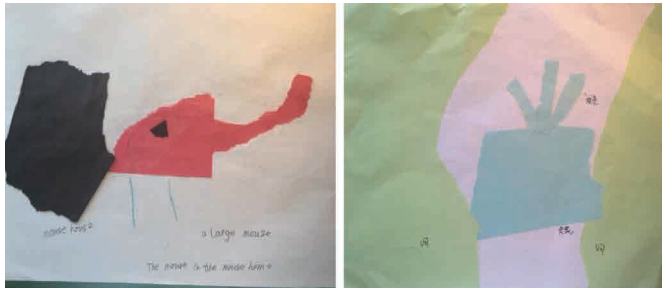


Figure 4. A static schematic visualization with a mouse hole created by an American child (left) and a Chinese child (right)

The child created a mouse and created a mouse hole for him.



Figure 5. Dynamic visualization with the surrounding natural environment created by an American child (left) and a Chinese child (right)

The mouse closely connects with the elements of the natural environment and modern society, such as mountains, flowers, clouds, roads, Lamborghini cars, or houses. The story of the lift artwork was the mouse is driving a Lamborghini car on the road, with flowers and grass on the sides of the road. The artwork on the right showed the mouse walking on grass surrounded by a house, hills and clouds.

Finding 2. The expression of residence, Alexander (a real mouse described in the story) and wind-up mouse (toy mouse in the story)



Figure 6. The residence created by American children (top row) and Chinese children (bottom row)

Most American children liked to create a residence for the mouse. In this activity, nine American children gave the mouse of Alexander a house or a hole in their artwork. Residences created by American children included polygons, crossed rectangles, and torn paper covered houses. In contrast, the Chinese group had only two children create a residence for the mouse. One Chinese child created a house with a triangular roof, two pillars of support, and a door in the middle. This is the traditional method for creating a house. The other child created a house that was a pet cage with two different colors of paper torn into a rectangle, then folded and pasted together. After analyzing the residences made by Chinese children and American children, the Chinese children's creative style is closer to the reality of the house, more realistic, while the American children created more abstract houses.

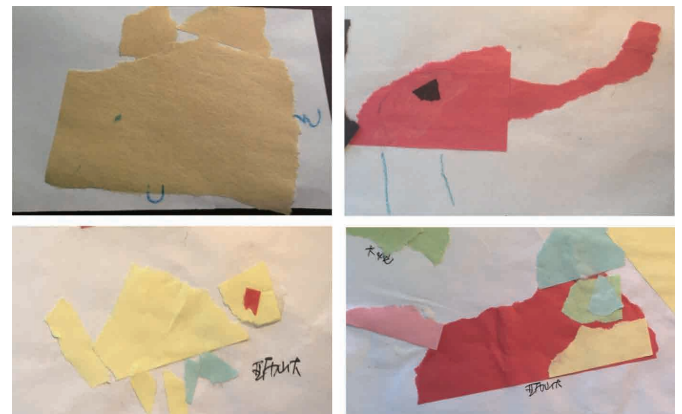


Figure 7. The mouse created by American children (top row) and Chinese children (bottom row)

In the study, the group of American children had seven children who created the mouse of Alexander with four children giving details of the mouse's body, such as ears, feet and tails. In the Chinese group, 11 children created Alexander and one child created the wind-up mouse. Eight Chinese children gave the details of the mouse, most of them having ears and tails; only one child's artwork had a tail, ears and feet. The wind-up mouse had a crank instead of the tail.

Finding 3. The differences between American and Chinese children's collages.



Figure 8. The subjects covered and colors chosen in children's artwork by American children (top row) and Chinese children (bottom row)

The researcher found that the content of the American children's artwork are relatively simple, and the Chinese children's artwork contains richer subjects. Five of American children focused on one subject in their work, including the house, mouse, mouse-trap, and boat. There were five children who included two subjects in their artwork, either a mouse with roads, or a mouse with a house. There was one child who had three subjects in the artwork. The artwork combined bottles, mouse holes and a mouse. The story of this artwork was the mouse is running away from the bottle which is on its way home. There was only one child who had five subjects expressed in the artwork which included the story of the mouse driving the Lamborghini sports car on the road, with flowers and grass on the sides of the road.

In the Chinese group of children, there was a child in his artwork who created a mouse. One child expressed two subjects, including mouse holes and the wind-up mouse. There were five children who used three subjects in their artwork, including meadows and a sun, Alexander, boats, sea, clouds, snacks, and tables. There were four children who had four subjects in their artwork, including a ship, sea, fish, plane, table, Alexander, and watering can. Two children had five subjects. One child created Alexander with the surrounding clouds, houses, hills, grasses. The other created Alexander and a cannon, house, cloud, and breakfast shop. Regarding colors that the children used, American children preferred to choose a single color; Chinese children liked to

choose a variety of colors.

Finding 4. The gender differences noted in the use of colors and subjects

Generally, in these samples, girls preferred to choose more vivid colors. In the group of Chinese children's samples, the girls preferred to use a variety of colors in their artwork; in contrast, the boys chose to use only one or two colors in their artwork. Girls liked to make grass, flowers, and snacks in their collages. Boys liked to make cannons, planes and sports cars. In the group of American samples, the girls liked to use red and blue; the boys mostly liked black and brown. Moreover, the girls made room for e whereas the boys liked to make roads, bridges and cars.

Finding 5. The influence of the environment on the children's work

In this study, the American children preferred to make modern roads and bridges. The Chinese children preferred to make hills, seas, boats, and snacks. Moreover, there were two Chinese children who combined origami in their work, such as an origami airplane and folding cage. After talking with the children about their artwork and what the things in it might represent. The researcher identified one child, whose work included a sports car, pet cage, and watering can, whose father was a mechanical engineer and who often worked with three-dimensional structures and models. Another child's artwork included hills, sun and grass. It turned out that his mother often took him to a park where there were hills, grass, flower and the sun. In the group of American samples, there was a child whose work included a Lamborghini sports car and road. Upon investigation, it was revealed that most of his free play time in the preschool was spent playing with a variety of toy cars. Therefore, Children's creativity might come from their observations of life, and their artwork may express their perception of the environment surrounding them.

Finding 6. The different methods of instruction between the American preschool and Chinese preschool

Table 1. 4 year old's daily schedule

	The American Preschool	The Chinese Preschool
4 year old's daily schedule	8:30-8:40 Arrival/ Sign-in 8:40-8:45 planning 8:45-9:45 Choice time 9:45-9:55 clean-up 9:55-10:05 Prepare for small group 10:05-10:20 Small group 10:20-10:30 Large group (Music movement/ Story) 10:30-10:50 Snack 10:50-11:00 Ready for outdoor play 11:00-11:30 Outside play/ Prepare for dismissal (Regular class time from Monday to Thursday 8:30-11:30)	7:30-8:20 Arrival/ Sign-in 8:30-8:50 Educational activity (teacher-guided) 9:00-9:20 Educational activity (Study time) 9:30-9:50 Work time/Snack 10:00-10:45 Outside play 11:00-11:20 Lunch 11:20 Outside walking 12:00 Nap time 2:00-2:30 Dancing accompanied by Carl Orff music 2:30-2:50 Educational activity (teacher-guided) 3:00-3:30 Work time/Snack 4:10-4:30 Educational activity (Study time) 4:30 Prepare for dismissal (Regular class time from Monday to Friday 8:40-16:35)

This is the daily schedule of the two preschools in this study, and as seen from the chart, the length of the Chinese preschool is longer than that of the Americans. Chinese preschool educational activities last for 80 minutes each day, including 40 minutes of teacher's instruction or guidance for the students and the other 40 minutes of children's practice or study time. In contrast, there are 50 minutes of educational activities in the American preschool, and the teacher's guidance time is usually not long in each activity.

4 Discussion

From the different strategies the children used in their collages, it can be seen that they enjoy the process of creating art, and their work is rich in imagination and creativity. In the present study, the researcher examined the torn paper collages created by American and Chinese children. We analyzed what children created in their artwork, the differences between the American children and Chinese children, the gender differences in color selection and subject representation, and the influence of the environment on children's representations. The results showed that 4-year-old children are able to control their muscles, and that the ability of brain and hand cooperation has been well developed. According to Piaget's (1977) cognitive development theory, the age of 4 is a pre-operational stage, in which children are able to think deeper and use pictures to represent objects. They have been able to initially recognize the different shapes, such as a triangle, rectangle and trapezoid, and most of them can tear out the shape they want (Figure 1).

The results also showed that Chinese children prefer to use the building method of a traditional

house, which consists of the triangular roof, square or rectangular house, as well as a door in the middle. This can be compared to other countries in Asia, such as Japan and South Korea, where children like to use traditional painting methods when creating symbols. In contrast, American children build the house more casually, and their houses are polygonal or pasted together by many different shapes. According to Huntsinger, et al (2011), children's art skills are shaped by cultural beliefs. The culture will influence children's "developmental rate, the graphic elements, the topics of the drawings, the need to develop representational skills" (Huntsinger et al, 2011, p.134). Moreover, a child's ability of producing symbols depends on their "current stage of symbolic development, cultural background and the personal experience" (Nowak-Fabrykowski, 1992, p.268). Therefore, the different strategies and forms of residence representation (Figure 6) can be explained by the children's different cultures and backgrounds.

However, in this study, American and Chinese children are very similar in their expressions of the mouse, and in their artwork, the mouse has ears, eyes and a tail. However, among the Chinese children, only one child created a mouse with four feet, while most of the American children created mice with two feet. The subjects of the American children's artwork are relatively simple while those of the Chinese children contain richer subjects.

There is no doubt that all of the children's artwork in this study is full of creativity and imagination, and their cognitive ability is well developed in this period; they can create a simple story scene in their artwork according to their use of symbols and subjects. However, boys and girls may have represented things

differently in their artwork, and the differences may be explained by gender. For example, the boys tend to have more mechanical ability in the expression of their artwork, while the girls like to choose bright colors such as pink and red, and there are more decorations in their artwork, such as flowers and snacks.

In terms of the influence of environment, as claimed in literature reviewed, the children's symbolic representation may be influenced by the family and cultural environment or personal interests. As is shown in Finding 5, they are sensing and observing the surrounding world in this age, and they create symbols in their artwork to represent what they have observed in the real world. In addition, some of the children's artwork seem to reflect their own hobbies. They see themselves as the protagonist in the story of Alexander and use the mouse to express their favorite things. For example, they drive the Lamborghini sports car on the road or sit on the ship to enjoy the sea. Moreover, as Figure 9 shows, Chinese preschool education tends to guide and give more instruction on art skills, while the American preschool gives children more time to have experiments and practice by themselves. This reflects the results of a study by Carol S. Huntsinger, Paul E. Jose, Dana Balsink Krieg, and Zupei Luo (2011) who conducted the Draw-A-Person Test, with 40 second-generation Chinese American (CA) children (20 boys, 20 girls) and 40 European American children (20 boys, 20 girls), and the Chinese American children in this study did not appear to have "their creativity stifled by their more structured approach to drawing development runs against the deep-seated American view that creativity flourishes in a context without constraints" (Huntsinger et al, 2011, p. 143).

5 Conclusion

Children, as independent individuals, have different experiences, backgrounds, and cultures. Therefore, their artwork has different meanings, symbols and subjects. The age of 4 is a golden age in the development of children's creativity and imagination. Educators should stimulate their creativity and imagination, and should not treat their artwork with the same standard. In addition, many children's inspiration comes from their normal observation and feelings. Parents and preschool teachers can

organize more outdoor activities to give children more opportunities to observe the natural and outside world. From research on this topic it can be concluded that professional guidance for children will not destroy their creativity. Some people may not agree with this, but when children control more art skills, they might create more works and become more involved in art. I agree with the suggestion of Huntsinger et al (2011). that educators should balance children's natural talent with professional guidance.

In this study, without taking into account the age, there may be differences in the representation skills and topic expression in the creative activity of the four-year-old children due to their exact chronological age (four years and two months vs four years and ten months). This open-ended activity of creating torn paper collages was conducted during regular class time, and the children participants were divided into different groups to make torn paper collages together at the same table.

However, children of this age like to imitate others (Dodge et al., 2002). Thus, a child may make a house, and then another child will imitate him or her to make a house, too. This may affect the results. In future investigations, it might be better to separate the children to avoid the possibility of imitation.

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