

EMPOWERING CHILDREN'S CREATIVITY WITH THE INSTRUCTION OF WORDLESS PICTURE BOOKS

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ABSTRACT

This research aims to explore whether children's wordless picture book instruction has a positive influence on children's creativity and the performance of creativity within the children's work. This research was conducted with qualitative method as the main approach, and the quantitative method as the supportive approach. We selected 29 5-year-old children in certain elementary school's affiliated preschool in Kaohsiung City as the experimental group, and the 27 5-year-old children in the nearby affiliated preschool as the control group. For the children in the experimental group, the children interpreted wordless books and proceeded relative extended activities through preschool educators-children co-reading and discussion as experimental teaching lasting 12 weeks. On the other hand, children in the control group received general teaching. In regard of qualitative part, the researcher and an art craft professional evaluated and analyzed children's picture book creativity, and the data of daily observation and discussing process, interpretation of wordless picture books and parents feedback were analyzed and organized to prove that children's creativity has transformed, and compare with the quantitative data. As for quantitative part, we adopted quasi experimental research. In addition to 9 wordless picture books, the research tools also included the "children's image creativity test" in "children's creativity test" published by Educational Bureau, Taipei City Government, the pretest and post test data, and the hypothesis test with single factor co-variance analysis. The research results are as follows:

1. Wordless picture book integrated into early childhood education is helpful for children's performance of creativity in children's drawing works.
2. Wordless picture book integrated into early childhood education extended activities can enhance children's overall performance of creativity.
3. Wordless picture book integrated into early childhood education can enhance children's "fluid ability" and "creativity".

Keywords: Children; wordless picture books, creativity, early childhood education.

INTRODUCTION

Research Motivations

Discoveries in the teaching site

In the teaching site, the researcher observed that when the children was reading in the language corner, those who know less words would focus on the pictures, and told the story with the messages of images and exertion of imagination. In the process, children not only operated sense of vision, but also thought about the meaning of images. The researcher used to hide the book's name before introduction to the book in order to guide the children to talk about the said picture book's plot in accordance with the cover of the book, and the children

were all rushing to give a try. At such moment, the children were thinking, as their brain worked, imagination started, and with imagination, they could create a new plot different from the author, which is the performance of creativity.

Research (Beckett, 2013; Brodie, 2011; Cheng, 2008; Evans, 2009) proposed that picture books are the "words of the first priority" loved by children. The illustrations in the book allow the children to get close to the books before learning words, which build up a good foundation of reading. Also, Kiefer (2015) indicated that illustrations in the picture books are the pictures children contact the earliest. In contrast, although text can communicate more abstract and accurate concepts, ideas, and feelings, children have to learn how to control; therefore, as far as reading absorption, pictures can express the scene's space and detail of colors of the shape more quickly, more completely, and more concretely, which is characterized with "understanding all at a glance" (Cheng, 2008). Good picture books have children's development property, communicative education property, and art performance property, and they are also characterized with imagination and creativity, all have the influence intense and powerful for children (Marron, 2010; Remi, 2011). This is also why the researcher liked to integrate picture books into teacher, where imagination and creativity is one of the factors of why I like picture books.

In the world of picture books, there is a link that presents the story's plot merely with pictures, which is wordless picture books. Wordless picture books jump out from the words, enable the readers to enjoy space of imagination and creation of stories. Since there are no words at all, the reader tend to pay attention to the messages of sense of vision (Raqi & Zainab, 2008; Son & Kim, 2007). In addition, "imagination" has always been one of the thinking model that I like; and it can satisfy my dreams unable to carry out in life. In the meantime, wordless picture books can be associated with creativity; just because they are wordless, children open their own imaginary wings to experience limitless pleasure, and provide even larger imaginary space.

LITERATURE REVIEW

Importance of developing creativity in early stage

In 21st century, knowledge economy is the focus, and man's living development no longer relies on labor and machines, and has to enter into development and application of knowledge, where creativity is the foundation of knowledge economy's development. In 2001, Ministry of Education proposed particularly the Educational Whitepaper for Creativity aiming at implementation of Republic of Creativity (ROC). In this case, education of creativity is valued. As for children's development of creativity, Yu (2009) held that it derives from so-called imagination and continue its development until adolescence period. Then, comprehension ability also starts to development, while imagination stops. No new imagination appears, which means early childhood is the enlightenment period for creativity.

Whiteley (2002) remarked that rich imagination and creativity can be obtained from direct and indirect experiences. The more we experience, the richer our imagination and creativity become. As such, picture books can exactly provide children with those precious experiences. Since the degree of creativity development in early stage has remarkable and profound influence. In early childhood stage, if they can be enlightened through picture books, it can not only cultivate ability of creation. but also develop children's display of creativity in their life attitude so as to serve as learning foundation subsequently.

The left corner of empirical studies

Studies regarding correlation between creativity and picture books are rare, and studies on wordless picture books are scarce. As Sipe (2011; 2012) mentioned the influence of wordless picture books on children's learning development currently. In Taiwan, we are still staying at theoretic recounting stage, so she expects more studies can discuss what influences children's learning and development from different dimensions and angles, such as thinking, language expression, creativity, and so on.

Research purposes

Based on the research motivations above, the purposes of this research are:

- (1). Explore wordless picture books' influence on performance of creativity in children's drawing works.
- (2). Explore the after wordless picture book teaching, the changes in children's overall creativity performance
- (3). Explore wordless picture book teaching's influence on children's creativity.

Based on the research purposes above, the questions of this research are:

- (1). After wordless picture book teaching, are children's drawing works more creative?
- (2). After wordless picture book teaching, are children more creative in daily life and classroom?
- (3). Can wordless picture book teaching raise children' creativity?

Definition of nouns

Children

Children indicated in this research refer to those who are already the 5 years old and go to preschool in the preschool class in the whole day class in the public preschool (experimental group) where the researcher works now, and those who are in the whole-day pre-school class in another public preschool.

Wordless picture books

No limits are set for wordless picture books, so the children can use their imagination to explain the images. On the other hand, children's creative thinking ability can be inspired through writing/telling their own stories. In this research, the "wordless picture books" are 9 wordless picture books used in the experimental teaching, including, "Rainy Day", "Here comes the wolf", "On the other side of the tree", "Secret comes from the ocean", "Snowman", "Umbrella", "A magic kindness", "A red book", and "Sky in summer".

Creativity

Williams indicated that in respect with cognition, creative behaviors include fluidity, flexibility, genius, and accuracy; in respect with affection, including adventure, challenges, curiosity, and imagination. Actually, the two kinds of creative behaviors are closely correlated and supplement with each other (McDonald & Parker, 2013; Shin & Shin, 2007;). The creativity mentioned in this research contains three creative thinking abilities: fluid power, flexible power, and ingenious power, made in "preparations of children's creativity test" compiled by Educational Bureau, Taipei City. The higher the score, the greater creativity will be.

Creative performance

In this research, creative performance means that through wordless picture book teaching, changes in children's pretest and post test scores in "children's image creativity test" in "children's creativity test" published by Educational Bureau, Taipei City Government, and their creative performance at home, like drawing works, discussion and publish, telling a story, make up a snowman, and so on.

LITERATURE DISCUSSION

Content of picture books

Definition of picture books

Natulka (2008) pointed out that the term "picture books" is the categorical term used in children's collection in U.S. Public Museum, referring to the readings from preschool to grade 2 in the primary school. Northrup (2012) considered that "picture books" are books exerting words and images to create stories, and a good picture book must closely connect pictures and words. "A book with illustrations" is different from "a picture book", as Sung Jui-chi once signified, text + pictures = a book with illustrations, and text x pictures = picture book (He San-ben, 1995). Consequently, text and pictures play an important role in picture books, to multiply both can highlight picture book's value and functions (McCabe, Fairchild, Grauerholz, Pescosolido, & Tope, 2011; Popova, 2012). If pictures in picture books are only used to explain the meaning of the texts, such condition does not comply with the requirement of picture books, and they are just story books with illustrations. As Ramos & Ramos (2011) thought, picture books can be regarded as a kind of synthetic crystal of literature and drawing art. Particularly, a really good picture book can extract the texts from the picture book completely, while by the pictures' imagery and connection, the complete story plot and the central thought the writer wants to express can be clearly delivered.

Content of wordless picture book

Definition of picture book

Wordless picture book is a kind of picture books. Literally, it is a book without words, and purely arrange the story by illustrations. The reader interprets the text's content and create his/her own story via messages in the pictures. Roser et al (2011) considered that the definition of wordless picture book is, "no words, or one or two pages with words in the book" (Serafini & Moses, 2014). Therefore, wordless picture books are not always without exertion of words--some picture books will use explanatory short sentences or onomatopoeia of sound or movement, and it may be that words only appear in one or two pages-- in broad sense, such picture books can be called "wordless picture books", because this type of books are categorized as "wordless picture book almost without any words" (Le Roux, 2012). For example, the book "here comes the big cat" is presented with vivid pictures, and 4 words "here comes the big cat" appear in different pages, which is exactly this type of wordless picture book.

Wordless picture books employ pictures as the main media of messages, and the pictures must carry narrative functions and story hints to certain degree, take the task of delivering the story's implication, and present the content's theme in the book. In wordless picture book, there are either no words completely, or it just contains a few words, both can be called a wordless picture book. However, a wordless picture book can be without words, but it must

contain pictures. Consequently, it differs from the general picture books that the words are distant from the pictures in the book.

Characteristics of wordless picture book

Characteristics of wordless picture book is that it has abundant image language, connects visual literature (learn interpretation and imagination), social literature (learn social groups' traits and expectations), and words (learn reading & writing language) (Ghosh & Laird, 2011). In addition, Arizpe et al (2013; 2014) indicated even more clearly that children's sense of vision orientation and their familiarity with image adaptation enable them to be attracted by those wordless picture books naturally. Wordless picture book's biggest characteristic is that it provides limitless possibilities of creating interpretation, and offers unique and diverse chance of creativity for the children to arrange and narrate stories through imagining, inter-connecting with their old experiences, and further construct and complete the story-telling. On the other side, we can have the children to engage in being an "writer", whose works are suitable for the preschool children who are less familiar with words due to endless chances for interpretation. This is what attracts the researcher to apply them as tools to show children's creative performance. In the same time, by means of reading the pictures, children develop their language and observation ability, image structure, and other important elements of reading ability.

Wordless picture book's values and functions

Wordless picture books possess a lot of values for children, and such values can help them develop reading skills. When the child coordinates with the pictures to make up his own story, he/she can develop oral language ability, and inspire creative thinking. And, when the child tells the story based on the illustrations, his/her sense and comprehension of the story also develop, and enhance the fun in interacting with the book (Gibson, 2010). For the children, wordless picture books is a treasure mountain waiting to be developed, and it allows the children to engage themselves in limitless exploration and imagination, and have a happy tour in the story of pictures to discover different surprise. Besides, wordless picture books can effectively encourage children to tell a story, play an active and positive role, and raise development in many territories. The functions of wordless picture books include: (1) establish concept of reading; (2) enhance oral and writing ability development; (3) cultivate thinking ability at higher level; (4) cultivate visual reading and writing abilities; (6) establish sense of achievement and self-confidence (Gorman et al, 2011), among them, creativity belongs to higher-level thinking ability.

To sum up, wordless picture books' values and functions lie in it endows the children with free imagination, allow the children to create their own story according their own thought, expand their own imagination, and inspire children's creativity. Then, wordless picture books further ceaselessly raise the children's vocabulary and linguistic ability, and let the children create their own story's values and functions according to their own ideas.

Research related to wordless picture books

Research related to children's narrating wordless picture books: Studies related to wordless picture books in children mind and the content analysis from children's narrating wordless picture books:

1. Pantaleo conducted a series of long-term studies aiming at picture books' meta-characteristics, most of the picture books are wordless picture books, including "the three pigs" (2002), "a long way gone" (2004a), "voices in the park" (2004b), "black and white" (2007a), and "zooming in" and "zooming out" (2007a). Due to no restriction to words, it provides the readers even more diversified interpretative and imaginative space, demonstrating limitless creativity.
2. Hamilton & Weiss (2005) analyzed children's narrating wordless picture book's content--take David Wiesner's "Tuesday" as example, it intends to understand how children narrate the wordless picture book "Tuesday" content as reference for teachers, parents, and picture book related work personnel.
3. Marron (2010) tries to explore the narrative content of two wordless picture books, "snowman" and "don't forget me, Santa Claus" and the narrative performance constructed when children narrating the two wordless picture books. The research subject are 4 children in preschool class in the public preschool, and it adopted narrative content analysis proposed for wordless picture book to proceed the text analysis of the two wordless picture books. Then, according to 7 story grammar proposed by Stein & Glenn (1979) to analyze the narrative content constructed by the children.

Research on teaching wordless picture books

1. Cheng Hsu-fang (2003) took David Wiesner's 7 Sector as example., targeting at 8 preschool class's early childhood educators in Chia-yi county/city, she tried to understand the method the preschool teachers used in teaching wordless picture book. She divided the teaching workflow into three stages-- before the story starts, during the story, and the end of the story-- to analyze how teachers exerted wordless picture books in teaching in the three different stages.
2. Lin Chia-yi (2007) conducted research on day care center personnel's exerting wordless picture book in teaching in Tainan region, from four major dimensions-- selecting wordless picture books, arranging environment and number of people, story content discussion, and activities--to proceed research analysis.
3. Lin Hui-jan (2009) explored children's observation and interpretation of the image language in wordless picture books with an attempt to probe into how children observe and interpret wordless picture books' image language of wordless picture book so as to construct the meaning of image of story.

Research on wordless picture book in visual art

1. Hou Ming-hsiu (2004) "Research on wordless picture book's image performance power and the narrative art"
2. Hung Chia-hui (2005) Take "song to the tree" as example, action research on wordless picture book's application to preschool's visual art teaching
3. Lu Mei-yu (2009) Explore photographic composition teaching with wordless picture books as the guide
3. Hsieh Ou-chia (2011) Take grade 1 in the elementary as example, proceed wordless picture book's teaching integrated into visual art's action research

Research on parent-child's coreading wordless picture books

In Chiu Wan-chen's (2008) research on "interaction and reaction of parent-child co-reading wordless picture books", it aims to explore the interaction and reaction of parent-child co-

reading wordless picture books, including understanding the utterance interaction method used in the process of parents and children co-reading wordless picture books, and exploring parent-child's reaction to the plot, roles, and pictures in the wordless picture books.

In Liu Yin's (1992) "wordless children's books-- interpretation of the picture book 'Snowman'", she used single text "snowman" as the analytical subject to discuss the brush stroke performance of the images, light variation, and so on in the text. Additionally, she paid attention to the traits of children's psychological development, picture type, and plot structure for conducting an overall and preliminary analysis of "snowman". As for Chen Hai-hung's (1997) "Let the children's imagination fly-- take reading guidance 'Tuesday' as example", the paper employed preliminary exploration of the plot, characters, scenes, themes, and illustrations with an emphasis on how the teacher guide the children to appreciate images for the purpose of triggering rich imagination.

Research Design and Implementation

Research methods and Research hypothesis

This research was conducted with qualitative method as the main approach, and the quantitative method as the supportive approach.

(1) In respect with qualitative research: In the process of experimental curriculum, with the researcher's identity of a teacher and a participating observer, she used event record method to record children's reaction to the wordless books and teacher-student interaction and conversation and organized the data into observation record, so that children's actual condition in taking part in experimental curriculum can be presented. Besides, children's drawing works before and after the experimental teaching were evaluated and analyzed in order to prove the description of experimental treatment results.

This research adopted observation method and semi-structure interview method. In the beginning, the researcher led the children to read the wordless picture books. In the reading process, sometimes the stories were presented with books, and sometimes with mono projector, allowing the children to read and discuss stories without being confined to certain method, and could see the presentation of wordless picture book's content more clearly. During free reading, children were permitted to turn over the book freely and discuss with one another, with the aid of digital camera to record the images, the recording pen to record the sounds, and collect data to serve as foundation for analysis.

(2) In respect with quantitative research: The design of this research is to reduce the experimental errors to the least, so we selected two preschool classes in public preschools for experimental research by dividing the children in two classes into experimental group and control group, and employed quasi-experimental design for pretest and post-test.

Independent variable: It is the variable manipulated by the researcher-- wordless picture book teaching, and the children were divided into experimental group and control group for teaching. In addition to proceeding general thematic activities, "wordless picture book teaching" was added to the experimental group, and the control group proceeded general thematic activity program and related language activities.

Dependent variable: The dependent variable is the post-test score of "children's image creativity test", including fluid power, flexible power, and ingenious power. In order to prevent the experimental results from being affected by the teacher, we had communicated with the teacher before implementing the curriculum and had gotten common consensus that

no special explanation or review-based recounting of the picture books would be done outside the experimental class. In addition, the experimental group's and control group's pretests and post-tests were also conducted by the researcher in order to achieve consistency of the test situation.

Experimental design

This experimental research adopted "quasi-experimental design", comparing the children receiving wordless picture book teaching and those not receiving wordless picture book teaching to see whether scores obtained from "children's image creativity test" (fluid power, flexible power, and ingenious power) reached significant difference. In this research, the experimental treatment is "wordless picture book teaching".

1. Step 1: 29 children in the researcher's class belonged to experimental group D, and the 27 children in the preschool class in the affiliated preschool was control group C.
2. Step 2: Before the experimental treatment, children in two groups both received "children's image creativity test".
3. Step 3: The experimental group received experimental treatment (X), while the control group did not.
4. Step 4: Children in two groups received "children's image creativity test" after experimental treatment. 29 children in the experimental group proceeded "wordless picture book teaching"; 27 children in the control group proceeded "general teaching" without receiving experimental treatment.

Research hypothesis

The experimental hypothesis mainly came from the results of literature discussion, which considers that wordless picture book teaching can enhance children's creativity. Physically speaking, the experimental hypothesis in this research are listed below:

The experimental hypothesis: The statistic analysis employed "single factor co-variance analysis" to compare difference in children's creativity in experimental group and control group to test the hypothesis.

H1: Score of image fluid power for children receiving wordless picture book teaching is significantly higher than those in control group without wordless picture book teaching.

H2: Score of image flexible power for children receiving wordless picture book teaching is significantly higher than those in control group without wordless picture book teaching.

H3: Score of image ingenious power for children receiving wordless picture book teaching is significantly higher than those in control group without wordless picture book teaching.

Research flowchart

This research flowchart is divided into three implementing stages: 1. The pre-test stage: one week before experimental teaching, both group received the pretest of "children's image creativity test"; 2. Experimental teaching: experimental group received wordless picture book teaching activity once 60 minutes, three times per week, and totally 12 weeks; 3. Post-test stage: One week after experimental teaching, both group received post-test of "children's image creativity test" in order to understand the effect of experimental teaching.

Pre-test stage

1. In the first month after the new semester began, we collected the children's picture works related to the teaching subject to function as comparing and contrasting their picture works' creative performance after experimental teaching.
2. Proceeded the pretest of "children's image creativity test".

Experimental research

For wordless picture book teaching in this research, one wordless picture book was taught weekly. In order to familiarize the children in experimental group and have them sufficiently narrate the content, wordless picture book teaching was divided into three sessions. A total of 9 wordless picture books were taught for 12 weeks, and the researcher conducted proper time adjustment according to the children's reaction. The teaching content included extended activities of the relative themes like children's telling the story, group story discussion (the teacher or the student asked the question), art craft creation, body development creation or drama activities.

Research tools

The research tools used in this research included "children's image creativity test", "9 wordless picture books", children's picture drawing creation analytical checklist, record tools, parent's feedback questionnaire, and the researcher personally.

(1) Children's creativity tests: In 2005, through "Preschool teachers' creative teaching workshop", Taipei City Government prepared a set of children's image creativity tests in respect with language, images, bodily kinesthetic intelligence, and the like.

(2) wordless picture books: This research selected 9 wordless picture books as the research tool. Fang Hsu-chen (2003) considered that the condition of selecting proper picture books for teaching must suit for children's age, the picture books' content must be story-based, the content must consist of basic literary elements (plot, roles, definite themes, apparent time/space background). Since discussion activity is required in teaching activities, we also consulted what was proposed by Lin Min-yi (2000) that only stories with thinking space are suitable for discussion. Stories with strong didactic implication are not fit. Based on the above-mentioned two scholars' opinions, and in accordance with the value and functions of the wordless picture books explored in literature, along with coordination with teaching targeting at the level and living experiences of the children in class, we selected 9 wordless picture books (as Appendix 2 attaches).

(3) Children's Drawing Creation Analytical Checklist: In Chang Shiu-jan's (2003) research, the researcher found that Children's Drawing Creation Analytical Checklist can be used as the standard of analyzing whether children's picture creation shows their creativity. This checklist comes from Huang Wang-lai's (2000) study; in this research, it served as the standard of analyzing children's art craft works.

(4) Record tools: In order to collect detailed research data, and to prevent the observation record and experimental teaching lose important message, records, video taking, and picture taking were used as supportive tools in the research process to record children's in-class condition, interaction, and conversation.

(5) Parents' feedback questionnaire: In order to understand that after wordless picture book' teaching experiments, how is children's creative performance at home, we consulted the parents' feedback questionnaire designed by Yang Yi-tsun (2006) and adapted the questionnaire with expectation to learn children's creative performance at home to serve as reference for modification of this research as well as teaching.

(6) **The researcher:** In this research, the researcher also served as curriculum conductor, observer, and research analyzer, who played the role of the insider.

Research field and participants

The research field in this study is the elementary school's affiliated preschool where the researcher taught as a teacher, and the partner coordinated with me in the class had provided opinions in the research process, so that the study proceeded smoothly. As for the evaluation and analysis part, the researcher had invited the art craft teacher to analyze children's drawing works' creative power together.

Data collection and treatment

Data collection in this study refers to the data collected by the researcher in the process of experimental research, which was categorized into two parts, "statistic analysis" and "qualitative data organization".

RESEARCH RESULTS AND DISCUSSION

1. Analysis of qualitative research results

To evaluate and analyze the 5 children in experimental group's picture works before and after experimental teaching so as to explore the improvement of their creativity. In addition, we also observed children's performance and interpretation of the wordless picture books in the research process to reduce to children's original appearance in teaching activities.

2. Analysis of quantitative research results (omitted)

In "children's image creativity test", "fluid power" and "ingenious power" of the testees in different groups achieved significant difference. Therefore, the research results also support the research hypothesis; that is, wordless picture book teaching has influence on children's creativity, and this influence raises children's creativity. In the meantime, "flexible power" was significant in t-test, but it did not have significant reaction in variance analysis, showing that this experimental teaching did not raise children in both groups' flexible power, and did not have significant influence on flexible power.

3. Comprehensive discussion

In this section, the researcher compared and made retrospection on this research's purposes, the experimental results, and other relative research parts, and discussed the implementing effects' possible causes according to analysis of the research results.

Discussion related to the research purposes

Influence of wordless picture books on creative performance in children's drawing works

In the process of children's work creation, they practiced creation from mutual imitation in the very beginning, to generation of their own aesthetic viewpoints and ideas gradually, willing to learn independent accomplishment of their own creation. Nevertheless, some children could create works only through imitating children next to them or after referring to others' works. From analysis of the drawing works of children in experimental group, the researcher and the art craft professional both approved that children's creative works made obvious progress, and proved that the developing process of children's creativity is completely displayed in the drawings. As children's picture drawing is a kind of creative activities with re-appearance of the visual experience imagination, it can be regarded that picture drawing and creativity support each other (Hu Bao-lin, 1994; Huang Tsou-hou, 2001).

Consequently, the drawing works were collected in this research as the creative performance for work analysis. Although the research results did not reach significant difference standard statistically, from 5 children's drawing works, it could be found that children demonstrated more characteristics of creativity after experimental teaching.

Children's performance of overall creativity after wordless picture book teaching

After wordless picture book teaching, in addition that the drawing works showed more creative performance, children's ability of language expression and telling a story was elevated. Besides, children proposed questions in group discussion as well, and sought for the answers that they desired. In the meantime, in the process of snowman creation, they exhibited ability of flexibility and coordinative power, which made the whole activity went smoothly, and the snowman was ingenious. Moreover, from the parents' feedback questionnaire, it is understood that children's creative performance was raised significantly, leading to more objective results. To sum up, other than children's display of creativity in the teaching activities, it can be expanded to application to daily life, which can carry out the teaching purposes. On the other hand, parents positive feedbacks make the researcher feel all painstaking efforts are worthy.

Influence of wordless picture book teaching on children's creativity

Whether in the world do children in the experimental group that accepted intervention of wordless picture books had creativity significantly superior to those in the control group that did not accept intervention of wordless picture books? After 12 weeks' intervention of the experiment as well as the statistic analysis of pre-test and post-test of "children's image creativity test", it is learned that:

To conclude, children generally obtained enlightenment due to intervention of wordless picture books, and further demonstrated partial creativity. In addition to presentation their creative performance in picture drawing, in discussion and publishing, language expression, thinking ability, and questioning ability made improvement and was rich with imagination and ingenious property. In addition, in their performance in daily life at home, children tended to seek for ways to solve their confusion more actively, and demonstrated their flexible power more sufficiently.

Compare with related studies

In literature of studies related to picture books and creativity, the answer to whether picture books can inspire children's creativity and raise children's creativity is positive. Picture books can not only influence on children's creativity, but also enhance significantly their abilities in language, learning attitudes, interest, and so on. However, why do some experimental designs show that certain traits of creativity cannot reach significant standard? The researcher considers that, traits of creativity include fluid power, flexible power, ingenious power, improvement power, and sensitivity power. However, the individual's development in a variety of aspects differs inherently, and the speed of development is affected by inherent and external factors. Therefore, although children receive wordless picture book teaching, they are still influenced by certain factors, resulting in the other traits of creativity cannot reach the significant standard of the test results. Due to testing tools, this research only measured children's creativity in respect with fluid power, flexible power, ingenious power, improvement power, and sensitivity power, which differs from other studies.

The results in this research show that regarding traits of creativity, children's flexible power does not reach significance, but their fluid power and ingenious power is considerably significant. Luo Mei-hui (2004) found the results from the quantitative data in "Torrence Test of Creative Thinking" that, fluid power, ingenious power, and improvement power's enlightenment is particularly effective. Besides, Jen Si-kuang (2008) obtained the qualitative research results that picture book teaching can develop students' imagination, and inspire their creative performance; students fluidity and ingenuity of thinking is presented in picture book creation. With Ramos & Ramos (2011) got the research result that it is difficult for children to have concrete performance in regard of flexible thinking. The three studies' research subjects are all primary school students, and their research results also find that the effect of flexible thinking is weaker, which is consistent with our research results.

Like the researcher, research(Son & Kim, 2007 has adopted the children as the research subject, and employed "quasi-experimental research method". Her research results show that only ingenious power's difference reaches significant standard, while fluid power, flexible power, and improvement power do not. Through exploration, it is found that this may due to only 30 children as the research subject in the class, and the factors of time and human labor lead to failure to apply to random sampling, resulting in that only ingenious power reaches significant standard. Also, Sipe (2012) found in her research that children in experimental group have transformation in "image's fluid power", "image's flexible power", and " image's improvement power" better than those in control group. She considered that the research results have verified the experimental hypothesis, because it is a multiple teaching design that is established on the mood of play in order to encourage rather than criticizing children. Besides, picture books are presented by means of multimedia for the children to observe the subtle details of the picture, and blank learning sheets are provided in order to offer chances for children to learn actively.

RESEARCH CONCLUSIONS AND SUGGESTIONS

The research results were compiled, and, according to the results, the researcher proposed conclusions. With analysis of the research process as well as results, the limitation encountered in the process is described, while suggestions are also made to other educators and researchers.

Conclusions

This research mainly explores wordless picture book teaching's influence on children's creativity and creative performance of children's works. Through the researcher and the children in experimental group, the curriculum was proceeded for 12 weeks' teacher-student co-reading wordless picture books. Then, through book cover discussion, children's interpretation of wordless picture books, and the relative extended activities, the children exerted their imagination and creativity to complete their own work.

According to the research results, this study obtained the conclusions below:

- (1) Children's creative performance in works has raised
- (2) Children connected their own life experiences to interpret wordless picture books
- (3) Through extended activities related to wordless picture books, children displayed their creativity
- (4) Though wordless picture book teaching, children's creativity can be raised

To conclude, this experimental teaching has certainly achieved the research purpose of elevating creative performance, which makes wordless picture book possess more value in practical use. It is unarguable that providing opportunities for children to contact with picture books can elevate their creative thinking. However, cultivation of creativity is based on profound experiences and cognition, and the true creation is "creation from convention" or breaking through the existing foundation, and seeking for change and innovation. Currently, cultivating children's creativity since childhood meets the society's demand, and set up the foundation in early stage can help raise future competition. As a result, preschool educators and parents bear the heavy responsibility of how to well arrange their time to enrich themselves, and permit the children to have more chances to read more, watch more, listen more, think more, and operate practically more becomes extremely important. On such basis, applying more enlightenment-based teaching approaches, children can certainly bring their potential to a full play, and exhibit their unique creative abilities.

Suggestions

It is found in the research results that our study is still insufficient in certain respects, so suggestions are proposed as reference for the on-site educating workers and studies in the future.

Suggestions for on-site educators

1. Creativity testing tools

For children's creative performance, diversified assessment can be adopted. In this research, the researcher only used the "children's image creativity test" in the children's creativity tests prepared by Taipei Educational Bureau. The "children's language creativity test" and "children's bodily kinesthetic intelligence test" were not employed for considerations on time and human labor factors. Therefore, it is suggested that under permission of time and human labor, the tests can be included into the testing tools for children's creativity. To understand children's creativity development in different fields can lead to more objective and complete research results.

2. Provide more opportunities for children to deliver ideas/works and discuss

The object that the children learn and imitate is mostly the teacher, peer, and family member. The educators can often provide mutual learning chances for children to publish and share. While they are sharing the peers' works, they can discuss mutually and propose their questions. In addition, the educator can guide the children to make self-retrospections and mutual observation and learning, make more encouragement and reduce time of criticizing so that children may have chances to make mistakes. In such way, we can see children's learning effect of making improvement continuously, and can effectively raise their creative thinking ability.

3. The activity design should focus on diversity and interest, which allows the children to experience personally

Children's learning is based on living experiences along with characteristics of fondness in play. As a result, in activity design, we should try our best to have the children experience activity proceeding in an interesting way. In such case, their sense of novel can be aroused, and their curiosity and learning interest can be stirred, so they can learn in playing games. Then, we may further cultivate children's in-depth thinking ability and enhance their learning efficiency in order to achieve the teaching goals beneficial to development of children's creativity. Moreover, diversified materials can be provided to the children to try and exerted freely, and the children can be encouraged to work their brain for thinking more usable and

replaceable materials, since such various changes will be able to stimulate children's creativity to further raise to higher level.

4. The educators must take respectful and encouraging attitudes towards children's performance

Children's development has not reached maturity in each respect, so when educator provides chance for them to operate by hands, he/she must respect children's autonomy in creation, and let the children enjoy space of free creation. Besides, the educator must be patient in waiting for the children to complete their own work, and make positive encouragement and appreciation for their creation, so that children can elevate confidence, love to create, and develop their creativity.

Suggestions for research in the future

1. Research subject

The research subject in this research is limited to 29 5-year-old children in certain elementary school's affiliated preschool in Kaohsiung City. In the future, the subject can be expanded to children in different regions, or to compare the difference with different genders, family backgrounds, and etc. to make the research results more valuable.

2. Research design

Regarding research design, this research only exerts experimental group and control group to make comparison. In the future, it is suggested that the subsequent studies can compare difference resulted from different background factors so that we can understand children's creativity development under different background factors as consultancy for other teaching designs.

3. Research theme

The research theme in this research is "Influence of wordless picture book's influence on children's creativity". In the future, it is suggested that studies can focus on other fields, such as language, art, and etc., or other themes related to children's development in order to discuss wordless picture book teaching's influence on children's creativity in different learning territories, and wordless picture book's impact on children's development in other dimensions.

To conclude, the suggestions above serve as reference for on-site educators and the subsequent research. If they can be applied to children's creativity enlightening activities, the teaching effect must be even more remarkable and will certainly achieve the teaching goal of creativity cultivation.

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