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Image Game Effectiveness in Teaching Visual Arts for 2nd Graders

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Abstract *The objectives of this research were to 1) compare pre- and post-mean visual image score in the arts course for 2 graders, and 2) assess student's satisfaction toward the use of game in supporting their learning unit. A total number of 26 second graders in a private primary school in Bangkok were purposively recruited as a unit of study. The study instruments were the image game, a knowledge test, and a satisfaction survey. Percentage, mean, standard deviation, and dependent t-test were used for data analyses. The findings revealed that 1) the image game enhanced student's visual image knowledge scores. Students' posttest scores (M = 15.92, S.D. = 1.32) were significantly higher than the pretest (M = 11.50, S.D. = 1.27) at p < .001 level; and 2) Students showed positive satisfaction towards the use of image game in their arts course at a good level.*

Keywords: Image Game, visual arts, 2nd graders

Introduction

Thailand's National Curriculum determines standard and indications for the subject area of arts that "*…the arts discipline helps develop creative thinking, imagination, aesthetic appreciation, all of which enhance life quality of persons…*" (Thailand National Curriculum for Basic Education, 2008). Arts also promote learner's

self-confidence and discovering their potential as basics to their further education or career (The Ministry of Education, 2002).

According to the Thailand National Curriculum, the subject area of arts comprises 3 subdivisions: music, visual arts, and performance. Regarding visual arts, two learning standards are determined: 1) to create visual arts product, based on the learner's imagination and creativity; to analyze, criticize, and evaluate visual arts products, to transfer thoughts and feelings toward pieces of arts independently, to appreciate and apply arts for daily livings; 2) to understand a relationship between historical visual arts and culture of music, including cultural heritage of local, Thai, and universal wisdoms (The Ministry of Education, 2002).

In the arts classrooms, teachers need to realize importance of the visual arts, especially creativity of visual arts, which base imaginative performances. In attempt to promote teaching and learning arts, the researchers were therefore interested in undertaking a research study in the subject of visual arts. Their interest was based on the fact that arts are human creative artifacts. Such artifacts represent patterns, thoughts, society, and beliefs of persons from different cultures. As human beings, people all the times expose to various fields of arts such as photos, drawings, potteries, sculptures, architectures and so on. Apart from visual aesthetics, arts are clearly means to express cultures, and traces of human beings, which lead to the claim that human beings are more developmentally advanced than other kinds of animals, in terms of learning capability. Therefore, to encourage learners to creatively produce visual art piecework is important because the leaners would have an opportunity to draw and develop their creativity and imagination for further life development.

Nevertheless, as teachers teaching visual arts for 2 grade students in a primary school, the researcher team found that students showed difficulties in expressing, or transferring their creativity and imagination into work pieces. Insufficient thinking ability or limited mental representation might result incapability to produce or express such productions. If students have no experience or not being trained how to think visually (i.e., mental representation), their products might be of a direct copy from other's piece works. They then were a copycat instead of a creator. According to abovementioned reasons, if there were games that could enhance students' thinking and imagination ability, students would advance themselves in these

critical abilities. And hopefully, they will finally produce their own creative works, or carry these potential for their higher education.

The researchers were therefore interested in proposing a method for visual arts instructional development for 2nd graders, by using a visual art game as a means of their learning. The game would enhance students' creativity, imagination, expertise, and experience in thinking, leading to their own mastery and create their own art production. The instruction is a learner-centered approach, which enhances students' learning potential by using game as a means of knowledge self-construction in the subject area of visual arts for 2 graders. Thus, the objectives of this current study were as follows:

1. To propose an innovation of teaching visual arts by using a visual game as a means of knowledge construction for 2nd graders,
2. To compare pre and post scores on visual arts tests among 2nd graders, to whom visual arts game was employed,
3. To assess students' satisfactions towards the use of visual game in the visual arts subject of 2nd graders.

Literature Review

According to the Royal Thai Society (2011), image is a mental picture that we derive from our thoughts. Image is varied from one to another, depending on personal thoughts, background, and experience. In English, image is synonymous to imaging, imaginary, and visualization. Stanford Encyclopedia of Arts defines imagination as a means of communication between perception, emotion, and physical changes. Imagination bridges thoughts, emotion, body, mind, and soul. The way a person builds an image is somehow from memory, dream, mental representation, and visualization. Stokes (2002) states that visual literacy is an ability to interpret or translate pictures that represent and communicate meanings. In this context, pictures communicate meaning, instead of languages. To achieve the meanings of the picture, imagination is then a required skill for interpretation. Peggy Van Meter (2001) states that imagination is a visualization of a mental representation from a perception of five receptive senses (i.e., seeing, hearing, smelling, tasting, and feeling). While a personal constructing their image, the individual unconsciously has physical response. This

reaction process results in the individual to feel relaxed, and thus demonstrates observable physical changes. Hubbard & Ernst (1996, p. 129 as cited in Peggy Van Meter, 2001) states that imagination is a natural means of communication similar to speaking or writing. Image is, among others, a means of communication of thoughts and expressions, as well as discoveries. Just when human beings learned how to use a verbal language, they learned to use images to communicate and express their thoughts and imagination. Taşdemir (2010) says that imagination is the use of experience relating to memory, dream, visual-mental representation, and visualization, together with only touching, or more perceptive modals. The process, again, bridges body, mind, and soul. In short, imagination is an important process of human beings as it is an integration of senses, perceptions, emotions, backgrounds, and experiences and functions as a means of communication that bridges the individual's body, mind, and soul. The individual shows observable physical changes in a relaxed manner when he/she is imagining, or visualizing.

Horowitz's visualization theory believes that there are three forms of visualization and thought patterns (Gibert, Reiner, & Nakhleh, 2008). The first pattern is *enactive thought*. This kind of thought affects physical changes. For example, when the individual is visualizing lifting heavy stuff, his/her shoulder and arm muscles got tensed. If the individual is visualizing biting a tangy green lime and tasting lime juice, his/her muscles got tensed and he/she salivates. This physical response is from the function of the brain limbic system. The limbic appears to be primarily responsible for our emotional life, and has a lot to do with the formation of memories. It ignites physical responses towards emotional thoughts and visualizations. Visualization can be used to control physical responses because visualization makes connection between thoughts (function of the limbic part) and physical responses. Visualization leads to observable physical changes that response to mental visualization.

The second pattern is *lexical thought*. This kind of thought communicates clarity, analysis, abstract, calculation, timing memory, and criticism. It functions in the left brain resulted from learning and experience during individual's childhood which have been encoded as long-term memories. Once the individual receives any more messages or stimuli, he/she would realize the new

messages or stimuli to an existing schema, then he/she would accommodate novel messages or stimuli and assimilate into their memory. When the individuals are realizing, accommodating, or assimilating, physical responses are observed.

The last pattern is *imaged thought*. This kind of thought is relevant to dream, imagination, and creativity. The right brain is responsible for these innate thinking activities. The imaged thought fast progressed during pre-verbal developmental stage because, at that time, the child cannot express their thoughts verbally. Therefore, the imaged thought is the only method that the child could instruct and communicate to itself and its parents. When the child grows to the verbal stage the imaged thought ability would then slow down. In school, the child is heavily taught to think reasonably and logically. They thus reduce the right brain development on imagination and creativity. For those who possess better right brain function, they will have better visualization and creative thinking, while the left brain dominant will find themselves difficult imagining or making some creative artworks. It is due to the fact that the left brain dominantly restrict their perceptions and beliefs on the world reality. However, the left brain dominant did not totally lack of these abilities if the individual could connect imagination with the underlined reason. Practicing also helps them to attain more flexibility to conciliate between reality and imagination. Practices can be given to students from the most basic level, then ascending to the higher levels. It also requires times to practice among modes of perception. Perceptive stimuli will help students to imagine and think creatively. During the process, the thought enhances right brain function for visualization. Among good stimuli are images of pleasurable places. When students are probed to think about these places, the limbic brain system is aroused, resulting in having positive feelings of relaxation, enjoyment, and entertainment. Meanwhile, the left brain received the visualized stimulus. It is aroused for logical, and critical thought patterns. Thus, the visualized stimulus is adjusted, accommodated, and assimilated based on reality and ready to be stored in the individual memory.

Theory of Transformation

To transform visual arts, including fine and applied fine arts, and other forms of arts, the artists or designers rely on various theories of transformation, depending on the individuals, trends,

aptitudes, and other influential variables. Nonetheless, four major theories of transformation are reviewed here.

First of all, the *immitationalism* theory provides the idea that this theory expresses the idea for the creativity of arts to achieve value of realistic expression. By realistic expression means that artists visualize their arts just like what can be seen by naked eyes, or real touched by sensational modes, or both. The realistic expression always transforms from natural media like portraits of human beings, animals, scenes, flowers, trees, rocks etc. The audience would promptly be able to interpret or perceive what the picture is, without cognitive challenges on achieving the meanings of the pictures.

The second theory is called *formalism theory*. This theory is an expression of thoughts in creating arts by emphasizing on the elements of visual arts such as colors, weights, lines, figures, surfaces, textures. The artwork can be directly transformed of the physical objects, or can be in semi-abstract forms. That is the artworks are sometimes denatured, while the focus of the artworks is shifted to the creator of the artworks. However, this method could be successful if audiences have shared background knowledge or experience with the artists.

Emotionalism is the third theory of transformation. This theory emphasizes on expression of feelings, which is a means is expressing thoughts in creating the artworks. It mainly emphasizes on the expression of feelings and emotions. Transformation of artworks can be in the abstract forms or expressionism. For the latter, the artist does not concern the forms, or natural law, but the characteristics that he/she wants to create and express such feelings to the audience. Nevertheless, the artists still rely on basic concepts and rules of the arts for creating their artworks.

Lastly, the *imaginationalism theory* is the concept concerning that the expression of creativity, arts, or imagination are based on idealism of expression. That is, most artworks relate to traditions or cultures. For example, in creation of Thai, Chinese, or Indian artworks, the artist needs to thoroughly know and understand the traditions and cultures of the community or society that he/she bases his/her artworks.

Game Theory

Game is one of the means to explain and state social problems. In general, games usually reflect what the real situation happened. Specifically, in competitive or cooperative situations, strategic plans are introduced and available for the participants to adopt the plan to solve and figure out the solution of a problematic situation. According to the game theory, we can predict how the participants, parties, or states will do in order to "win" their rivals. However, in our actual life, we need to follow the rules of law. Some games are just like our daily lives. They can be roughly categorized into two groups: competitive and cooperative games. For *competitive game*, the game will result in the winner takes all. That is, there is only one winner in the game. Playing chess is an example of this game. The other type of the game is *cooperative game*. This kind of game is like the gamers playing a game as a team, trying cooperatively to win the game. For example, a number of newly launched games now require cooperation of the players to win the game. Nonetheless, in a classroom setting, it is recommended for the teacher to use cooperative games in their classroom so students will learn to achieve their goal (in this case is to win the game) by planning strategically with their teammates.

Methodology

This study is a pre-experimental research with a one group pretest-posttest design, aiming at comparing the pre-and-post scores of the students on visual arts under the topic of imaginative development. Moreover, an assessment on students' satisfaction toward the use of game to enhance their learning was done to assure their affection for the use of game.

Population and Sample

The population in this study was 90 second graders from Sakon Suksa School in Bangkae District Bangkok. A sample size of 26 students was recruited by purposive random sampling technique.

Research Instruments

Two main instruments employed in the study were as follows: the experimental and data collection instruments. The imagination game was used as the main experimental instrument. It was developed by the researcher teams. Additionally, there are two instruments designated for data collection. The first set of data collection instruments was a pre-test and post-test form. It is a combination of a 10question multiple choice (possible attempting score of 10), and one open-ended question (possible attempting score of 20). Thus, there are two forms of the knowledge tests, both having possible score of 30. The second data collection instrument was a satisfaction survey. It is composed of 10 5-rating-scale items asking for students' satisfaction toward the use of image game in studying visual arts. The scale runs from least (1) to most (5).

Procedure

In short, the game was used as a part of learning activities for 2 graders during their regular visual arts sessions. To ensure effectiveness of the game that it was not affected by regular lessons, the content of visual arts had been taught in the session prior the game was employed. After the content were completely delivered, the researchers asked the students to completed the pretest. After that, the game was introduced as an enhancer to the lesson. Once all students were done playing game, the posttest was employed right away, followed by a satisfaction survey. All students were then thanked for their kind cooperation during the experiment. Knowledge and satisfaction scores were then ready for further analyses.

Results

The findings revealed that students gained higher scores in the posttest, as compared to pretest as shown is Table 1.

Table 1 shows score comparison between pre and post tests of second graders on visual arts, using an image game as a means of learning. Students' post test scores (M = 15.92, SD = 1.32) were significantly higher than those of the pretest (M = 11.50, SD = 1.27; t (25, 2) = -23.85, p< .001).

Table 2 shows students' satisfaction score on the use of image game to learn visual arts. The findings revealed students' high satisfaction score on the use of image game to enhance their learning of visual arts as shown as following:

Table 1. Pre and post test scores on visual arts of 2nd graders students.

Test	n	*M*	*SD*	*t*
Pretest	26	11.50	1.27	-23.85*
Posttest		15.92	1.32	

*p<.001

Table 2. Pre and post test scores on visual arts of 2nd graders students.

Item	**Students' Score**		
	M	***SD***	**Level**
1. Learning activities serve learning objectives.	4.73	0.45	highest
2. The game promotes students' exchange of ideas and experience.	4.85	0.36	highest
3. The game promotes thoughts and learning methods.	4.73	0.45	highest
4. The game is a means to promote students' effective learning.	4.77	0.42	highest
5. The game is variety.	4.77	0.42	highest
6. The game enhances students' enthusiasm in participating learning activities.	4.92	0.27	highest
7. Classroom learning atmosphere suits learning activities.	4.88	0.32	highest
8. Contents are coherent.	4.88	0.32	highest
9. Students had chance to express their thoughts and opinion.	4.96	0.20	highest
10. Activities are not too difficult for students.	4.88	0.32	highest
Total	**4.84**	**0.35**	**highest**

The findings revealed that the students rated highest on overall satisfaction for the use of image game, meaning that students loved having game to enhance their learning. The highest rated aspect was students had chance to express their thoughts and opinion (M = 4.96; SD = 0.20), followed by the game enhances students' enthusiasm in participating learning activities (M = 4.92; SD = 0.27), and classroom learning atmosphere suits learning activities, contents are coherent, and activities are not too difficult for students (all tied, M = 4.88; SD = 0.32) respectively.

Discussion

The findings from the study showed that second grade students gained higher scores on the post test, as compared to their pretest in visual arts. It can therefore be concluded that the image game enhanced students' learning. An explanation for gaining scores may be due to the fact that imagination emphasizes on enhancing students to show their opinion and creative thoughts. In addition, the target potential set by the game was accompanied by joy and pleasure in activities participation. The game was also designed following the student-centered approach. Moreover, students had a chance to create their novel artworks by applying their imagination into the art pieces. This technique, thus masters the students to gain competence in creative thoughts. Students therefore gained higher score on the posttest.

Regarding students' satisfaction toward to game, the overall rated score was 4.84, which was categorized into the "highest" level of satisfaction. This average total score showed that students liked playing this kind of game because the image game leafs opportunity for the students to express their thoughts and idea. Moreover, it encourages students' enthusiasm in completing hands-on tasks. Moreover, game comforts learning atmosphere for the students. With appropriate teaching technique like using game is good for students' learning methods. The well-planned game to make the content coherent and not too difficult for the students have made students learned in a friendly atmosphere.

Recommendation

Based on the findings, the researchers suggest two recommendations for future studies. First, it is evident from students' gaining score that the use of game enhances students learning, better self-development. Therefore, all educational stakeholders such as school principals should support the use of game to enhance learning activities for better learning quality and effectiveness. Second, students rated high satisfaction score in the use of imagination. Therefore, teachers should adopt using games to enhance students' learning for better learning quality and effectiveness.

All in all, it is evident that the use of game is good to promote student learning, support learning atmosphere, and raise students' satisfaction toward learning activities. The recent research also supports the positive evident of using game to promote students' learning outcomes and activities.

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