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Effectiveness of Systematic Teaching Methods on Art Creation at the Secondary Level

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Abstract

Visual Arts Education is taught to enhance artistic creativity in schools, but students' performance in artistic creativity is still at a bland level. This is the result of teaching methods that use free, open, and unstructured techniques for students to visualize and frame the artwork. This study examines whether systematic and collaborative methods are more effective in enhancing creativity in the production of art than independent teaching methods. The sample of this study consisted of 60 students at a secondary school in Penang. The systematic teaching method is implemented with the Desktop Publishing facility containing templates and clip art while the free and open teaching method is implemented through visual search of photos and graphics from magazines and newspapers provided. Both groups of students are trained to produce artwork through the steps of the CPS model which includes understanding the challenges, generating ideas, being prepared to act, planning solutions, implementing design processes and evaluating results before experiments. All students study cooperatively and produce the first art assignment in a group, and one week later produce the second art assignment individually. Creativity scores were obtained using Torannce's (1994) creativity measurement instrument. The findings show that there is no significant difference in the overall score of group and individual creativity. However, the findings show that there is a significant difference in the components of originality and level of creativity by group and in the components of decomposition by individual. This study therefore suggests that systematic methods based on DTP, CPS and cooperative learning need to be implemented to enhance creativity in the arts

Keyword: Visual art, Artistic creativity, creativity, CPS Model, Art creation

Background

The goal of high school Visual Arts Education is to create a culturally literate Malaysian personality with high aesthetic values, imaginative, critical, creative, innovative and inventive. Eisner (1989), in many countries he has visited around the world, found that one of the reasons Visual Arts Education has no place in the school curriculum is due to the lack of effectiveness of the assessment system and the absence of new findings as evidence of reliable Visual Arts achievement his importance in education.

Lansing (1971), basically stated that Art Education needs to focus on three main domains namely cognitive domains, which are knowledge related to composition, procedure, history and appreciation, aesthetics and art in life. The affective domain, on the other hand, is related to values, attitudes, interests, caring, consideration, heritage appreciation and good character. Finally, the psychomotor domain focuses on the development of skills in movement or response that can be formed through teaching and learning activities, improving the quality of coordination between the eyes, hands, muscles and mental. Based on the above statement, students can expand their existing potential through art activities. In fact, human ability to be creative varies with age.

In the process of preparing and releasing creative students to produce an art product, research on teaching and learning processes in schools has been and is being implemented. The research aims to improve the teaching and learning process, so that the resulting students are highly creative and capable of performing well and can benefit from education or information technology. To fulfill this aim, a research was conducted to study and identify the use of multimedia-based learning materials in the study of Visual Arts Education subjects in secondary schools.

According to Mukerjea (1996), human ability of creativity varies with age. Creative ability is very high in childhood, 90 percent of creative ability. However, once a teenager, a person's creative ability drops to 80 percent, to just 10 percent. After that, creativity is relatively low in both adults and adults, just two percent. Learning Visual Arts Education is not just about enhancing skills in its psychomotor domain, it also aims to enhance its cognitive ability by generating a wide range of knowledge that can be learned while pursuing this lesson. On the whole, the maturity of these three domains in the ability to be creative in art is simply to teach to do art rather than to work.

Literature Review

Coperative Learning

These figures have largely explained the meaning of cooperative learning (Slavin, 1982; Johnson, Johnson & Holubec, 1990; Kagan, 1992). In a nutshell, cooperative learning can be defined as teaching methods where students of all levels work together in small groups to achieve common goals. The most important characteristic of cooperative learning is that a student's success will help others to succeed in their learning.

Johnson & Johnson (1999), stated that cooperative learning activities encourage elaborative thinking and increase the frequency of giving and receiving explanations, and thus are believed to have the potential to increase levels of comprehension, quality of reasoning, and improve long-term memory accuracy. The results of their study show that students who are taught in a cooperative way can recall and retain more of the information learned, compared to

students who are competitive and individualistic. In summary, the meta-analysis conducted by Johnson shows that there is strong evidence of cooperative learning on the advantages over other competitive and individualistic approaches, in enhancing student academic achievement.

Further, meaningful learning is a description of the five basic elements that can be used as principles to distinguish cooperative learning activities from ordinary group activities (Johnson, Johnson and Holubec, 1990). These basic elements are (a) positive interdependence, (b) face-to-face interaction, (c) individual accountability, (d) cooperative skills and (e) group processing.

Visual Arts Education Curriculum

Art education is a discipline across the curriculum and can be said to be the basis for other subjects. Students exposed to art education feel more comfortable and confident when dealing with assignments in other subjects, especially those involving creative and critical thinking skills. Visual comprehension is, of course, easier than memorizing facts through jarring notes. Art education is also in line with the concept of lifelong learning which is said to be one of the conditions for facing the 21st century world. Art education is a discipline that applies knowledge with skill. Students learn through the act of creating that can then be extended to learning to be and learning to live together, when it's time to be in the community and the job market. According to Mat Rodzi (2000), before designing a new curriculum or reviewing the existing curriculum, evaluation needs to be made. This evaluation refers to whether to build a new curriculum or to review existing and used curricula. Curriculum evaluation is not an assessment of student performance in relation to the curriculum but it is viewed as an evaluation or measurement of whether the curriculum is designed to achieve its purpose or can be concluded as a useful curriculum and promise great significance to the organization as a whole. However, some ways of evaluating the curriculum may involve measuring student performance.

While according to Iberahim Hassan (2000), the survey conducted among students is part of their perception that art education is not profitable, boring as learning the same thing from secondary school, fun lessons if teachers provide new, no-test and teaching lessons and non-systematic learning . However, the Center for Curriculum Development (2000), on the other hand, emphasized that the aim of the secondary school of Visual Arts was to shape the culture of a culturally literate Malaysian, with high aesthetic values, imagination, critical, creative, innovative and inventive. Smart School is one of seven applications run under the MSC project aimed at furthering the national education system by introducing information technology as one of the components of the teaching and learning environment. The Smart School is equipped with a variety of advanced facilities such as multimedia computers that can help make the learning process more effective and engaging students.

Teachers will also be given training on more creative teaching methods and how to use the technology provided. According to Zoraini Wati Abas (1994), the use of computers has enabled students to develop thinking skills and to improve their knowledge in preparing for the twenty-first century life pattern. Computer Aided Learning (PPBK) has been identified as a resource that can help teachers and students in the classroom improve their knowledge and experience in the subjects they follow. The Ministry of Education is trying to provide courseware materials involving four subjects namely Mathematics, Science, Bahasa Melayu and English to be used by students. The role of teachers is to provide help as facilitators in the classroom.

According to Zoraini Wati Abas (1993), teachers should be aware of the rapid development of information technology towards self-improvement and professionalism. Colleges play an important role in providing training to trained teachers through in-service courses so that

teachers can continue to improve the quality of education in the era of globalized information technology. The development of information technology and the use of computers have huge implications for human life including in the field of education. It helps teachers and students in the process of teaching learning more interesting and interactive. In addition to teaching aids, computers can also be used to speed up management and assessment processes in schools.

Advantages of Computer Aided Teaching

The explosion of information technology and the use of computers has led to widespread use of CMS and Multimedia in the learning and teaching process in other schools and educational institutions. Here are the benefits of Fuel in the form of Computer Aided Learning :

Fun Learning

The teaching and learning process will be more exciting and fun with the combination of several multimedia elements such as graphics, animations, sound and video where these elements will stimulate the student's mind to learn the content of the lesson better and not tedious. In addition, this process will provide the opportunity for students to repeat despite not displaying excellence on the first try, thus the systematic method of instruction helps students to recognize the weaknesses and shortcomings in the assignment as well as work to improve them individually or as a group. Group or cooperative methods in this way can pave the way for the development of more entertaining ideas while challenging their creativity.

Immediate feedback

Students will receive feedback as they do something or ask questions without waiting too long. For example, students will see a score display immediately after answering the questions or quizzes in the software. In this CPS method the students have the opportunity to determine their level of success immediately and return to their due process without waiting for the end result. In addition to saving time, this method is able to provide accurate feedback and maintain work interest and enthusiasm.

Mobile

One of the special features of PBK-based BBM is that it is portable and can be taken anywhere as it is a CD-ROM and is used anytime.

Self Derected learning

A student has the opportunity to control the pace and slow down the learning process to the best of their ability. This can meet the individual learning abilities and needs Learning in this way helps improve students' self-confidence, especially in group learning. The repetitive learning process (CPS) also ensures that students are able to absorb learning outcomes and not be superficial.

High level of interactive

With this software, students can ask and input, and the computer will provide answers or feedback for each action. This will foster the curiosity and questioning of the student.

High and systematic iteration

Using computer aided teaching and learning aids. Students are able to systematically produce and produce products. In this way, students can repeat the work to the level of satisfaction. According to Halim (1998), the development of Visual Arts Education in Malaysia so far has been good. Changes in the culture of past and present learning with the advent of computers are significant. Due to the rapid changes in the use of computers in teaching and learning, Visual Arts Education teachers have to choose and adapt to the media.

Advantages of Teaching and Learning Systematic Methods

Mikovec and Dake (1995) argue that systematic teaching that provides rigorous guidance speeds up skills acquisition and enhances creativity. They found that teaching systematically within a group speeds up and facilitates teaching and learning and gives a positive result. Based on their research, CPS plays an important role in the success of systematic teaching directly. In the near future students will be able to select materials, add materials, manipulate materials and even place materials using CPS.

Creativity

Many studies conducted by researchers on creativity in the education system such as Torrance & Myers (1970), Amabile (1992) and Mihalyi (1996) have found that education plays a minor role in nurturing creative talents. This is according to Wayne (2003), “so much effort has gone towards promoting intelligence”. Even if it does, it is not fully implemented. This problem is not really new and has happened a long time ago. The various ways and approaches have been, are, and will be carried out by the education system but so far it has not been satisfactory. Creativity is a multi-dimensional and inter-disciplinary concept.

In fact, the discipline of creativity has evolved over a century. However, creativity as a specific discipline of science is still relatively new. Creativity is very important in the education world as it can create a creative society and a creative nation. The best place to foster creativity such as inquiry at various levels of students is through learning and teaching; in formal and informal learning. In Malaysia, this creative and innovative human potential is reflected in the National Philosophy of Education and its application in pedagogy and curriculum curriculum (Abd. Rahim, 1999). Blendinger and McGrath (2000) argue that creativity is not influenced by the tools used but is the result of original thinking.

The tool is just an implementer of creativity. Group creativity is based on the level of mental intelligence and skills of the group members. Any equipment must be used according to their skills and will not function on their own. Next, action must be taken to further enhance one's creativity to reach a level of creative thinking outside the box. In addition, to achieve the true result of one's thinking, one has to practice asking the right questions, daring to make assumptions and shifts in creativity

Methodology

The study sample consisted of a Grade 3 student at a national high school in Penang with multimedia computer lab facilities. The study sample selection for both types of presentation method consisted of students of two existing classes (intact). The average age of students is 15 and 16 and comes from a similar socioeconomic background. Both treatment groups consist of Form 3 students who are computer-savvy and have tried other multimedia tools during school computer learning sessions. A total of 60 students were involved in this study. The students are divided into two groups of 30 from each group will follow the teaching and learning independently and the other 30 students will follow the teaching and learning using the systematic method. From each presentation method, students were divided into 6 groups of cooperative groups based on a combination of different levels of creativity.

Procedure Procedures & Data Collection

a) An existing class (intact class) is selected for exposing the DTP infrastructure and systematic teaching and learning.
b) Two weeks before treatment: Student creativity test based on the Torrance Creative Thinking Test (TTCT) is administered. In the context of this study, creativity encompasses certain aspects. Among them is the level of creativity measured using the Torrance Creative Thinking Test, TTCT (Torrance, 1984).
c) Form a group, systematically grouped outlined the steps of CPS, and taught using CPS in the process of producing works of art in the following steps such as defining elements of drawing, framing, processing and so on.
d) Treatment with systematic presentation mode and 1 minute 20 minute free presentation for three consecutive weeks.
e) Immediately after the preparation of teaching, the following assignments are given: (i) Tasks illustrate a free-themed poem. The assignment is an assessment of a pre-test scoring score. The assignment will be administered based on the Torrance Creative Thinking Test Scoring Score in the evaluation of three activities.

Findings

a) Group Equality

Torrance's overall creativity test scores were analyzed to check whether the student group was equivalent before treatment. Table 1.1 reports the mean of the pre-test test scores, which is the group of independent methods reporting the mean 46.90. with a standard deviation of 14.28 while a group of systematic methodologies reported a mean of 49.57 and a standard deviation of 14.57. The t tests on these minima gave $t = -0.724$ at $p = 0.47$ (Table 1.1). Given a $p > 0.05$ value, this finding indicates that there were no significant differences between the two groups. This test shows that these groups are equivalent.

Table 1.1: Mean, Standard deviation and Test results for the Torrance Creativity Score.

	Independent method			Systematic Methods of Interaction			
	Mean	SD	n	Mean	SD	n	p
Pre	46.90	14.28	30	49.57	14.24	30	t = -0.72 p = 0.47

**Significant level p = 0.001*

b) Hypothesis 1

$H_0$1: There were no significant differences between the performance of the systematic method group and the independent method group according to the overall creativity score.

Table 1.2 reports the mean of the overall creativity test scores of this study, the independent method group shows mean of 34.43 with standard deviation 6.68 while the systematic method group reported mean of 34.14 with standard deviation 10.31. The t-test of these means gives t = -1.81 at p = 0.75 (Table 11.2). Given a value of p> 0.05, the null hypothesis 1 is accepted. This analysis shows that the grouping of systematic methodologies results in equal performance, both of which are as good as the overall creativity score in the group.

Table 1.2 Min, Standard Deviation and Test Results for the Group Overall Creativity Score by Method.

	Independent method			Systematic Methods of Interaction			
	Mean	SD	n	Mean	SD	n	p
Overal creativity	34.43	6.68	30	34.14	10.31	30	t = -1.81 p = 0.75

*Significant level p = 0.001

Hypothesis 2

$H_0$2: There is no significant difference between the performance of the systematic method grouping and the group of independent methods according to the components of creativity a) smoothness, b) originality, c) decomposition, and d) individual level of creativity.

Table 1.3 reports the mean test scores according to the creativity components for both groups. For the creativity component, the independent group reported mean 5.43 with standard deviation 2.71 for fluency, mean 7.03 with standard deviation 3.31 for originality, mean 4.80 with standard deviation 1.70 for paraphrase, and mean 7.77 with standard deviation 3.61 for creativity level. The group of systematic methods reported mean 4.73 with standard deviation 1.72 for fluency, mean 6.23 with standard deviation 2.11 for originality, mean 3.33 with standard deviation 1.42 for description, and mean 8.00 with standard deviation 3.54 for level of creativity. The t tests of these minima give a) t = 1.19 at p = 0.24 for smoothness, b) t = 1.11 at p = 0.27 for originality, c) t = 3.64 at p = 0.00 for decomposition, and d) t = - 0.22 at p = 0.83 for the level of creativity (Table 1.3). Given the p> 0.05 values of the components of creativity, originality, and level of creativity, Hypotheses Null 4 (a), (b) and (d) are accepted. For the decomposition creativity component, p value <0.05 then Hypothesis Zero 2 (c) is rejected. These findings suggest that systematic methods of coordination improve the performance of decomposition creativity components according to individual scores.

Table 1.3: Mean, Standard deviation and Test Results for the Individual Component Creativity Component Scores by Method.

Creativity component	Independent method			Systematic Methods of Interaction			
	Mean	SD	n	Mean	SD	n	p
Kelancaran	5.43	2.71	30	4.73	1.72	30	t = 1.19 p = 0.24
Originality	7.03	3.32	30	6.23	2.11	30	t = 1.11 p = 0.27
Description	7.43	4.80	30	8.10	3.33	30	t = 3.64 p = 0.00*
Creativity level	11.67	7.77	30	12.67	8.00	30	t = -0.22 p = 0.83

*Significant level p = 0.001

The findings show that:

a) The systematic methodology is similar to the independent method based on the overall creativity score according to the group score.
b) The systematic method is based on improving the performance of the decomposition creativity component according to individual scores.

Creativity performance by group:

a) The systematic methodology is similar to the independent method based on the overall creativity score according to the group score.

b) The systematic method is based on improving the performance of the decomposition creativity component according to individual scores.

Creativity performance by group:

The findings of this study show that performance in the task of illustrating a poem based on the overall score of the groups between the two methods is the same even though their mean is different. This finding contradicts the findings of Mikovec and Dake (1995) who suggest that systematic teaching that provides rigorous guidance speeds up skills acquisition and enhances creativity. However, the findings of this study are in line with the findings of Blendinger and McGrath (2000) who say that creativity is not influenced by the tools used but is the result of original thinking. The tool is just an implementer of creativity. Group creativity is based on the level of mental intelligence and skills of the group members. Any equipment must be used according to their skills and will not function on their own. The overall similarity of creativity performance is also due to the fact that both groups of students have implemented CPS model steps in producing their artwork. The CPS model ensures that each group goes through regular and creative implementation steps.

Equality in performance is also due to the contribution of group members that enhances overall performance as described by Johnson & Johnson (1999). One effect of teamwork is that students who are less capable are more likely to be influenced and follow the contribution of ideas from their more talented members or peers, which exemplifies the impact of each member of the group. It is possible that students with low creativity are hiding behind students or members of high-creativity groups. This equality is also obtained because the time allotted for DTP and CPS study is too short. Different performance may result in extended learning period.

Group performance analysis by creativity component gives equal performance to components of smoothness and decomposition. However, the performance of grouped systematic methods is significantly improved in the originality and creativity components of the control group. The improved performance of the systematic method group in the components of originality and level of creativity can be explained by the DTP's sophisticated features that offer a standard and detailed compositional scope but allow students to make continuous improvements in CPS steps. By using the DTP software students actually repeat the CPS processes over and over again resulting in original and creative work. The process of improving and modifying using DTP is easier and more interesting for students as it is a computer game rather than a tedious manual job. In addition, DTP can save students time even if they have to make repeated modifications. This is because the editing process is simple by simply pressing the key. Students are free to go through the CPS processes once and for all when they are unable to make any major improvements during their middle and final years. The improvement in performance was also due to the input from the group partners.

Group performance analysis by creativity component gives equal performance to components of smoothness and decomposition. However, the performance of grouped systematic methods is significantly improved in the originality and creativity components of the control group. The improved performance of the systematic method group in the components of originality and level of creativity can be explained by the DTP's sophisticated features that offer a standard and detailed compositional scope but allow students to make continuous improvements in CPS steps. By using the DTP software students actually repeat the CPS processes over and over again resulting in original and creative work. The process of improving and modifying using DTP is easier and more interesting for students as it is a computer game rather than a tedious manual job. In addition, DTP can save students time even if they have to make repeated modifications. This is because the editing process is simple by simply pressing the key. Students are free to go through the CPS processes once and for all when they are unable

to make any major improvements during their middle and final years. The improvement in performance was also due to the input from the group partners.

This finding suggests that the use of CPS-based and DPS-based software is appropriate in helping students visualize higher yields and higher levels of creativity.

Individual creativity performance:

The performance of both groups on the basis of overall creativity scores was low and equal. That is, both methods do not help in enhancing creativity individually. This finding is in conflict with studies involving multimedia in learning such as Halim (1998) who found that multimedia methods are better in teaching techniques. According to McInerney & McInerney (1994), there are definitions of creativity that emphasize personality traits, some that focus on thought processes and others that emphasize effort as a criterion for creativity. The process of thinking in the arts can be refined by using flexible template methods as well as enabling students to complete their assignment of experimentation or test of fit as carried out in a systematic method.

This results in low creativity scores. The overall similarity of creativity performance is also due to the fact that both groups of students have implemented CPS model steps in producing their artwork. The CPS model has ensured that individuals go through regular and creative implementation steps. Equality in performance is also due to the contribution of ideas individually without the help of anyone. One effect of working individually on this assignment was that students were influenced by the ideas of the group members or their more experienced peers in group activities. This equality is also obtained because the time allotted for DTP and CPS study is too short. Different performance may result in extended learning period. Individual performance analysis based on creative component scores gives equal performance on all dimensions except decomposition.

Students of the systematic method group performed significantly better than the independent method group students. Students of a systematic methodological group of students have been able to make visualization more flexible and concrete through the 'reviewable' layout facilities before the final results are decided. Students will be able to make the minimum focus and the need to respond to the diagram. Control group students only use static elements in visualization and final layout. The enhanced performance of the DTP indices in the decomposition component can be explained by the DTP software features that offer standard and detailed compositions but allow students to make improvements according to the students' creativity in CPS steps. By using the DTP software students actually repeat the CPS processes over and over again to produce the work in the best possible level. Independent learners only go through the CPS processes once in a while, as they are unable to make any major improvements during the middle and final stages. The improvement in performance was also due to the input from peers during past group activities as a guide for individual students working individually.

Conclusion

The CPS method with DTP which provides guidance and iterative facilities for each step of the artwork has helped to enhance the student's creativity in several components of the art creativity. Due to the short duration of this study, it is recommended that this study be extended for a longer period. Also suggested is a systematic methodology based on CPS and DTP used in teaching Art Education in schools.

Limitation and further direction:

There are several limitations to conducting this research. Among them is a sample of only male students, which means that these findings cannot be passed directly to female students. In addition, the student age range is 14 to 16 years so this study is not suitable for primary and secondary schools. In addition, the study period is only one month. Thus, different findings may be obtained if the study period is extended.

This study covers only a third-grade student at a particular school in Penang. Therefore, the findings of this study may not reflect the relevance of grades and schools in other districts. This study focuses on a few topics. Therefore, the results of this study may not reflect the relevance of the topics or topics in the Visual Arts Education subject. Selected topics are from the lower secondary level Visual Arts Education syllabus only. Therefore, the findings of this study may not be generalizable to the whole subject of Visual Arts Education at other levels. Therefore, it is proposed that this study be conducted involving male and female students of various ages and use longer treatment periods. In addition, it also extends its research at other regional levels as well. This study also needs to diversify the topics covered in the Visual Arts Education subject. Next, choose the Visual Arts Education syllabus at all levels.

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