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Nature exquisiteness based digital photography arts project for creativity enhancement among low achievers students. (PROSFD[ak])

Siti Nuur Adha Mohd Sanif*, Zaharah Hussin, Fatiha Senom, Saedah Siraj & Abu Talib Putih

Department of Educational Foundations & Humanities, Faculty of Education,University of Malaya,50603 Kuala Lumpur, Malaysia

Abstract

This study was conducted to examine the effectiveness of project-based learning in digital photography for creativity enhancement among a group of low achievers students in a secondary vocational school. Drawing on the Isman Instructional Design Model as the module design process, this study employed a quasi-experimental method. A group of 40 low achiever students were selected as sample of a single case study design in this study and it was conducted in 16 R & D sessions within 3 weeks. Researchers modified the project module PROSFak using the modules of Curriculum Plan; picturing Peace: Creative Digital Photography Project by ArtsBridge. The implications of the study for the Ministry of Education (MOE), teachers and students were also discussed.

Keywords: Photography digital, creativity, project based-learning, Isman instructional design model, quasi-experimental

1. Introduction

Nature exquisiteness based digital photography arts project (PROSFD[ak]) is a project-based learning that is design aptly to suit the need of vocational secondary school students who have difficulties in academic learning. Using digital cameras, students are able to produce works of photography to express the value and beauty of the environment. This art project is potentially powerful in attracting and motivating students who have less focus on the conventional teaching and learning activities in schools.

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* Corresponding author. Tel.: +6-012-692-5345; fax: +603-7956 5506.
E-mail address: nuuradha@um.edu.my

The purpose of PROSFD[ak] is to facilitate students in developing skills and competencies on information and technology, such as basic skills and skills of the digital age in order to equip them to face a better future (Chan, 2010). In addition, this project-based learning assists students to understand and apply the knowledge in their own field. Through these skills, students are able to manage their learning independently and in more effective ways. Furthermore, PROSFD[ak] is able to build students' awareness of environmental conservation through encouragement on aesthetic appreciation of beauty of nature.

Photography is the process of producing images by the action of light or image using the tools; recorder, which is recognized as a camera. As a technique, photography was first introduced in 1839 with the invention of the daguerreotype by Louis-Jacques-Mande Daguerre (Mary, 2010). The original term words of photography was from British, photography is a use from two Greek words, namely *phos* mean light and *graphic* mean painting brush, or *graphe* which brings meaning 'painting with light' (John Ingledew, 2005). This implies painting with light is to understand the stem of photography.

Today, the growing technologies changed film photography to digital photography with first digital cameras production in 1981 by Sony Mavica and Kodak in 1991. Nowadays, the use of a digital camera is to use electronics to record light rather than using light sensitive paper and exposing the paper to sunlight (Mary, 2010). Before photography exists, the medium of communication is through imagination and existing experience. Photographic documentation of the ingredients should be easy, fun and makes a story easily understood. A professional photographer, Joseph Meehan (2008) says the content of photography may bring a story, make a fact, convey feelings, control atmosphere with a more expressive power than the dramatic results of digital imaging use technology today. What we understand is that there are traits in photography from the aspect of the delivery of notice, as if it has been equalled, even rivalling delivery system that uses text.

Digital photography is one of the visual culture elements that is based on visual media such as images, sculptured and art of dance. Since the 18th century, photography has become a medium to capture image as memory and the proof of existing (Sontag, 1977). Photography communicates through images, various information and meanings may be found in a picture. Mary (2010) argues that a photographer uses the medium to inspire or to elicit information for record storage, journalism, and scientific documentation.

Photography has the potential to assist students' learning particularly in spurring their interest to learn. This is because, unlike the conventional learning tools, the images or subject was made directly through slides, film and another visual tools via photography (Mitchell & Weber, 1999). Photography also teaches students ethics and experiences through pictures such as pictures depicting the battle of remorse, cruelty, fear and human civilization. The words that we often hear; "a picture tells a thousand stories."

In 2000, the Malaysian Ministry of Education released a circular letter of the promotion of photography activities among school children. The purpose of the promotion of photography activities among school pupils is to make room for the pupils in the school to develop their potentials in a holistic and integrated manner to produce individuals who are intellectually, spiritually, emotionally and physically balanced. Guided by the circular letter, the researcher uses photography as a subject of learning to encourage students' creative work in appreciation of art education.

PROSFDak enhances students' understanding and achievement in terms of learning basic digital photography techniques, elements of design, discussion and understanding of pictures through digital photography module guides. Therefore, the present study investigates the impacts of PROSFD[ak] on the understanding and achievement of low achiever students on arts and creativity.

Through this digital photography arts project, students can communicate through pictures as a non-verbal communication. With non-verbal communication, the meaning from the messenger can be easily understood by the recipients (Hashim, Mohammed Isaac and David, 2009). In this project, the students will go through several processes namely understanding, interest, desire, individual sensitivity, communication skills and ethical responsibility. This project also will attract students to understand and have interest in Visual Arts Education, as where exciting learning frameworks will be highlighted to attract students in arts education session. This is aligned with the learning of Visual Communication; Graphic Design, Posters, Music, Logo and Mascot,

Calligraphy, Typography, Packaging, Environmental Graphics, Illustration, Computer Graphics, and Multimedia in KBSM Visual Arts syllabuses (2006).

Arts education encourages students to explore various mediums, use their imagination and take a risks in intellectually, forming visual intelligence, engage in self-instructional projects, explore the symbolic function in art, have dialogue with others about the creative process and the results of their work, and build self assessment skills (Cromwell, 2000). Other benefits of arts education is to appreciate nature, appreciate the grace of God, sharpen the mind, good emotions shape, and build multi-sensory skills (Ghazie Ahmed Hashim Osman Ibrahim, 2007). Therefore, nature exquisiteness is chosen as a theme for this digital photography project.

Aminudin (2004) argues that students who are active in extra-curricular activities are more likely to have good academic achievement. Thus, participation in PROSFDak could encourage low academic achieving students to be active in extra-curricular activities. Activities participated by the students will not have a negative impact on their academic achievement. Co-curricular activities are aimed to diversifying the knowledge and experience to intellectual development of students, talents, body and also to development student leadership, aesthetic value, self-esteem and positive social values (the National Education Policy, Ministry of Education, 2012). Arts Education will produce students who are independent, develop students' talents, able to express their views, practice good values in society and realize the career opportunities in the arts field.

2. The Aim of Research

The aim of this research is to enhance creativity among a group of low achievers students and to determine students' creativity and interest in the field of digital photography. The study also aims to investigate the impact of PROSFDak on the academic achievement of students' technical skills through the examination of test scores, literacy and oral language skills. By focusing on the lack in literature, photography technical gives potential and benefit to art education specifically for social aspects to ensure the effectiveness in students' development and learning in school life (Albertson & Davidson, 2007). This study will use some aspects of photography for students to learn as process and practice approaches in teaching studio environment, cultural and historical context to understand art and photography. This study also uses design process by employing the Isman instructional design model for teaching and learning.

To achieve this aim, the researchers have set four research objectives. The first objective is to investigate to what extent the project-based learning in digital photography is effective in enhancing creativity among a group of low achievers students. The second objective is to examine possible differences in terms of creativity in the production of works of art in nature exquisiteness based digital photography arts project from boys and girls. The third objective is to find to what extent the nature exquisiteness based digital photography arts project is effective in cultivating students' interest in art education. The fourth objective is to investigate possible significant differences in students' ability to create images using creative imagination by pre and post-activities design.

3. Significance of the Study

Guided by the goal of art education, the findings of the study will manure and shape the younger generation understanding in culture, have high aesthetic values, to be imaginative, critical, creative, innovative and inventive. These also contribute to the development of self, community and nation to meet the government's intention to provide an educational career path more clearly to students. To achieve this, the government proposes to rebrand vocational secondary schools to vocational colleges. Not only that, this transformation also involves changes in technical and vocational curriculum, the learning, the certification, trainers, and infrastructures. The result of the study can also be used by educators to improve the technical and vocational education in development pupils' creativity through Vocational and Technical Transformation (VOCTEC) on technical schools and vocational schools in Malaysia.

4. Scope and Limitations

In this study, a group of 40 students in a vocational secondary school in the state of Johor was randomly selected. This study was conducted over 16 sessions of teaching and learning activities, and 3 weeks to allow 8 measurements, there are 2 sessions for each measurement for the completion of this entire lesson plan.

5. Instruments

Researchers used two instruments in this study; questionnaires and rubric assessments. Questionnaires are used for identifying students' achievement and information related to the art of digital photography and the effects of PROSFD[ak] learning module. Researchers used Likerts scale, interpretation of Cronbach Alpha (α) to measure the reliability of the items and questionnaires. The instruments were administered to 40 form four technical students. The second instrument is a Rubric assessments form used for Pre-activity and Post-activity. The rubric of students' creativity measurement is based on photographic basic technique and composition principles of digital photography. This rubric is used by researchers as a process to determine, obtain, and provide useful information for researchers to make judgments about further action (Siti Hayati, 2011). Rubric assessment that is used as a system or process covers the activities of gathering information about the strategies and teaching and learning activities for researchers to analyze and decide accordingly to plan activities more effectively. To determine the validity of the content in the rubric of pre- activity and post-activities, three experts in the field of art and photography education validated an instrument that was adapted and built.

The teaching and learning of this single treatment group is done through both indoor and outdoor classes using the PROSFD[ak] project module which was modified from Curriculum Plan; picturing Peace: Creative Digital Photography Project by ArtsBridge (2005). Researchers used method of discussion, practical and technical skills, problem solving skills, as well as medium and appropriate instructional media research. Researchers make a full use of media and technology equipment such as digital cameras, flash-lights, computers, software editing Photoshop, lighting and studio equipment.

6. Theoretical Framework

Isman Model

This study employs the Isman Model to formulate PROSFD[ak] module in teaching and learning activities to enhance creativity among low achieving students. The major goal of Isman model is to plan, develop, implement, evaluate, and organize fully learning activities to ensure the effectiveness of PROSFD[ak] module in improving students' performance (Isman, 2011). This model is designed to store information into long-term memory and respond to the form of environmental conditions to motivate students through active experience and contents.

The Isman model was also used and implemented in a study by Norlidah, Saedah, Mohd Khairul Azman & Zaharah (2013) on the effectiveness of Facebook based learning in enhancing creativity among Islamic Studies students in the secondary educational setting in Malaysian. The findings of the study suggest that there were significant differences between the treatment group and the control group, which imply that Facebook based learning, has enhanced students' creativity level in writing, problem solving and producing missionary motto.

The Isman module was also used in a study by Norlidah & Saedah (2012) on designing and developing a Physics module based on learning style and appropriate technology in the secondary educational setting in Malaysia. The researcher conducted the module evaluation among 120 participants involving 30 participants of each learning style (visual/verbal, active/reflective). The results suggested that the module is effective for visual, active and reflective but not for verbal learners. The researcher also compared the module effectiveness according to gender and it is found that the module is effective for female learners but not for male learners in verbal. The findings of the research indicate that the Isman model was implemented successfully in designing and developing a Physics module based on learning style and appropriate technology in secondary educational setting in Malaysia. Hence, in the present study, the researchers aim to employ the Isman model in nature exquisiteness based digital photography arts project for creativity enhancement among low achievers students (PROSFD[ak]) and to test the effectiveness of the module. The Isman instructional design model is described in a

five-step systematic planning process. These are input, process, output, feedback and learning as shown in Figure 1. The researchers aim to test the effectiveness of the Isman model in nature exquisiteness based digital photography arts project for creativity enhancement among low achievers students (PROSFD[ak]) as shown in table 1.
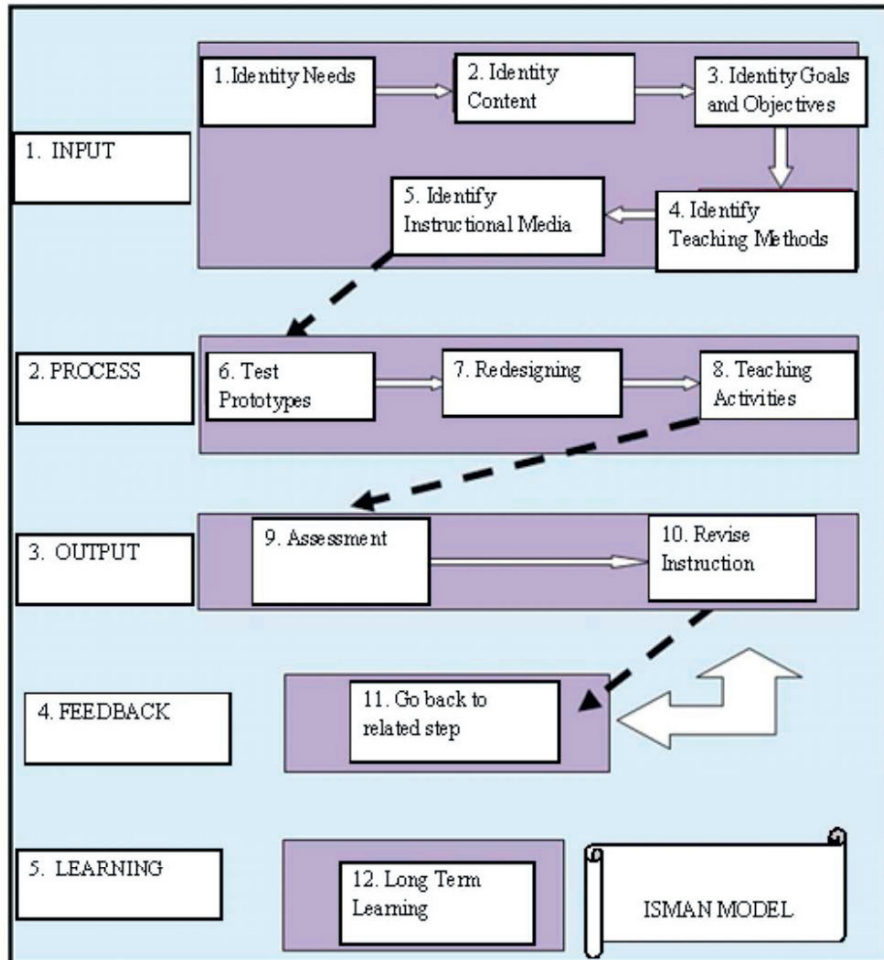

Figure 1: Isman Instructional Design Model (Isman, 2011, p.139)

Table 1
The use of Isman model to design and develop the effectiveness of the Isman model in nature exquisiteness based digital photography arts project for creativity enhancement among low achievers students (PROSFD[ak]).

Steps	Work log	Descriptions
Step 1 Input	Identify needs Identify contents Identify goals-objectives Identify teaching method Identify evaluation materials Identify instructional media	Designing module based on exquisiteness based digital photography arts project for creativity enhancement among low achievers students (PROSFD[ak]).
Step 2 Process	Redesigning of rubric assessments.	Using validity and expert panel to redesign the PROSFD[ak] module for creativity enhancement among low achievers students.
Step 3 Output	Rubric post-activity Analyze results	Measured and analyze finding PROSFD[ak] module based on model *Picturing Peace* by ArtsBridge. Lesson from PROSFD[ak] module for creativity enhancement among low achievers students and teacher also.
Step 4 Feedback	Examine	Examine rubric finding analysis: 1) Pre-activities rubric 2) Implementation of real R & D 3) Post-activities rubric 4) Measurement
Step 5 Learning	Learning and teaching process R & D Teaching PROSFD[ak] modules	Pre-and post-activities have been conducted to test the effectiveness of PROSFD[ak] learning modules to enhance creativity among low achievers students.

7. Findings and Discussion

The effectiveness of nature exquisiteness based digital photography arts project for creativity enhancement among low achievers students (PROSFD[ak]) was analyzed based on early finding from pre-activities and post-activities of PROSFD[ak] learning modules. The result of the post-activities shows that average creativity level score are 40. After the treatment of PROSFD[AK] module lesson, data from post-activities were analyzed by comparing mean achievement score between the pre-activities and post-activities. The independent sample *t*-test was performed to trace if there exists any enhancement in creativity level after treatment. The results show that there is significant enhancement in creativity level after treatment. Next, the researchers compared the creativity in production artwork according to gender and effectiveness of digital photography arts project in students' interest for art education. The module suggests that was no difference for enhancing creativity in producing art works between of both genders.

The effectiveness of PROSFD[ak] module based learning in enhancing creativity among low achievers students also analyzed across creativity level in post-activities. A *t*-test was performed to determine if there were significant differences in ability to create images using creative imagination before and after the learning of PROSFD[ak] modules. Findings from the experiment conducted among 40 participants suggest that PROSFD[ak] module based learning has enhanced creativity level among low achievers students. Table 2 to Table 5 show the results of t-test comparison of pre/post-activities towards across enhance creativity level used PROSFD[ak] learning modules.

Findings from experiment conducted among 40 participants in the single group suggest the effectiveness of nature exquisiteness based digital photography arts project for creativity enhancement among low achievers students (PROSFD[ak]).

Table 2
t-test Comparison of Pre-Activities and Post-Activities Achievement in Creativity used PROSFD[ak] Module Lesson

Group	n	Mean	SD	*t*	Significance Value
Pre-Activities	40	19.3	4.5	-14.97	.05
Post-Activities	40	39.1	7.2		

Table 2 shows that the pre-activities mean score for achievement (n = 40) is 19.3 (*SD* = 4.5), while post-activities (n = 40) is 39.1 (*SD* = 7.2). The difference in mean score between pre-activities and post-activities is 19.8. This indicates that PROSFD[ak] module lesson is able to increase achievement in creativity among low achieving students. Hence, there is significantly higher score with value $t(78) = -14.97$, $p < .05$. The finding shows that the null hypothesis is rejected. Therefore there is a significant difference in creativity achievement used PROSFD[ak] module lesson.

Table 3
t-test Comparison of Post-Activities Achievement in Creativity production artwork by gender

Group	n	Mean	SD	*t*	Significance Value
Male	19	41.2	7.4	1.78	.05
Female	21	37.2	6.7		

Table 3 shows that post-activities achievements mean score for creativity production artwork by gender male (n = 19) is 41.2 (*SD* = 7.4), while gender female (n = 21) is 37.2 (*SD* = 6.7). The different in mean score between gender male and female is 4. This indicates that PROSFD[ak] module lesson is able to increase achievement in product creativity artwork among low achieving students. Hence, there has higher significantly score with value $t(38) = 1.78$, $p < .05$. The finding shows that the null hypothesis is accepted. Therefore there is a no significant difference in creativity achievement production artwork by gender.

Table 4
t-test Comparison of Post-Activities toward Interest in Art Education

Group	n	Mean	SD	*t*	Significance Value
Post-Activities	40	39.1	7.2	30.4	.05
Interest in art education	40	4.4	0.6		

Table 4 shows that the post-activities mean score for achievement (n = 40) is 39.1 (*SD* = 7.2), while interest in art education (n = 40) is 4.4 (*SD* = 0.6). The difference in mean score between post-activities and interest in art

education is 34.7. This indicates that PROSFD[ak] module lesson is able to increase interest in art education among low achieving students. Hence, there is significantly higher score with value $t(78) = 30.4$, $p <.05$.The finding shows that the null hypothesis is rejected. Therefore there is a significant difference in post-activities and interest in art education.

Table 5

t-test Comparison of Pre-Activities and Post-Activities Achievement in Ability to Create Creativity used PROSFD[ak] Module Learning

Group	n	Mean	SD	*t*	Significance Value
Pre-Activities	40	19.3	4.5	-14.97	.05
Post-Activities	40	39.1	7.2		

Table 5 shows that the pre-activities mean score for achievement (n = 40) is 19.3 (*SD* = 4.5), while post-activities (n = 40) is 39.1 (*SD* = 7.2). The difference in mean score between pre-activities and post-activities is 19.8. This indicates that PROSFD[ak] module lesson is able to increase students' ability to create creative imagination using PROSFD[ak] module learning among low achieving students. Hence, there is significantly higher score with value $t(78) = -14.97$, $p <.05$.The finding shows that the null hypotesis is rejected. Therefore there is a significant difference in ability to create creative imagination using PROSFD[ak] module learning.

8. Implication and Conclusions

This paper has examined the nature exquisiteness based digital photography arts project for creativity enhancement among low achievers students (PROSFD[ak]) by employing the Isman model. The effectiveness of the modules was tested and it was found that the module was effective for low achievers students. In addition, it was found that the three null hypotheses were rejected because there were significant differences in achievement between pre-activities and post-activities using the PROSFD[ak] module learning. The outcome of this study will hopefully enhance the process of teaching and learning in art education particularly in vocational secondary school through the promotion of the use of photography lesson to enhance creativity among students and for career opportunities in the arts field.

Acknowledgements

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