http://www.eab.org.tr

Educational Research Association
The International Journal of
Educational Researchers 2020,
12(4): 1-8
ISSN: 1308-9501

http://ijer.eab.org.tr

21st Century Teaching Strategies and Students Preferences

Rael Christopher PLAZA[1]

Abstract

The integration of technology in education has significant impact in the teaching-learning process. This study determined the student's learning in Social Studies subject using technology-based instructional tools such as PowerPoint Presentation and Computer Aided Instructional Material (CAIM). Three (3) classes from different secondary schools were the subjects of this study. Each class/group was taught separately, first by using PowerPoint Presentation and then CAIM. A pre-tests-post-tests experimental design was utilized in finding the results of the study. It revealed that there was an increase in the mean scores of the students in the two teaching strategies. Analyses showed that PowerPoint Presentation has higher students learning outcome than CAIM. Although, CAIM is the majority preference of the students, but they perform better in the PowerPoint Presentation. The study concluded that there is a positive students' learning outcome using PowerPoint Presentation and CAIM; however, these strategies should undergo systematic process for planning, designing and formative evaluation to assure excellent impact in teaching-learning process particularly in Social Studies subject.

Keywords: Computer-Aided Instructional Material, Powerpoint Presentation, Computer Technology

[1] Dr, Surigao Del Sur State University, Philippines, ORCID ID: 0000-0002-9478-2781

Correspondence: plaza.raelchristopher@gmail.com

Introduction

Many of the students now are exposed to the use of computers and other gadgets due to modernization. Thus, their learning preference is related to the use of technology. Consequently, this study is a comparative evaluation between the use of PowerPoint Presentation and Computer-Aided Instructional Material (CAIM) in teaching Social Studies subject in secondary level.

Studies have been conducted to test the effectiveness of technology-based instruction like the use of PowerPoint Presentation and CAIM. Abante (2006) found out that the use of Computer-Aided Instructional Materials is an effective alternative approach in teaching. In the study of Cadongonan (2004) students viewed the use of PowerPoint presentation positively. The students learned better (Ozaslan and Maden, 2013) if the course materials are appealing to their attention. This is also in consonance with Corbeil's (2007) study which found out that students preferred the PowerPoint presentations over textbook presentations. However, no literature or studies yet are found to determine how the two strategies: PowerPoint Presentation and CAIM differ in their effect to the learning of the students. It is also interesting to know if the students' preferences have significant relationship to their learning.

This study would be an input to teachers who are integrating ICT in teaching. This would give them an idea of what technology based strategy should be used, when to use them and how much dependence should be given to the use of technology in teaching.

Numerous studies over the years have shown that interactive multimedia learning takes less time, is enjoyed more and increasing learning. In a review of numerous meta-analysis studies found that "learning was higher when information was presented via computer-based multimedia system than traditional classroom lectures". Interactive learning with live – action video, audio, graphics, feedback, expert advice, and questions and answers keep learners interested and reinforces skills. Because it is exciting, challenging and fun to use, it encourages learners to return to the program again and again. Through continual practice learning is absorbed and integrated into daily performance (Hick, 1997).

The Department of Education designed the DepEd ICT4E Strategic Plan which identifies the role of Information and Communication Technology (ICT) in Philippine education. It is to revitalize the public and private schools to make them into dynamic, collaborative and innovative learning institutions where students can become more motivated, inquisitive and creative learners. It will help the students to link up with the vast networked world of knowledge information. This enables them to acquire a broad knowledge and a global outlook. Furthermore, it provides them with the resources for the development of a creative mind, and the development of skills and capabilities to critically and intelligently seek, absorb, analyze, manage and present information. They will also be able to create new knowledge and products. Moreover, develop the students' habits of self-learning to nurture the attitude and capability for lifelong learning (DepEd, 2013).

Statement of the Problem

This study determined the students' learning in Social Studies using technology-based instructional tools such as PowerPoint Presentation and Computer Aided Instructional Material (CAIM) and its relationship to their preferred strategy. Specifically, this study sought to answer the following:

1. What are the Pre-Test and Post-Test mean scores of the students using the PowerPoint Presentation and CAIM in three (3) respondent schools?
2. Is there a significant difference between the use of PowerPoint Presentation and

CAIM among the students in three (3) schools?
3. What is the preferred teaching strategy of the students in the three (3) schools?
4. Is there a significant relationship between the students' preferred teaching strategy and their learning scores?

Research Design

The researcher utilized the pretest-posttest experimental design in finding the results of the study. A pre-test observation of the dependent variables was made before implementation of the treatment to the selected group, the treatment was administered and finally a post-test observation of dependent variables was carried out to assess the effect of treatment on the group.

Research Environment

The study was conducted in three (3) public schools of Division of Surigao del Sur, namely: Cantilan National High School, Carrascal National High School and Madrid National High School. These schools are the largest secondary schools in their municipality. They were chosen considering that they have the computer facilities and their students were exposed to the use of computers and internet.

Subjects of the Study

The subjects of the study were the Grade 9 students of Cantilan National High School, Carrascal National High School and Madrid National High School. Only one (1) section was selected from the participating schools. They were under heterogeneous group of students to ensure objective results of the study. Table 1 shows the number of the subjects in the study, where Madrid National High Schools had the higher number of students.

Table 1. Distribution of the Subjects of the Study

Schools	No. of Subjects
Cantilan National High School	34
Carrascal National High School	36
Madrid National High School	41
Total	**111**

Technology-Based Instruction Validation

All the teaching materials used in this study together with the questionnaires for pre-test and post-test were subjected to validation before the implementation.

A validated PowerPoint Presentation used in the study was examined and validated by eight (8) experts. The five (5) experts assessed the framework of the presentation and the other three (3) evaluated the content of the topic about "Ang Sina-unang Sibilisasyon sa Mesopotamia" (The Ancient Civilization in Mesopotamia).

The other technology-based instructional tool was CAIM. This was validated also by eight (8) experts, five (5) of them concentrated on the technical elements of CAIM and the other three (3) focused on the content area of the topic about "Ang Sina-unang Sibilisasyon sa Greece" (The Ancient Civilization in Greece).

Another validation was also done with the questionnaires for pre-test and post-test on

two selected topics. These were validated by three (3) content experts in social studies subject.

Data Gathering Procedure

Letter request for approval on the conduct of the study was sent to the following schools; Cantilan National High School, Carrascal National High School, and Madrid National High School.

Technology-Based Instructions were personally administered by the researcher to the participants. It was conducted at the computer laboratory of the three (3) school area.

Teaching using PowerPoint Presentation was first conducted. The pre-test was given before the presentation and post-test was then facilitated. The researcher did a lecture on the first topic using PowerPoint Presentation. The participants/students listened and interacted with the teacher during the class discussion. The lecture ended exactly an hour.

Facilitating the same group of students in the afternoon, another topic of the same level of difficulty as supported and confirmed by experts in the field was given to the participants/students. The CAIM was used without the teacher/researcher giving the lecture. The students were given an hour to finish their independent learning. Afterwards, a post-test was also given to them since the pre-test was already administered before the activity started.

After the two strategies were administered, the students were asked to identify which of the two is their preferred teaching strategy.

Results and Discussions

Table 2 presents the findings in the three respondent-schools on the use of PowerPoint Presentation and CAIM. There is an increase in the mean scores of students in the two teaching strategies as reflected in the post-tests of the two strategies.

Table 2. The Students' Mean Scores during the Pre-Tests and Post-Tests

Schools	**Teaching Strategies**			
	PowerPoint Presentation		**CAIM**	
	PRE-TEST	POST-TEST	PRE-TEST	POST-TEST
A	6.909	11.515	5.212	7.515
B	9.146	13.024	8.463	11.439
C	6.083	11.528	5.639	7.667

The average mean scores of PowerPoint Presentation increases to 12.022 from 7.379 while the students' average mean scores in CAIM increases to 8.874 from 6.438. This implied that students have learned in both strategies used.

The result of the study conforms to the study of Lari (2014), that teaching based on the use of technology had a significant positive effect on learners' scores. He implied that technology-based lessons are powerful pedagogical tool that operates and promotes students' motivation towards learning. This is further seconded by Ozaslan & Maden (2013) that a student learned better if the course material was presented through some visual tools. Consequently, Stepp-Greany (2002) mentioned a number of benefits for students related to

the use of technology in classrooms such as; increased motivation, improvement in self-concept and mastery of basic skills, more students-centered learning and engagement in the learning process.

Table 3 underscores the findings on the significant difference in the students' mean scores when subjected to both PowerPoint Presentation and CAIM.

Table 3. The Significance of Difference in the Students' means scores using ANCOVA

Schools	**F-computed**	**F-critical @ α = 0.05**	**Decisions**
A	11.556	4.17	Significant
B	5.3594	4.08	Significant
C	22.063	4.08	Significant

It shows that the F-computed of the students in three (3) respondents' schools with an average computation of 12.993 is greater than the value of F at an average computation of 4.11, showing that there is significant difference of the two method. This means that PowerPoint Presentation has higher students learning outcome than CAIM.

CAIM is nearly like a computer game software application where the students can independently manipulate their lessons in the computer. Although, it has interesting effects that could gain attention to the students it has still gap on the presence of actual teaching discussion. On the other hand, teaching using PowerPoint Presentation is an actual classroom discussion with the presence of the teacher. In this case, the teacher could elaborate the lessons, answers students questions and clarifications which consequently develop higher learning outcome compared to CAIM. Minggao (2009) implied in his study that the use of CAIM in teaching, often appear overly dependent on the software platform which will inevitably reduce the direct interaction between students in the class. In this case, most of the time students are set in the status of passive acceptance, students' initiative and enthusiasm cannot be stimulated. In this effect, CAIM has lesser actual interaction compared to teaching using PowerPoint Presentation where the presence of the teacher is highly regarded.

Table 4 shows the percentage distribution of students preference of either which teaching method they had more likely to enjoy.

Table 4. Percentage Distribution of Students' Preferred Teaching Strategy.

Schools	**Students' Preferences**	
	PowerPoint Presentation	CAIM
A	5.4	25.2
B	4.5	32.4
C	18	14.4
TOTAL	**27.9**	**72.1**

Evidently, School A has 19.8% total difference in favor with CAIM, School B has 27.9% total difference in favor also with CAIM and School C has 3.6% total difference in favor with the PowerPoint Presentation. There were about 44.2% total differences in which students' preferred CAIM than the PowerPoint Presentation.

This results averred that most students preferred CAIM over PowerPoint Presentation because they have more confidence and they do not have to fear whether they could get wrong or not as they could repeat the process which is confirmed by the study of Cadongonan (2004).

In his study, Ya-nan (2010) confirms that by operating the computer to complete the learning task, the students' curiosity and sense of accomplishments has been greatly fulfilled. Unlike CAIM, in teaching using PowerPoint Presentation, the teacher facilitates the class and exerts limitation on teaching-learning process. In this effect, CAIM is enjoyed more by the students compared to teaching using PowerPoint Presentation.

Table 5 shows the significant relationship between the students' preferred teaching strategy and their learning scores.

Table 5. The Significance of Relationship between Learning and Preferences using T-test.

Schools	t-value computed	P-value	Decision
A	-4.875	0.000	significant
B	-7.307	0.000	significant
C	.661	513	not significant

The students' learning has significant relationship with their preferred teaching strategies for both schools A & B except for School C. The students got higher scores in their preferred strategy while for School C, the scores are lower.

Consequently, with regard to the general scope of the study, the t-value shows that CAIM is the majority preference of the students but the results revealed that the students perform better in the PowerPoint Presentation.

This implied that teachers should not always depend on the preference of the students instead employ teaching strategies that assures higher learning outcomes as viewed by Gilani et.al., (2012).Independent learning like CAIM, may be used by teachers who are oftentimes out of their classes because of their office designations. However; the readiness of the students for independent learning should be considered. According to the University of Waterloo, many skills and attitudes towards learning are required for successful independent study. The used of CAIM might not be appropriate to the age or development level of the students which result to lesser student learning compared to the PowerPoint Presentation. RICHA (2014) pointed out that teachers should evaluate these criteria before they apply certain strategy that suits the teaching styles as well as the requirements of the students.

Summary of Findings

Based on the analysis of the data gathered, the following findings were found. As reflected in the post-tests of the PowerPoint Presentation and Computer Aided Instructional Material, there is an increase in the mean scores of the students. However, PowerPoint Presentation has higher students learning outcome than CAIM.

Evidently, most students preferred Computer Aided Instructional Material (CAIM) compared to the PowerPoint Presentation. But, there is a significant difference to the relationship between their learning scores and their preferred teaching strategy since CAIM is the majority preference of the students but the results revealed that students perform better in the PowerPoint Presentation.

Conclusions

Teaching using PowerPoint Presentation and Computer Aided Instructional Material (CAIM) were both effective teaching strategies in learning social studies subject. Consequently, between the two strategies the PowerPoint Presentation had greater learning outcome compare to CAIM, this implied that the presence of the teacher has significant impact in learning compare to the CAIM. However, in various circumstances CAIM which is an independent learning still remain useful as an alternative and supplementary tool in learning process.

Most students preferred CAIM in learning social studies subject; however, the result reveals that students achieve better through PowerPoint Presentation. This implied that teachers should be careful in employing teaching strategies or methods in learning. They should not always depend on the preference of the students instead employ teaching strategies that assures higher learning outcomes.

Indeed, social studies teachers has responsibility in providing, formulating and determining appropriate learning pedagogy to develop understanding and interesting teaching method in achieving and maintaining standards of excellence in learning social studies subjects.

Recommendations

Based on the findings and conclusions of the study, recommendations are hereby forwarded. Social Studies educators may verify first the effectiveness of the new methods of teaching before massive implementation. They may modify their methods in teaching with the integration of Computer Information Technology to assure students positive learning outcomes.

Teachers and Administrators are suggested to be aware that although we are in the critical modern generation using high-grade technology or advance software application like CAIM, we still need to verify its influence in learning process in various fields particularly in Social Studies. Teachers who will introduce new method in teaching should be well prepared on the intricacies of the method so that the learning of the students will not be prejudiced.

References

Abante, M. (2006). "Computer – aided instructional materials in teaching statistics in the tertiary level C**.** "Master's Thesis, Amang Rodriguez Institute of Science and Technology.

Cadongonan, M.G. (2004)."*Computer – assisted instruction on the selected topics in symbolic logic for BSCS students of Don Mariano Marcos Memorial State University,* "South La Union Campus, Institute of Computer Science.

Corbeil, G. (2007). Can powerpoint presentations effectively replace text-books and black boards for teaching grammar? do students find them an effective learning tool? *CALICO Journal, 24 (3) 631-656*

DepEd (2013) Five – year information and communication, technology for education strategic plan. (DepEd ICT Strategic Plan) Retrieve from

planipolis.liep.unesco.org/upload/Philippines/Philippines_ICT4E_strategic_plan.pdf.

Gilani, A., Ismael, N. & Gilakjani, P. (2012). Impact of learning reading strategy on students' reading comprehension proficiency. *The International Journal of Language Learning and Apllied Linguistics World (IJLLALW), 1 (1), 78 – 95*

Hick S.(1997). Benefits of interactive multimedia courseware. Trican Multimedia Solutions Inc. Retrieved from http-server.carleton.ca

Lari, F.S. (2014). The impact of using powerpoint presentations on students' learning and motivation in secondary schools. *Procedia – Social and Behavioral Sciences 98 (2014) 1672 - 1677*

Minggao, X. (2009). Based constructivism: multimedia teaching problems and countermeasures. *Scientific and Technological Information, (35): p.986*

Ozaslan, E.N., & Maden, Z. (2013). The use of powerpoint presentations at the department of foreign language education at middle east technical university. *Middle Eastern & African Journal of Education, Research, Issue 2.*

RICHA (2014). Instructional Strategies: Find the best approach to encourage independent learning. *Udemy,Inc. Built on the Genesis is Framework*, Retrieved from https:// blog.udemy.com

Stepp-Greany, J. (2002). Student perceptions on language learning in a technological environment: implications for the new millennium. *Language Learning & Technology 6 (1), 165-180.*

Ya-nan, Z. (2010). "Analysis of advantages and disadvantages of computer-assisted instruction in english teaching". *School of Foreign Languages, Nanyang Institute of Technology*