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The Effect of Multi-media Instruction on Student Learning

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Abstract
This study investigated on the effect of multi-media instruction in improving student learning of students. Forty eight students enrolled in World Literature course were used as subjects of the study. Multi-media instruction was utilized in the experimental group while the traditional teaching method was used for the control group. This study utilized the Quasi-Experimental Design. The pre-test mean scores identified the primary knowledge of the participants. After the conduct of the selected topics using multi-media instruction, the students were given a post-test. Results showed the students who were exposed to multi-media instruction had enhanced academic performance in the World Literature course. Apparently, results on the post-test mean scores of the students revealed that there is a significant effect on the academic performance of the experimental group in which the multi-media instruction had been employed. Thereby, students who had multi-media instruction executed better learning than students who were taught in the traditional teaching method. Furthermore, results typify that there is a significant relationship between the students' motivations in learning English and their academic performance in the World Literature course.
Keywords: Multi-media instruction, student learning, technology, academic performance, World Literature

1. Introduction

The inevitable innovations in technology causes a number of opportunities and the same time, challenges for educational institutions which take into consideration the adaptability of the learners.

These opportunities comprise ease of access to innumerable multimedia content, the escalating utilization of e-learning resources, the ubiquitous expansion of smart phones and tablets that can connect to the Internet anytime, the outspread role of social networks for educational development, and the accelerating interest in the capability of technological tools in the classroom that aids learning among the students.

On the other hand, rapid technological advances carry along multiple challenges in the education arena. Universities, colleges, and even schools continuously catch up with these innovations which enforce updating of their technological infrastructure and facilities, creating faculty and staff development programs, and upgrading the curricula.

As such, educators also allow these sophisticated tools to permeate in their respective classrooms to enhance the teaching and learning process. Multi-media resources such as LCD projectors, laptops, desktops, CDROMs, videos, interactive whiteboards, and software pertinent to specific course, and e-learning sites to mention a few are greatly utilized in instruction.

According to Fenstermacher (1986), the primary aim of the educational tools is to further learning. He asserted that the set-up of these multi-media resources is aligned to the fact that learners are treated as active constructors of knowledge and teachers are facilitators of that learning process.

Mayer (2001) asserted that multimedia instruction imbibes verbal dimensions such as printed and spoken text, and visual dimensions, such as pictures, graphs, illustrations, drawings, charts, photos, and animations.

A number of researchers had attested the efficiency and effectiveness of multimedia resources in the teaching and learning process. Multimedia teaching has been believed to provide various techniques and methods for lesson planning, and to assist classroom instruction with improved visualization and representation (Shephard, 2003; Teo & Chai, 2009).

These multimedia resources help increase students' awareness of learning concerns, enhance their understanding of the topic, and foster the depth of their understanding. Multimedia instruction had been viewed positively over the traditional lecture-based instruction (Jonassen, 2000).

Multimedia resources had been regarded as powerful aid that enhance teaching and learning in various disciplines including language learning, science, mathematics, engineering, business, etc. (Garrison, 2001; Mitchell, 2001; Shephard, 2003; Liles,2004; Palmer, 2007).

Several research findings had discussed the significant positive effects of multi-media instruction on language learning (Duquette & Painchaud, 1996; MsDonald, 1996; Chun & Plass, 1997; Ehsani & Knodt, 1998; Kost, Foss, and Lenzini,1999; Al-Seghayer, 2001; Sun & Dong, 2004; Tababers, et.al. ,2004; Kim, D., & Gilman, D. A. , 2008; Lee et.al., 2008).

It has also been highlighted by educators that multimedia integration in the classroom increases students'

responsiveness toward learning concerns, advances their understanding of the course, and deepens their learning. Students prefer the use of multimedia in the teaching and learning process than the traditional lecture-based instruction.

However, Butler and Mautz's (1996) study found out that students who received multimedia instruction did not perform well on quizzes and exams. Significant factors such as topic discussed could have affected the students' preferred instructional strategy or method.

This study is anchored on Mayer's cognitive theory of multimedia learning which underscores that learners comprehend more deeply from words and pictures than from words alone. Nevertheless, simply including words to graphics is not an operative way to achieve multimedia learning.

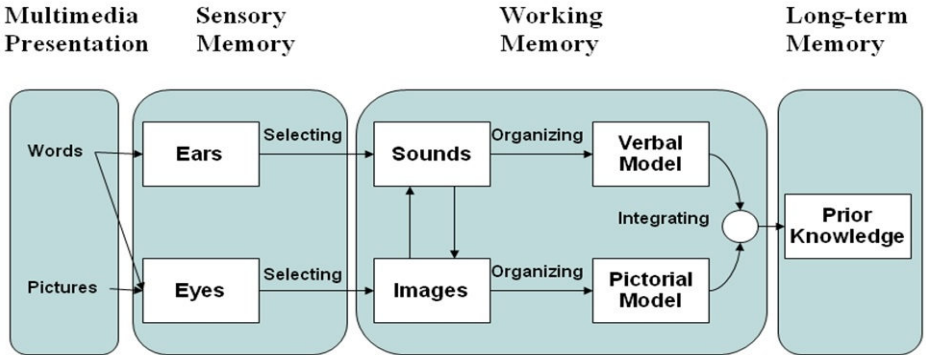

Figure 1. Mayer's Model of Cognitive Theory of Multimedia

(Source: http://arcmit01.uncw.edu/erg1602/Glossary.html)

The cognitive theory of multimedia learning is best exemplified in this figure. This theory proposes three main assumptions when it comes to learning with multimedia:

1.People utilize two channels namely, auditory and visual, for processing information;
2.People have limited capacity for each channel to process the amount of information at a given time;
3.People enjoin in the active processing of information by filtering, selecting, organizing, and integrating knowledge.

1.1. Objectives of the Study

This study ascertained the effect of multimedia instruction on student learning, particularly, in the World Literature course.

Specifically, this sought answers on these questions:

1.1.1. What are the students' motivations in learning English?
1.1.2. What are the pre-test and post-test mean scores of students exposed to multimedia instruction and traditional teaching?
1.1.3. Are there significant differences between the pre-test and post-test mean scores of students exposed to multimedia instruction and traditional teaching?
1.1.4. Is there a significant relationship between students' motivations in learning English and academic performance in World Literature?

Based on the aforementioned problems, the following null hypotheses were advanced:

1. There are no significant differences between the pre-test and post-test mean scores of students exposed to multimedia instruction and traditional teaching.
2.There is no significant relationship between the students' motivation in learning English and academic performance in Literature.

1.2. Research Paradigm

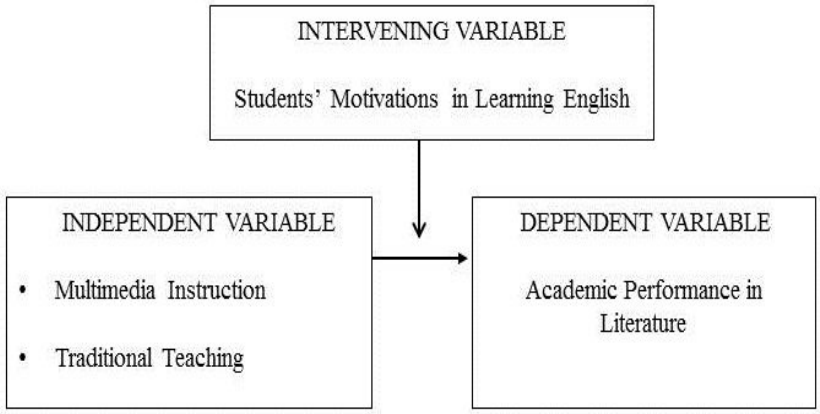

Figure 2. The Effect of Multi-media Instruction on Student Learning

Figure 2 shows the paradigm of the study. This research sought to highlight probable student performance differences between the students in the experimental group exposed to Multi-media Instruction and the control group subjected to Traditional Teaching method.
Motivations in learning English are anticipated to be correlates in the academic performance of EFL students, specifically in the World Literature course.

2.Research Methodology
This research utilized the Quasi-Experimental Design. Also known as the pretest-posttest control group design, this provided bases for the effects of the independent variable to the dependent variable encompassing the experimental and control groups.

Multi-media instruction had been applied for the experimental group while the traditional teaching method was utilized for the control group. However, this was only limited on the topics in World literature course.

In the experimental group, the teacher presented the World Literature topics with the aid of pictures, drawings, graphics, slideshows, videos, among others, through technological aids such as LCD projectors, laptops, and desktops.

In the case of the traditional teaching method, the customary lecture discussion was done.
This research utilized the five point Likert scale questionnaire on Students' Motivations in Learning English to identify the motivations which may either be integrative, which is for social and/or cultural purposes; or instrumental, which is for a career or academic goal. This researcher-made questionnaire had undergone face and content validity and had been pilot-tested.

To determine the learning performance of students in the chosen World Literature topics, a Teacher Made Test developed by the researcher was used. The content validity of the instrument was determined through a two-way Table of Specification. Pre-test was conducted to both the experimental and control groups to identify the learners' academic performance in World Literature.
For statistical analyses, mean, percentage, t-test, ANCOVA, and Pearson-r correlation were used.

3. Results and Discussion

Table 1. Students' Motivations in Learning English

Motivation	Participants		Mean	Interpretation
	Experimental	Control		
Integrative	4.70	4.68	4.69	Strongly Agree
Instrumental	4.75	4.63	4.69	Strongly Agree
Average	4.73	4.66	4.70	Strongly Agree

Table 1 displays students' motivations in learning English. All the participants in the experimental and control groupings strongly agree that they are integratively and instrumentally motivated to learn English. Students acknowledged that English adeptness has social and cultural, and work or academic-related benefits.

Results of this present investigation are corroborated by other research findings which prove that those learners of English may bear both kinds of motivations, integrative and instrumental, to learn a language (Chalak and Kassaian, 2010; Al-Khatib, 2007; Keblawi, 2006; Obeidat, 2005; Malallah, 2000; Williams, 1994; and Deci and Ryan, 1985).

Table 2. Test of Difference on the Pre-Test and Post-Test Mean Scores of the Participants

Participants		N	Mean	t	df	Sig. (2-tailed)
Pre-test	Experimental Group	25	8.62	-.436	43.468	.528
	Control Group	23	9.02			
Post-test	Experimental Group	25	16.25	4.752	46.257	.003*
	Control Group	23	12.20			

Table 2 presents the mean of the pre-test and post-test scores of the students on the test given after the culmination of the treatment phase of the study. Results direct that that the control group had a better learning on the chosen topics in World Literature with a mean of 9.02 if related to the 8.62 of the experimental group. Contrariwise, findings elucidated that the experimental group which had been subjected with multi-media instruction had better learning after the treatment with 16.25 mean over the 12.20 of the control group.

In addition, Table 2 presents the test of difference on the pre-test and post-test mean scores of the experimental and control groups. Results show that there is no significant difference on the mean pre-test scores of the participants with a t-value -0.436 and p-value of .528 at 0.05 level of significance. Thus, the null hypothesis that there is no significant difference between the pre-test mean scores of participants exposed to multimedia instruction and traditional teaching had been accepted.

Moreover, it can be deemed that there is a significant difference on the mean scores of the participants in the post-test t-value of 4.752 and a p-value of <.003 at 0.05 level of significance. As such, the null hypothesis which states that there is no significant difference between the post-test mean scores of students exposed to multimedia instruction and traditional teaching had been rejected.

These findings had been supported by Teo & Chai (2009), Kim & Gilman (2008), Lee et.al. (2008), Palmer (2007), Liles (2004), Sun & Dong (2004), Tababers, et.al. (2004), Shephard (2003),Mayer (2001), Garrison (2001); Al-Seghayer (2001), Mitchell, (2001), Jonassen, (2000), Kost, Foss, and Lenzini (1999), Ehsani & Knodt (1998), Chun & Plass (1997), Duquette & Painchaud (1996), McDonald, (1996), Fenstermacher (1986) who viewed multimedia instruction positively over the traditional lecture-based instruction.

Table 3. Relationship between Students' Motivations in Learning English and Academic Performance in World Literature

		Students' Motivations in Learning English	
		Integrative	Instrumental
Post-test	Pearson Correlation	.456	.456
	Sig. (2-tailed)	.002*	.002*
	N	48	48

Table 3 exudes the relationship of the students' academic performance in World Literature and their motivations in learning English. A significant relationship was deduced in both the integrative and instrumental motivations of the students and their academic performance in World Literature with p values of .002 at 0.05 level of significance. As such, the null hypothesis which states that there is no significant relationship between the students' motivations in learning English and their academic performance had been rejected. These significant results had been confirmed by Tamimi and Shuib (2009), Lifrieri (2005) , and Gardner, (2000) who averred that motivation plays a vital role among the English language learners since it has remarkable effect on how students learn and eventually become proficient in the language.

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