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EFFECTIVENESS OF INTERACTIVE MULTIMEDIA-BASED LEARNING IN TEACHING ART HISTORY AS A COMPONENT OF GENERAL KNOWLEDGE IN ART FOR SENIOR HIGH SCHOOL STUDENTS

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ABSTRACT

The teaching and learning of Art History as a component of General Knowledge in Art is meant to help students to investigate the history of artistic growth. Due to the abstract manner of teaching art history, a lot of students in schools develop aversion to it. The purpose of this study was to assess the effectiveness of using an Interactive Multimedia-based learning (IML) platform for the teaching and learning of the Art History section of the General Knowledge in Art subject by students of Kumasi Senior High Technical School (KSHTS). This study presents the findings of a quasi-experimental design assessing the effectiveness of learning with the IML platform. The study compared the learning outcomes of students who participated in a class taught with the IML platform (Experimental group - EG) to those taught with conventional didactic instructions (Control group - CG). A total sample of n = 132 students participated in the study. Independent samples t-test was employed to determine the effect. The findings of this study revealed that the IML platform is a plausible pedagogical agent for increasing students' performance of Art History t (8.63) p = <.001. The mean scores (m = 80.8, SD = 15.6) of students in the EG were significantly higher than those in the CG (56.3, SD = 17.1). The researcher identified that studies on Interactive Multimedia to teach were largely focused in the areas of Science, Technology, Engineering and Mathematics (STEM). This study, however, focused on the use of the IML platform to teach Art History. By continuing to seek new ways to integrate Interactive Multimedia learning into Art History lessons, teachers can design more effective lessons to meet the needs of students offering General Knowledge in Art.

Keywords: Interactive multimedia, Art History, Computer-based instruction, Learning outcomes, General Knowledge in Art, Ghana

INTRODUCTION

Technology plays an exceptional role in the existence of man (Hughes and Hans, 2001). This idea makes various scholars posit that technology is ordained by God; perhaps the greatest gift after the gift of life (Stosic, 2015; Raja and Nagasubramani, 2018). In today's world, the influence of technology facilitates an easier and faster way of doing things; thus, it has now become obligatory to use technology to teach and learn. In the same vein, Matas (2014) explains that the unprecedented rate of technology invasion has made information easily accessible and free.

According to Piaget (1978), learners normally get attracted to particular subjects through the capability of the instructor to arouse their interest, sustain and control it. This then makes it essential for the teacher to come out with new ways of motivating them. The technological media of teaching facilitates an easier way to realise this goal. In harmony with this, various researchers indicate that the use of interactive multimedia to teach represents an accessible way to easily explain abstract art concepts using graphic exercises which aim at visual perception (Bentkowska-Kafel *et al*, 2005).

The subject, General Knowledge in Art (GKA), has special areas of General Art concepts, Appreciation and Art History. This subject comprises all subjects in the visual art programme of Senior High Schools (C.R.D.D., 2010). This arrangement has its basis in getting the student of visual art to have complete knowledge and skills of both the practical and theoretical outlook of visual art.

According to the CRDD (2010), the teaching and learning of Art History as a component of General Knowledge in Art is meant to help students to investigate the history of artistic growth in specific cultures as well as the role which art had in their development. This can go a long way to contribute immensely to the socio-economic development of Ghana. However, Adom *et al*, (2016) posits that the issue is that art history tutors of most senior and tertiary institutions adopt inadequate educational methodologies to make lessons interactive and engaging. Thus, it was necessary to adopt effective instructional methods to make history lessons effective (Adom *et al*, 2016). According to Watson-Canning (2017), for students to have richer and fuller understanding of history, a visual source needs to be integrated with written texts to make it possible for students to examine sources that may pose challenges to their own interpretations. This means that when the student is able to make meaning out of the information, they can appreciate it better. However, without using the required and appropriate audio-visual aids like videos, maps, films, etc. the lesson may turn out to be abstract and as such very boring (Shanthy and Thiagarajan, 2011). The researcher teaches GKA at the Senior High level so he is very much aware of the subject being taught manually with little technological means which does not help the process of learning it. This, therefore, makes it difficult for students to get a good understanding of the topics in the Art History aspect of GKA. Martin (2020) argues that History is a study of previous events that may be confirmed by genuine evidence which is examined in the present and utilised as a reference for future subjects. Due to the abstract manner of teaching art history, a lot of students in schools develop aversion to it. Stosic (2015) posits that technology implies the systematic organisation and application of modern technological trends aimed at strengthening education. This makes technology a prerequisite to planning, executing and evaluating the process of education and helping with the introduction of modern techniques of teaching.

Students are highly exposed to new technologies which quickly attract them

to its use. In effect, their lives have now become part of the technological media. The researcher has, thus, taken advantage of this situation to introduce a technology-based model of handling the art history aspect of GKA with which students can easily study to promote interactivity and learning, enhance their skills of communication and improve their participatory prowess.

At the Senior High School level, some approaches adopted for teaching Art History in Ghana include role playing, discussion, demonstration, cooperative learning group, presentation/lecture, problem solving and simulation (Adom *et al*, 2016). However, there has not been any known study on the use of interactive multimedia to teach art history in Ghana. Although research on the IML has been increasing immensely in recent years, there is still a dearth of studies performed in Senior High School General Knowledge in Art, specifically, the teaching of Art History. Based on this, the study is based on the research question (RQ): Is interactive multimedia effective to teach Visual Art students and Home Economics students the Art History component of GKA? The study will throw more light on how interactive multimedia can effectively facilitate the teaching of the Art History. It will also lay to bare different approaches to teach art effectively.

Literature Review

The General Knowledge in Art subject is a composite subject comprising Art History, Art Appreciation and General Art Concepts (CRDD, 2010). The General Art Concepts in General Knowledge in Art briefly touch on each of the art subjects studied at the Senior High School level. They include basketry, jewellery, textiles, sculpture, picture making, leather work, graphic design, and ceramics.

Interactive multimedia is a dynamic technology. It requires the input of users to deliver a set of information through words, graphics, images, or videos. Yulifar and Agustina (2020), in their study on "Developing interactive multimedia for history subjects' revealed that students' use of the interactive multimedia improved their participation, attention and learning outcomes. There was a significant increase of post-test (83.03) scores as against pre-test (51.07) scores. From these results, it became evident that the use of interactive multimedia results in an improvement of student learning outcomes and learning achievements. In a study by Maaruf and Siraj (2013), the interactive multimedia teaching material was created primarily with the Microsoft PowerPoint 2010 software. This programme was chosen for its benefits of being a universal software which is easily accessible to all computer users. The Microsoft PowerPoint 2010 software was used to create interactive multimedia teaching material for a culturally responsive pedagogical module for traditional craft in Visual Art Education for high schools; to allow teachers to be actively engaged in the improvement process as co-designers; to allow teachers to gain direct exposure to the designed interactive multimedia teaching material; and to regularly add new information. This study by Maruf and Siraj (2013) revealed that teachers' involvement in the development of the technology helps them to be more culturally tolerant and also improves teachers' information technology skills. It accelerates teaching and learning and helps to increase student involvement in the learning process.

In a study conducted by Abathi (2012), an Interactive Multimedia Learning Object (IMLO) was created utilising a multi-sensory approach to interactive multimedia and instructional technology. The study found evidence that dyslexic children enjoyed learning with the IMLO. Multimedia technology helps simplify abstract content, allows for differences from individuals and allows for coordination

of diverse representation with a different perspective (Abdulrahman *et al*., 2020).

MATERIALS AND METHODS

This study used a quasi-experimental design to assess the effectiveness of learning with the IML platform. White and Sabarwal (2014) opine that in quasi-experimental designs, the comparison group selected is that which is as close to the treatment group as possible in terms of baseline (pre-intervention) characteristics. This comparison group represents what would have happened had the intervention not been introduced. The study compared the learning outcomes of students who participated in a class taught with the IML platform (Experimental group - EG) to those taught with conventional didactic instructions (Control group - CG). The students did not have a prior experience with the use of interactive multimedia in class before it was introduced to them. The study obtained qualitative data collected from the experimental group through the use of informal conversations to ascertain whether the results identified from the experimental group confirms the purpose of the study.

Participants and Settings

Data was collected from n = 132 research participants who represented a sample of students enrolled in Visual Art and Home Economics. They were numbered equally as 66 students in the control group and 66 students in the experimental group, all of Kumasi Senior High Technical School. The first thirty-three students to be counted in each class were used for the study since the ICT laboratory space could take only thirty-three students. This confirms the position of Acharya *et al*. (2013); Etikan and Bala (2017) that participants who meet the inclusion criteria are those to be selected to meet the desired number (quota) of participants. As a result, the quota selected for each class was thirty-three.

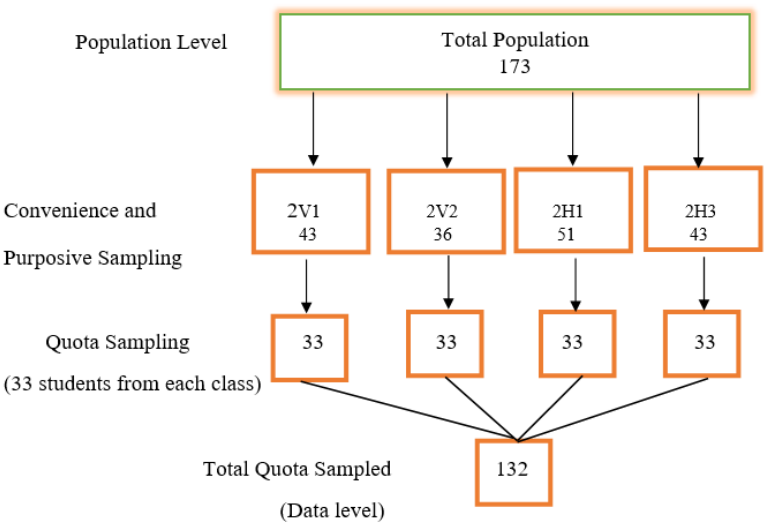

Fig 3. The selection process of the sample
Source: Developed by the researcher

Table 1. Breakdown of sample size

Group	Class	No. of Students
Experimental	2V1	33
Experimental	2H3	33
Control	2V2	33
Control	2H1	33
Total		**132**

Source: Developed by the researcher

Table 2. Age distribution of respondents

		Control Group, n (%)	Experimental Group, n (%)	Total, n (%)
Age	17	3 (2.3)	16 (12.1)	19 (14%)
	18	45 (34.1)	36 (27.3)	81 (61%)
	19	9 (6.8)	10 (7.6)	19 (14%)
	20	3 (2.3)	5 (3.8)	8 (6%)
	21	2 (1.5)	3 (2.3)	5 (4%)

Source: Developed by the researcher

Experimental Procedure

The intervention involved pre-intervention, intervention and post intervention. According to Corbett (2003), a pre-test can determine a student's level of knowledge and ability before the intervention begins, and thus serve as a useful diagnostic function.

To identify the specific problem at hand, the researcher made use of this procedure by using the first semester results which tested students on Pre-Historic Art as pre-test scores to diagnose the perceived research problem before the actual intervention or treatment. The next stage was the Intervention/Treatment stage. This stage involves a series of measures put in place to treat the problem identified. Three weeks after students reported in the second semester, the researcher selected a history topic entitled, "Egyptian Art", from their GKA syllabus. The reason for selecting the Egyptian Art topic was because questions on that had been asked in the WASSCE for three consecutive years. The researcher wanted to know if students are able to grasp history content efficiently when they are taught with a different approach other than the traditional didactic approach. To get a clear picture, the control group were put in their classroom to be taught with the traditional didactic approach. The experimental group, however, was taken to the ICT laboratory to interact with the IML platform. The time allocated for each of the groups was two periods, that is 120 minutes, for both instructions and the achievement test. Data were collected from the experimental and control groups by using an achievement test (post-test) administered after the intervention. The study design overview is presented below in figure 3. At the post-intervention stage, the scores of students were evaluated to know the outcome of the effectiveness of using the IML. This was meant to ascertain whether the experimental group

which was introduced to the IML platform had a better performance than those who were taught with the traditional didactic approach.

Procedure for the Pre-test

In the first stage of the quasi-experimental design, all participants were taken through a History (Pre-Historic Art) topic with the use of the conventional teaching method without any form of introduction to multimedia. The school examination results of the first semester which tested students on a History Topic (Pre-Historic Art) were used as pre-test scores of the sample.

Traditional Didactic Approach

The control group was made up of sixty-six participants with thirty-three of them in Home Economics and thirty-three in the Visual Art class. Each class studied the History of Egyptian Art. The control group received traditional instructions which consisted of teacher-selected definitions in the syllabus out of which students defined them and came up with their responses. An achievement test was used to assess the class after the lesson. All these took place in a double-period lesson which was 120 minutes.

The Interactive Multimedia Approach

For the experimental group, sixty-six students were taken to the ICT laboratory and introduced to interactive multimedia content which was designed and edited using Adobe Captivate. The interactive multimedia lesson which was made up of text, graphics, video and audio was shared in the local drive of all computers at the ICT laboratory for all students to have access to it. After the teacher introduced the students to the IML platform, they acquainted themselves with the interactive multimedia and engaged with the content of the multimedia. This was followed with an achievement test in the IML which was digitally marked.

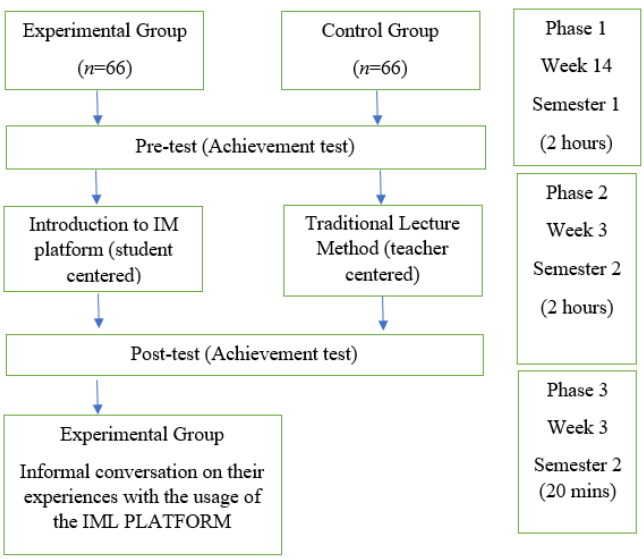

Figure 3 The experimental process of the study

Source: Developed by the researcher

Traditional pedagogy vis-à -vis Interactive Multimedia pedagogy

The traditional teacher-centred class delivery method normally begins with the teacher discussing relevant prior information with the students. The traditional teacher-centred class is more teacher centred (Boateng *et al*, 2022). The traditional school curricula tend to emphasize knowledge acquisition over knowledge application, and many school systems fall short of appropriately preparing pupils in digital citizenship and literacy (Chetty, 2013). The researcher derived Table 3.1 from a review of several literatures which highlight the key contrasts between traditional and ICT-oriented education.

Table 4. Differences between Teacher Centred Approach and Interactive Multimedia Learning Approach

Traditional/Teacher-Centred Approach	Interactive Multimedia Learning Approach
The teacher is the only source of information who dispenses "truths" and content to the students.	Students interact with the content. The teacher is the coach or facilitator of this process.
Though interactive learning activities are supposedly integrated with the traditional approach, the teacher is the only person who makes assessments (unidirectional teaching method).	The teaching method is reciprocal because students are able to teach their mates, assess their works and provide feedback under the guidance of their teacher.
The education process is largely dependent on textbooks and written notes.	The education process relies on interactive multimedia such as videos, text, pictures, infographics and other technology-based materials.
This involves delivery of information.	This relies on exchange of information.
The path to finding solutions to problems is only one.	There are multiple ways to finding solutions to problems.

Source: Developed by the researcher

Instrumentation

Informal conversations and achievement tests were used to gather qualitative data and quantitative data for data analysis in the study.

Achievement test

For this study, the test items were compiled from the past WASSCE questions. The items for the test included fourteen questions on Egyptian Art History. Only the knowledge and understanding of learners was tested. The scoring pattern was one (1) score for a correct answer and zero (0) score for a wrong answer. The total percentage was calculated by dividing the total score obtained by 14 and multiplying it by 100. The Kuder Richardson-20 (KR20) was used to confirm that the post-test items highly correlated with the pre-test items.

Informal Conversations

Bernard (2011) and Swain and King (2022) posit that informal conversations are the best way to gather qualitative data since it allows for the participant to even give more information beyond the demands of the conversation. It also prevents performativity. Similarly, Patton (2002) refers to informal

conversations as unstructured interviews. This is because they allow the person to open up in a more relaxed manner and discuss a particular issue in more depth. In this study, informal conversations were had with a sample of fifteen (n=15) participants in the experimental class to gather qualitative data on their experience with the use of the IML in terms of their useability, navigation of the IML and also to ascertain whether they fully understood the content taught.

Ethical Considerations and Quality Assurance

The study took ethical considerations into account to enable the researcher to collect reliable data while maintaining some level of neutrality. According to Agwor and Adesina (2018), ethical considerations in social research improve data quality since applicable study methodology is used. Respondents were guaranteed their anonymity. Ethical clearance was sought from the Department of Educational Innovations in Science and Technology. Verbal consent was sought from the Heads of Department of the selected classes, respondents, and the parents of the respondents. Participation of respondents was voluntary and without any form of coercion.

DATA ANALYSIS

The study used the Jamovi application 2.2.5 version to analyse the quantitative data (The Jamovi project, 2021). The analysis was done to measure and compare the following:

i. Pre-Test Scores Between the Experimental Group and the Control Group
ii. Post-Test Scores Between the Experimental Group and the Control Group
iii. Pre-Test Scores against Post-Test Scores of the Control Group
iv. Post-Test scores against Pre-Test scores of the Experimental Group
v. Scores among gender
vi. Scores among programmes of study

Qualitative Data Analysis

The qualitative data collected from semi-structured interviews were analyzed using content analysis to identify themes and patterns related to the objectives laid out in the study upon which the research questions were developed to interpret the phenomena under study.

RESULTS AND DISCUSSION

Comparison of Pre-Test Scores Between the Experimental Group and the Control Group

An Independent Samples T-test was conducted to measure the pre-test scores between the experimental group and the control group. It could be seen from the table below that at the entry level, respondents of both the control and experimental groups had almost the same level of knowledge. The results showed that there was no marked difference in the scores with the following statistics: $t= 2.45$, $df= 130$, $p<0.016$. The result is illustrated in the tables below.

Table 5. Comparison of Pre-Test Scores Between the Experimental Group and the Control Group

							95% Confidence Interval			
		Statistic	Df	P	Mean difference	SE difference	Lower	Upper		Effect Size
PRE-TEST	Student's t	2.45	130	0.016	5.27	2.15	1.01	9.53	Cohen's d	0.426

Source: Field Data analysis from Jamovi.

Table 6. Group Descriptives: Comparison of pre-test scores between the experimental group and the control group

	Group	N	Mean	Median	SD	SE
PRE-TEST	Experimental	66	57.1	56.5	11.8	1.45
	Control	66	51.8	51.5	12.9	1.59

Source: Field Data analysis from Jamovi

Table 7. Group Descriptives: Comparison of post-test scores between the experimental group and the control group

Group	N	Mean	Median	SD	SE
Experimental	66	80.8	85.7	15.6	1.92
Control	66	56.3	57.1	17.1	2.10

Source: Field Data analysis from Jamovi

Post-Test Scores Between the Experimental Group and the Control Group

A paired samples T-Test was used to analyse the post-test scores of the experimental group and the control group. This was done to ascertain whether those who were introduced to the intervention (IML platform) performed better than those who were taught with the traditional approach. This was largely done to assess whether there was a statistically clear difference between the experimental group and the control group. The results revealed a significant difference in the post-test scores obtained as against the pre-test scores. The results obtained were as follows: t=12.1, df=65.0, p<0.001, mean difference 23.8, CI 27.7 – 19.8, effect size =1.49. There was a significant difference in the scores with P<0.001. From the results of this study, it can be deduced that using interactive multimedia to teach Art History has increased the academic performance of the students. Some related studies, which confirm the results of this research are Abathi (2012), Maaruf and Siraj (2013), Vial *et al* (2015), Khan and Masood (2014).

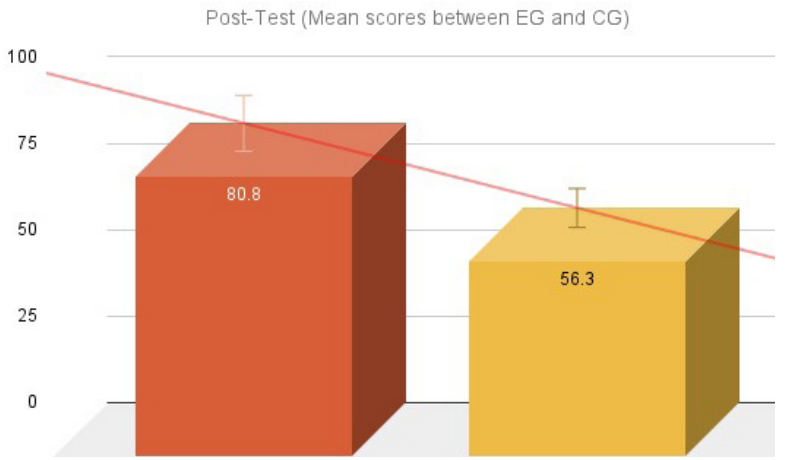

Figure 4.1: Comparison of performance between students in the experimental class and those in the control class

Source: Developed by the researcher

Comparison of Post-test scores and Pre-Test scores of the Control Group

A paired samples T-test was conducted to test the post-test scores and the Pre-test scores of the control group. This was to ascertain whether there was any difference in their results other than their earlier results. With a p value of 0.034, the results showed no statistically significant difference between the earlier scores and the scores obtained after the traditional instructions were given. The results revealed that instructional approaches which do not yield the expected outcome should be changed in order to help achieve the teaching and learning objective. The results are shown below.

Table 8. Comparison of Post-test scores and Pre-Test scores of the Control Group

Paired Samples T-Test

			Statistic	Df	p	Mean difference	SE		Effect Size
PRE-TEST TRADITIONAL	POST-TEST TRADITIONAL	Student's t	-2.16	65.0	0.034	-4.47	2.07	Cohen's d	-0.266

Source: Field Data analysis from Jamovi

Table 9. Group Descriptives: Comparison of Post-test scores and Pre-Test scores of the Control Group

	N	Mean	Median	SD	SE
Pre-test traditional	66	51.8	51.5	12.9	1.59
Post-test traditional	66	56.3	57.1	17.1	2.10

Source: Field Data analysis from Jamovi

Table 10. Group Descriptives: Comparison of Post-Test Scores and Pre-Test Scores of the Experimental Group

	N	Mean	Median	SD	SE
POST-TEST EG	66	80.8	85.7	15.6	1.92
PRE-TEST EG	66	57.1	56.5	11.8	1.45

Source: Field Data analysis from Jamovi

Table 11. Comparison of Scores Among Gender

Independent Samples T-Test							95% Confidence Interval			
POST-TEST INTERVENTION	Student's t	Statistic	Df	p	Mean difference	SE difference	Lower	Upper		Effect Size
		-1.03	64.0	0.305	-3.98	3.84	-11.7	3.70	Cohen's d	-0.255

Source: Field Data analysis from Jamovi

Table 12. Group Descriptives: Comparison of Scores Among Gender

	Group	N	Mean	Median	SD	SE
POST-TEST INTERVENTION	M	32	78.8	78.6	17.4	3.07
	F	34	82.8	85.7	13.7	2.36

Source: Field Data analysis from Jamovi

Table 13. Group Descriptives: Comparison of Scores Among Programmes of Study

	N	Mean	Median	SD	SE
2V1	33	82.7	85.7	14.0	2.43
2H3	34	79.0.	78.6	17.1	2.98

Source: Field Data analysis from Jamovi.

Comparison of Post-Test Scores and Pre-Test Scores of the Experimental Group

A paired sample T-Test was conducted for the experimental group to measure the effectiveness of the IML. The results revealed a significant difference in the post-test scores obtained as against the pre-test scores. The results obtained were as follows: t=12.1, df=65.0, p<0.001, mean difference of 23.8, CI 27.7 – 19.8, effect size = 1.49. The data used is stated below:

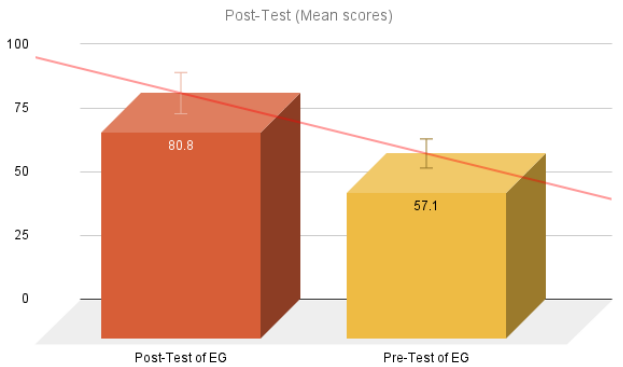

Figure 4.7: Comparison of Post-Test Scores and Pre-Test Scores of the Experimental Group

Source: Developed by the researcher

Comparison of Scores Among Gender

The study came out with no significant difference in the results of males against females. An independent samples t-test that was conducted showed that p < 0.305. This makes it clear that there was no statistically significant difference in the performance of males against females. In effect, when the IML is used, the gender of the student does not influence the results. The result is illustrated in the data below.

Scores Among Programmes of Study

A paired sample T-Test was conducted for the two experimental classes (2V1 and 2H3) to ascertain whether the Home Economics class performed better than the Visual Art class or vice versa. With a p<0.306 and effect size = 0.181, the results revealed no significant difference in student performance as regards their programmes of study. This makes it evident that the IML has no effect on the student programme of study. The result is further illustrated below.

Suggested changes

There was an informal conversation with a sample of participants (n=15) in the experimental group about their experiences with the use of the IML platform and their suggestions for its improvement since it was a new teaching and learning material which was introduced to them. Their responses are tabulated below.

Table 14. Suggestions for improving the IML

Aspect	Suggestions
Usability	Two out of fifteen students, representing 13% of the sample interviewed, suggested that they had a bit of difficulty with the use of the IML. They suggested that commands in the IML platform should be boldly stated. Their views are stated below:
Respondent one	*"….when answering the assessment test on the IML, I did not know which tab to click on to take me to the next question."*
Respondent two:	*"...Sir, I actually like the way I am able to hear your voice on the system together with videos and pictures but in answering the questions, I could not easily click on to the next question."*
Navigation	One student requested that they would like to easily click on any new word on the IML platform to interact with it but this IML platform design was linear. His view is stated below:
Respondent one:	*"…I wanted to get the meaning of every new word I found in the text when I clicked on it but I could not do it so I had to write it in my note book and look it up later in the dictionary. However, I have enjoyed using the software."*

Effectiveness of the IML

With the use of informal conversations, students were also asked about their view as to whether the interactive multimedia was an effective tool for them. All fifteen participants, representing 100% of the sample explained that they enjoyed the class and also understood everything. They further suggested that IML modules on other topics in GKA be made available. Samples of the views of respondents are stated below.

Respondent one: *"…I see this new way of teaching us history is better than the one in the classroom. If we get the opportunity to come here often to use the interactive multimedia, we will have no problem in our WASSCE"*. To this, Karime *et al*. (2011) and Abathi (2012) revealed that the use of interactive multimedia to teach children helps them to grasp concepts easily.

Respondent two: *"…In my opinion, this is the best teaching method I have ever encountered. I understood everything. I like the way you were speaking slangs in the audio accompanied by the pictures and videos. I will specially come with my iPod to listen again tomorrow and interact with the content taught".*

Respondent three: *"…I totally understood everything with the help of the pictures, audio, video and text. I will be glad if we always have our lessons in this manner".*

DISCUSSIONS

In evaluating the effectiveness of the IML, the t-test analysis of the pre-test mean score showed no statistically significant difference between the mean scores of the control (57.1) and experimental (51.8) groups. It could be seen from Table 5. that the two groups (control group and experimental group) were statistically the same before the intervention (Shanthy and Thiagarajan, 2011). On the other hand, the post-test results on table 7. showed that the mean test score of the experimental group was higher (80.8) than that of the control group (56.3). In consonance with this, Vial *et al*. (2015) and Sieben *et al*. (2017)

report that the performance of students increased with the introduction of interactive multimedia in the course content at the University. The t-test analysis of the post-test indicated a significant difference in the mean scores of the experimental and control groups ($p < 0.01$). This indicates that the difference in the performance of the experimental and control group is significant. This buttresses the research by Yulifar and Agustina (2020) that when interactive multimedia is used to teach, it increases academic performance of students than those taught using the traditional method. Similarly, in the research by Shanthy and Thiagarajan (2011) the academic performance of the experimental group was significantly higher than that of the control group when participants were introduced to the multimedia. This infers that the experimental group profited immeasurably from the IML platform which made them perform well in the post- test than those in the control group. From the results of this study, it can be deduced that using interactive multimedia to teach Art History has increased the academic performance of the students. The findings from Chong and Smith (2017); Quattrini *et al*. (2020); Martin (2018); Abathi (2012); Maaruf and Siraj (2013); Vial *et al* (2015); and Khan and Masood (2014) revealed that technology helps to establish a balance by the use of Interactive Multimedia to create virtual spaces to enhance the understanding of the content.

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

The study results revealed that the effectiveness of the IML platform far outweighs that of the traditional lecture method. This showed in the high performance of students with respect to the use of the IML platform and its value in enhancing the learning process and making it more interactive. The findings further stressed that students are now exposed to technology and its use and as such it should be implemented in the classroom to enhance the teaching and learning process.

The research revealed that when images, text and videos are introduced to students in the process of teaching Art History, it aids in easier retention. To help students to have a full understanding of the Art History topics, it is recommended that teachers engage learners in the Art History class with both visual images and oral explanation to aid their retention. Also, the Ministry of Education and other relevant bodies should organise regular workshops to give teachers the technical know-how on how to develop a variety of interactive multimedia to add value to the teaching and learning process.

Despite these laudable notions on the IML, it has a couple of hindrances to its use. The first is that not all students have mastery over the IML. This is because not all of them have access to computers at home so they find the use of the IML a bit complicated. Consequently, students ought to be trained on how to use the IML to equip them to access the benefits attached to it. Power failure is the other challenge to the use of IML as a tool for teaching and learning. To enhance its effective use, the power supply systems should to be improved.

The interactive multimedia was limited to teaching the Art History component of GKA at the Senior High School level. Future efforts could be made to explore the use of interactive multimedia to enhance the teaching of other Art concepts in Senior High Schools.

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