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Effects of Audio-visual Social Media Resources-supported Instruction on Learning Outcomes in Reading

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Abstract

Perennial poor performance in English language in public examinations has been linked to the proliferation of social media tools in the classroom. However, contrary to the general belief that social media hinders learning and distracts learners' attention, this study attempted to improve the quality of instruction through social media-supported audio-visual resources in teaching reading comprehension. Pretest, posttest, control group, quasi-experimental research design was adopted for the study and participants were randomly selected from intact Grade 11 classes in two educational provinces in the Gambia. Data were analyzed using inferential statistics, results show a significant main effect of treatment on students' interest and achievement in reading comprehension. There were recommendations on how to support language instruction using social media.

Introduction

English language plays several functions in the Gambian social and educational system. It serves as the official language, an important school subject and the medium of instruction for almost all the school subjects from basic level of education to the University level. Also, minimum of credit passes in English language and Mathematics remain one of the criteria for admission into any of the Universities in the Gambia (FRG, NAQAA, 2019). Success in the subject is a vital key that unlocks the gateway to university education in the Gambia. In spite of the importance of English language to students' academic advancement and success in all the other subjects taught in the language, students' performance in public examination has remained consistently poor as attested to by the perennial mass failure usually recorded in English language. In 2018, for example, over 90% of the Gambian students who sat for West African Senior Secondary school Certificate Examination (WASSCE) did not pass Mathematics and English language at credit levels.

Available data on the performance of secondary school students in the Gambia shows that only 475 (3.56%) of the registered candidates in 2018 obtained credit passes in 5 subjects and above including English and Mathematics. Also, in 2017, only 530 students which constituted a meagre 4.30% of the total number of candidates registered for the WASSCE obtained five credit passes in five subjects (English and Mathematics inclusive). From the analysis above, it is evident that mass failure in English and mathematics has become a perennial problem in the Gambia and by implication; the standard of education is falling at an alarming rate. Considering the requirements for admission into Gambian (public and private) universities, only 475 candidates out of over 13000 that sat for the examination in 2018 were eligible for admission. Students' performance in English language at both internal and external examinations shows that they find the subject very difficult to learn (Komolafe & Yara, 2010; Olagbaju, 2019).

Reading comprehension is tested in English language Paper I in the West African Senior Secondary Certificate Examination (WASSCE) has been identified as one of the problem areas for students in English (Olatunbosun, 2000). Several factors have been attributed to the high rate of failure in English language, some of these are teacher, gender, method, and child-related. However, it is evident that poor performance in English language is a product of students' deficiency in the four language skills – speaking, listening, writing and reading – taught and tested as part of English language curriculum in schools (Kolawole, Adepoju & Adelore, 2000). The WAEC Chief Examiner's Report (2017) has identified students' inability to read and comprehend the passage(s) effectively as one of the factors responsible for poor performance in reading. Also, Adebiyi (2012) singles out reading as an indispensable skill for general literacy because it is the foundation and most crucial factor in academic attainment in formal education. Similarly, reading is the access code to unlock the encrypted world of knowledge and a survival skill which is useful within and outside of the school system. It is the language skill

that is central to effective research procedures and discovery, accumulation of knowledge, and academic success in any formal education setting.

Reading is a language skill that is required to extract meaning from a printed text by identifying words in print and constructing understanding from them. Duke (2006) describes reading as the ability to retrieve information from a written text. Comprehension is the ability to make meaning out of whatever is being read. Reading is a complex process that involves cognition and motor skills through simultaneous processing of the text and generation of meaning. The goal of reading is to derive meaning and achieve comprehension of any given text. According to the National Reading Panel (2000), comprehension is a central component of reading instruction and any process of instruction in reading that is devoid of comprehension is a mere waste of time. The size of vocabulary that an individual possesses determines his or her level of comprehension from a reading text and limited vocabulary will lead to limited comprehension.

Poor reading skills have been identified as one of the contributory factors to the mass failure in English language. This has prompted inquiries into problems often encountered by students in reading. Scholars have attributed poor performance in reading to factors such as poor vocabulary knowledge, poor knowledge of punctuations, teachers' incompetence and wrong choice of instructional strategies in teaching the different language skills. Other factors include poor spellings, text genre, text length, word difficulty, sentence and grammatical structures, phrases, idioms, and/or cultural information in the passage, and poor or non-usage of (audio-visual) teaching resources in the teaching and learning process. All the aforementioned factors can impede effective reading and the comprehension of the text.

Reading is one of the language skills that are actively taught and learned in schools (Andima, 2013). In a second language classroom, effective teaching of reading comprehension requires a systematic instructional procedure, motivation, active engagement of learners and a lot of supports in form of audio-visual teaching resources. But the teaching of reading in Gambian schools is a far cry from the ideal situation because there are very few or no teaching resources in schools. According to Dr. Ismaila Ceesay, in the past 10 - 20 years, the Gambian government has been investing more on the hardware of education such as the building of more schools, provision of furniture and so on; they have not been investing more on the software of education; that is, investing in teacher training and the quality of learning that takes place within the classroom (*Freedom Newspaper*, August 30, 2018). Perhaps because of the high illiteracy rate in the country and the huge cost involved, the government's major preoccupations are the construction of schools, improving school enrolment and completion figures and not the provision of standard libraries or adequate audio-visual teaching resources in schools. This gap has dire consequences for the quality of learning that takes place in Gambian schools especially in the teaching of a 'foreign' language like English to second language learners.

Teaching is a two-way interaction between the instructor and the learner. The use of audio-visual resources in teaching actively engages both the teacher and learners in conversation during the course of instruction. Audio-visual technology improves the quality of learning and students' learning experience because concepts are easily presented and comprehended as words are complemented with images and animations. However, instructional procedures in reading classrooms in the Gambia are largely conducted using the chalk and talk text-based approach with little or no use of audio-visual teaching resources. Since the turn of the millennium, there have been several advances in the field of education, especially, in the aspect of knowledge construction or instructional procedure in the classroom. There has been a significant shift from the chalk and talk approach to instructional processes that are hands-on, engaging, and learner-centered. The process of teaching and learning in schools has become highly structured with the use of instructional materials that are mostly audio-visual resources.

On the contrary, teachers' continued dependence on the chalk and talk instructional approach is probably one of the reasons for poor performance in reading comprehension as an aspect of English language among Gambian students. With advancements in the field of science and technology and its attendant effect on education, the need for audio-visual resources in teaching and learning can no longer be denied in the 21st century classroom. Considering the benefits of making use of audio-visual resources in classroom instruction, teachers need to be thoroughly trained to be able to improvise, develop and utilize audio-visual resources in order to improve the performance of their students. Audio-visual resources are materials that appeal simultaneously to both the senses of hearing and sight and often meant for educational, pedagogical or training purposes. There are some social media tools with audio-visual effects, notably YouTube and WhatsApp that can be used to support reading instruction and improve students' interest, retention and achievement.

The use of audio-visual resources as aids in the teaching and learning process is not new. Generally, audio-visual resources that are considered to be classroom friendly include like slides, filmstrips, microforms, projected opaque materials, educational DVDs, PowerPoint, television educational series and other multimedia materials on MP3 and MP4. But with quantum increase in the use of social media tools such as Facebook, WhatsApp, Twitter, 2go, YouTube, and so on by young people. Audio-visual enhanced social media tools can become important teaching resources to present the lessons in a simple, effective and interactive way to students. Youths spend lots of time exploring social media tools such as 2go, Facebook, Twitter, WhatsApp and so on, thereby contributing significantly to the number of users of ICT resources. Therefore, planning of the instruction and content to be learned through audio-visual resources have the potential to build and sustain students' interest in the learning process. The use of audio-visual resources in teaching also reinforces learning and makes it more permanent in them because students use multi-sensory approach to interact the object of learning. However, with increase in the awareness of and access to the ICT, android or smart phone technology and social media tools, audio-visual resources are now downloadable and accessible everywhere to both teachers and students.

Social media are technologies aided by computer purposely to facilitate smooth exchange of information, and ideas, via virtual communities and networks. The use of social media tools encourages innovation in information sharing. Social media provides opportunities for people, secondary schools teachers and students in particular, to access contents that are informative and educative. The interesting contents on social media engage students in reading and writing comments on the various social media tools. Social media has become a part of people's everyday lives and there is no point denying the prevalence of social media contacts among Gambian students. Students are able to access information with ease through the use of their mobile phones, and social media can be used to aid teaching and learning activities in schools when used as audio-visual resources.

This use of social media tools as audio-visual teaching resources is affordable and timely because of the proliferation of smart phones and other internet enabled devices in Gambian classrooms. Studies (Ode, 2014; Adamu, Ibrahim, Adamu & Ibrahim, 2018) have shown that the use of audio-visual resources improves effectiveness in learning in general and reading in particular because it provides opportunities for modelling, observation and feedback during the course of instruction. Similarly, Akram, Sufiana and Malik (2012) submit that learning becomes more interesting when sensory experiences are stimulated through pictures, motion pictures, slides and sounds, videos and other audio-visual tools. The use of audio-visual resources in the teaching of reading provides an ideal situation where technology aids the reading and comprehension of a text. It concretizes abstract ideas and aids the retention of the content that has been learned. Aggarwal (2009) posits that when technology is integrated into classroom instruction, students are able to experience things virtually.

Further still, Shuell and Farber (2001) aver that the evolution of audio-visual resources has made it very possible for learners to become more involved in learning activity. The increase in students' involvement is capable of improving their interest in reading and making the students become active participants in the learning process rather than mere passive recipients of the content. Mishra and Yadav (2004) conclude that the use of audio-visual resources in teaching stimulates the interest of learners in the subjects. Similarly, audio-visual resources have been found to aid content retention and recall because it allows the use of a variety of senses in the process of imparting knowledge and this intensity of the experience aids retention and recall via the use of multi-senses channels (Ogunbote & Adesoye, 2006). Another advantage of making use of audio-visual resources in reading includes allowing the learners to remain focused on the task during the process of teaching. Also, teachers are able to motivate the learners to actively participate in the process. Audio-visual resources engage learners' attention, provide opportunities for effective teacher-student communication, and promote good classroom management in the process of learning.

A study conducted by Gemalli and Claudio (2018) reported that audio-visual materials-based teaching strategy significantly improved English as Foreign Language (EFL) young learners' understanding of instructions and performance. The study concluded that the use of audio-visual resources benefits young learners when learning English. Adamu et al (2018) investigated the use of audio-visual resources in teaching the classification of living things among secondary school students in Sabon Gari Local Government Area of Kaduna State and reported that the use of audio-visual resources improved students' academic performance significantly. The findings of this study notwithstanding, it is evident that audio-visual resources are largely capital intensive and most Gambian schools cannot afford them. Also, none of the studies reviewed made use of audio-visual social media resources supported instruction. The studies were not conducted in the Gambia or on reading comprehension as an aspect of English language. In view of these gaps in literature, this study investigated the effects of audio-visual social media resources-supported teaching on senior secondary school students' interest, retention and achievement in reading in the Gambia.

Statement of the Problem

Reading is an important language skill because it determines academic success in other subject areas and it is used to mark literacy. Comprehension is at the heart of any reading activity and language teachers are expected to improve students' interest, retention and achievement in reading. The use of audio-visual resources can facilitate effective teaching and learning of reading in ESL classrooms. However, the teaching of reading in Gambian schools is largely influenced by textbook-based chalk and talk approach because of paucity of audio-visual teaching resources. Several studies have confirmed that the use of audio-visual resources in the teaching of several school subjects contributed significantly to achievement, interest and retention rates. These studies were conducted outside the shores of the Gambia and they largely focused on other subject areas apart from reading comprehension. This study therefore investigated the effects of audio-visual social media resources supported teaching on senior secondary school students' interest, retention and achievement in reading comprehension in the Gambia.

Hypotheses

The following null hypotheses were tested at 0.05 level of significance.

H₀1: There is no significant main effect of treatment on students' interest in reading comprehension.

H₀2: There is no significant main effect of treatment on students' retention in reading comprehension.

H₀3: There is no significant main effect of treatment on students' achievement in reading comprehension.

Theoretical Framework: Greg Kearley's Theory of Engagement (TE)

Engagement learning theory is based on the work of Kearley and Shneiderman (1998) based on the constructivist's fundamental idea that learning occurs during meaningful engagement of students in learning activities through interaction with others (people or materials). The theorists canvassed the meaningful engagement of students in learning activities through collaboration, cooperation and interaction with other learners and materials in worthwhile and gainful participatory activities during the process of learning. Greg's engagement theory of learning states that all students' activities involve active cognitive processes such as creative reasoning, decision making, interaction and evaluation. It further states that students are intrinsically motivated to learn when the environment is conducive. The fulcrum of the theory is learner-centeredness and constructivism. The theory has been introduced to virtually all fields to test what works and what does not. Principles of engagement theory are successful in collaboration activities, project-based learning and a focus on form activities. The theory provides a strong framework for this study through possibilities for a better academic achievement through participation, engagement, collaboration and connectivity with the audio-visual social media resources.

Problems and Practice of Teaching Reading in Schools

Recently, there has been a lot of research activities aimed at improving the quality of instruction in English language. All the activities in teaching, whether good or bad must include some sort of selection because it is impossible to teach the whole field of knowledge; teachers are forced to make decisions and select the part to teach. Instructional procedures in English language vary and include learner-centered, teacher-centered, text-centered and teacher-directed. Diagon (1967) explores some of the methods used by teachers in the teaching of different aspects of English and posits that methods that encourage independent reading in students are hinged on the use of classroom libraries which promote and develop the students' access to books and time in class for students to read and discuss books of their choice. Therefore, instruction in reading should be learner-focused with the teachers working with books that are developmentally appropriate for the child. Jones (1998) avers that the teaching of English as a Second Language is no small undertaking. Therefore, ESL teachers need to repeatedly model it and give the students sufficient time and opportunities to practice during the process of instruction. However, the teachers must endeavor to model what is right or very close to the native speakers' proficiency or performance. Okedara and Oden (2002) argued that most language teachers assume that they know what learners need in order to become competent, so they base their teaching on pre-existing models. Such instructional methods pay little or no attention to the resources that are available at the teachers' disposal, and how they can influence the teaching and learning of English. The process of instruction should be planned

to engage learners of English as a second language in natural setting for them to grapple with communicative activities (Amuseghan, 2007). The concern of the teacher in this method is to enable the learners to try from the very beginning not only to understand the message produced by other speakers but also to produce their own utterances in the second language, identify their own errors, express their own ideas and meaning.

Pedagogical practices in English cover the different aspects of the subject such as Essay writing, Reading Comprehension, Test of Orals, Lexis and Structure, Vocabulary Development, Registers and Summary writing. Each of these aspects is known for its peculiar problem area and they are taught and examined in the Gambian school system. Problems associated with the different aspects of English language are human-related and teaching resources-based. Several factors which include students' inability to effectively read and understand the comprehension and summary passages, construct grammatically correct sentences, spell words correctly and punctuate even simple sentences well. Also, the students' level of illiteracy in mechanical accuracy is largely responsible for the mass failure in English language in recent years (WAEC Chief Examiners' Report, 2017). Another problem confronting the effective teaching of English studies in schools is that most language teachers do not plan purposeful activities (lessons with enrichment activities) aimed at maximizing the effective use of all the resources available for teaching the subject. Proper planning of teaching and learning activities allows learners to be actively involved in the process of learning. This is corroborated by Amuseghan (2007) that language is better learned when learning is organized in a way that allows learners to access the use of any or all of the linguistic resources available to them in order to achieve meaningful communication. Komolafe and Yara (2010) highlight some of the problems encountered by language learners are mostly resources-based. Some of which are lack of teaching aids or materials, qualified teaching personnel, and so on.

Social Media and Students' Learning Outcomes

The use of social media tools has become common among the youths in the Gambia. Chen and Bryer (2012) present damning statistics on the use of social media tools in the 21st century with over 750million users worldwide comprising over 100 million Facebook users, 300 million users of WhatsApp messengers, an average of 177 million tweets per day on Twitter and over 3 billion views on YouTube daily. Though the users of social media cut cross all age groups, studies have shown that it is predominant among young persons (Umar and Idris, 2018) and students (Alrahmi, Othman & Musa, 2014). Oluwatoyin (2011) avers that educators tend to look at social media as encouraging unconventional literacy abilities especially in writing (spelling, grammar, and vocabulary) and reading skills needed within the school environment. Also, Marsh (2012) posits that social media is one of the factors responsible for poor language skills among students. It is notable that most teachers are worried about the adverse effect of social media on writing skills because students often incorporate symbols and short form of instant messaging into their school work or assignments.

Social media tools have been described as a form of distraction to students in and out of the classroom. However, it is evident that the contemporary English classroom has sophisticated learners who are able to use laptops, iPhones, Facebook, You Tube, WhatsApp and other social networking sites. Therefore, access to written text and reading via social media platforms with the aid of these modern technologies has become a reality in the 21st century language classroom. According to Agwu and Kalu (2011), the abuse of social media technologies has contributed significantly to poor reading skills and reading habits among students. They opined that in this era of information and communication technology, the general orientation of young people has unconsciously changed from reading and the love of books to these new technologies. However, social media present benefits which include promoting or encouraging social interaction among students and teachers. Also, common social media tools such as You Tube, Facebook and WhatsApp messenger with vast volumes of information stored on the internet offers significant audio-visual advantages that can be harnessed in teaching and learning situations.

Miah, Omar and Allison-Golding (2012) reported that very little is known about the scale of use and purpose of social media tools in education and if these tools are able to help or harm students' academic progress. On the contrary, studies have reported that social media tools such as Facebook and WhatsApp have significant effects students' learning outcomes. Pierce and Vaca (2008) investigated the differences in academic performance between teen users and non-users of various communication technologies and found that participants that are non-users of social media tools performed better than their counterparts that use communication technologies. The study concluded that everyday social media users are underachieving when compared with non-users. They concluded that social media users may feel socially successful in cyberspace but they are more likely to perform poorly in exams.

Audio-Visual Teaching Resources and Learning Outcomes

Teaching resources are generally regarded as materials (persons and objects) used in the instructional process to facilitate effective learning, retention and transfer of knowledge. There is available evidence in literature to support the fact that no matter how promising an instructional strategy is, it must be effectively combined with resources before learning can occur (Ofodu & Oso, 2015; Fakeye, Adebile & Eyengho, 2015). Common audio-visual resources in the teaching of English studies include ICT laboratory, language laboratory, VCD players, Smart or interactive board, computers and so on. Several studies have investigated the effects of audio-visual teaching resources on students' achievement. Sacha (2006) suggests the use of internet-related materials by language teachers to teach English reading skills noting that teaching material such as newspapers and any other printed material date very quickly unlike the internet-based materials which are continuously updated, visually stimulating, interactive, and promote a more active approach to language teaching.

Also, Lasisi (2001) avers that the use of resources such as ICT, language laboratory, charts and other teaching aids such as dictionaries, audio-based media or tapes in the teaching of English language is very important. Adeosun (2002) asserts that through the use of audio-visual technological-driven resources in teaching, learning becomes real to the learner as the world is brought to the classroom. To Ofodu and Oso (2015), modern technology can be effectively employed as resources to make the process of teaching easy, exciting, instructing and interesting. Okwara, Shiundu and Indoshi (2009) posited that availability of essential teaching resources is a condition ideal for effective teaching of reading skills. Audio-visual resources provide learners with aural and visual advantages in learning and through the use of audio-visual social media-supported resources in teaching, instruction becomes participatory. Omuna, Onchera, and Kimutai (2016) posit that the development of language skills in English depends on factors such as the availability and use of appropriate teaching resources. Also, Ofodu and Oso (2015) submit that the use of technological resources in teaching gives the learners a more concrete experience and effectively passes for a new method or departure from the traditional teaching method. When used in the process of teaching, audio-visual resources can aid knowledge recall/transfer and help students overcome the social problems posed by the chalk and talk method of instruction. However, Onchera (2013) found that many schools are not able to provide a variety of teaching resources needed for English instruction. Research has established a correlation between the use of teaching resources and effectiveness in instructional processes (Omosewo, 2004; Ofodu, 2007). Junias (2009) investigated factors affecting the teaching of reading skills in a second language classroom and established that insufficient reading resources, poor teaching methods, insufficient teachers' and learners' interactions were significant factors that made the teaching of reading unsuccessful. Also, the non-availability and poor utilization of the few teaching resources provided in schools affects students' achievement.

Method

Research Design

The pretest, posttest, control group, quasi-experimental research design was adopted for this study. The study made use of two instructional groups comprising an experimental group which was exposed to Audio-Visual Social Media Resources Supported Instruction and a control group exposed to conventional method of teaching reading.

Variables in the Study

Independent Variable: This is the instructional strategy which was manipulated at two levels namely: Audio-Visual Social Media Resources Supported Instruction and Conventional method of teaching.

Dependent Variables: These are three namely: students' interest in reading, retention in reading and achievement in reading.

Participants

Two provinces out of the six educational provinces in the Gambia were randomly selected for the study. The participants were Grade 11 students in intact classes from four randomly selected senior secondary schools in

the provinces. Two schools were selected from each province and randomly assigned to treatment (Audio-Visual Social Media Resources Supported Instruction) and control (Conventional method).

Content and Research Instruments

The content of the instructional package comprised passages taken from the participants' recommended textbooks. It covered four reading comprehension passages on different topics. Two instruments were used for this study, they include:

Achievement and Retention Test on Reaching Comprehension (ARTRC): The instrument was a passage adopted from the students' recommended textbook. It was used as both the pretest and posttest to measure students' achievement and retention rate after reading a passage. Questions set on the passage were made parallel to those obtainable in WASSCE examinations. The reliability of the instrument was determined by using test-retest method, and a reliability co-efficient of 0.87 was obtained. ARTRC was scored using the criteria suggested in the WASSCE marking guide for May/June 2019.

Students' Interest in Reading Comprehension Questionnaire (SIRCQ): SIRCQ was designed by the research and it comprised two sections. Section A is meant to elicit demographic data of the respondents like school, sex, class, age; and section B consisted of 15 items to measure students' interest in reading comprehension. It contained information on students' interest and general concern on the teaching and learning of reading. Students' response to the items was a three-point scale closed-response mode of *Always (A)*, *Sometimes (S)*, and *Never (N)*. The scoring for the positive items was based on 3, 2, and 1 for always, sometimes and never respectively and reversed for the negatively worded items. To validate the SIRCQ, the instrument was administered to 45 students in Grade 11 from a school that was not part of the main study to determine the reliability and internal consistency of the scores using Cronbach alpha formula. The standardized alpha value of 0.81 was obtained.

Treatment and Administration of the Pretest and Posttest

The study lasted six weeks with the pretest administered at the end of the first week of the experiment. Students in the experimental and control groups were exposed to pretest using Achievement and Retention Test on Reaching Comprehension (ARTRC) and Students' Interest in Reading Comprehension Questionnaire (SIRCQ). Treatment was for a period of four weeks. It involved two groups - the experimental group taught using Social Media Audio-Visual Resources Supported Instruction and the control group that was exposed to the Conventional teaching method. There were two contact sessions of English language instruction weekly for the duration of the four weeks. The posttest was administered in the 6th and final week of the experiment using Achievement and Retention Test on Reaching Comprehension (ARTRC) and Students' Interest in Reading Comprehension Questionnaire (SIRCQ).

Data Analysis

The data collected were analyzed using inferential statistics of Analysis of Covariance (ANCOVA) with the pretest scores as covariates. The Estimated Marginal Mean (EMM) was computed to show how the groups performed, and Bonferroni's Post-hoc analysis to detect the source of significant difference among the two groups where they existed. All the hypotheses were tested at 0.05 level of significance.

Results and Discussion

HO1: There is no significant main effect of treatment on students' interest in reading comprehension.

Table 1 shows that there was a significant main effect of treatment on students' interest in reading comprehension ($F_{(1; 394)} = 773.226$; $p < .05$; partial $\eta^2 = .662$). The effect size is 66.2%. this implies that 66.2% variance in the post-interest of students' in reading comprehension is accounted for by the treatment, for there is a significant difference in the interest of students across treatment group. Therefore, the null hypothesis 1 was rejected. To determine the magnitude of the students' interest, an estimated marginal mean was computed and reported in Table 2.

Table 1. Analysis of Covariance (ANCOVA) of Students' Post-Interest in Reading

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	41607.255	2	20803.627	459.066	.000	.700
Intercept	16370.626	1	16370.626	361.245	.000	.478
Pre-Interest	995.802	1	995.802	21.974	.000	.053
Treatment	35040.487	1	35040.487	773.226	.000	.662
Error	17854.997	394	45.317			
Total	258894.000	397				
Corrected Total	59462.252	396				

Table 2 shows that the students in the experimental group who were taught using audio-visual social media resources-supported instruction had the higher post-interest mean score (31.900) while the students in the control group who were taught using the conventional method had a lower mean score (12.486). This implies that the students in the experimental group had increased interest in reading comprehension than the students in the control group.

Table 2. Estimated Marginal Means for Post-Interest in Reading

Treatment	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Experimental Group	31.900	.480	30.956	32.844
Control Group	12.486	.492	11.520	13.453

Table 3 shows that there is significant difference in the post-interest mean scores of the students in the experimental group and their counterpart in the control group (mean difference = 19.414; $p < .05$). This implies that the use of audio-visual social media resources-supported instruction was effective in improving students' interest in reading comprehension.

Table 3. Bonferroni Post-hoc Analysis of Post-Interest in Reading

(I) Treatment	(J) Treatment	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
Experimental Group	Control Group	19.414	.698	.000	18.041	20.786
Control Group	Experimental Group	-19.414	.698	.000	-20.786	-18.041

HO2: There is no significant main effect of treatment on students' retention in reading comprehension.

Table 4 shows that there was a significant main effect of treatment on students' retention in reading comprehension ($F_{(1, 394)} = 2083.581$; $p < .05$; partial $\eta^2 = .841$). The effect size is 84.1%. this implies that 84.1% variance in the post-retention of students' in reading comprehension is accounted for by the treatment, for there is a significant difference in the retention of students across treatment group. Therefore, the null hypothesis 2 was rejected. To determine the magnitude of the students' retention, an estimated marginal mean was computed and reported in Table 5.

Table 4. ANCOVA of Students' Post-Retention in Reading

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	44243.730	2	22121.865	1053.430	.000	.842
Intercept	20762.307	1	20762.307	988.689	.000	.715
Pre-Retention	662.279	1	662.279	31.537	.000	.074
Treatment	43754.868	1	43754.868	2083.581	.000	.841
Error	8273.937	394	21.000			
Total	245679.000	397				
Corrected Total	52517.668	396				

Table 5 shows that the students in the experimental group who were taught using audio-visual social media resources-supported instruction had the higher post-retention mean score (32.322) while the students in the control group who were taught using the conventional method had a lower mean score (11.317). This implies

that the students in the experimental group had increased retention in reading comprehension than the students in the control group.

Table 5. Estimated Marginal Means for Post-Retention in Reading

Treatment	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Experimental Group	32.322	.322	31.690	32.955
Control Group	11.317	.329	10.670	11.964

Table 6 shows that there is significant difference in the post-retention mean scores of the students in the experimental group and their counterpart in the control group (mean difference = 21.005; $p < .05$). This implies that the use of audio-visual social media resources-supported instruction was effective in improving students' retention in reading comprehension.

Table 6. Bonferroni Post-hoc Analysis of Post-Retention in Reading

(I) Treatment	(J) Treatment	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
Experimental Group	Control Group	21.005	.460	.000	20.100	21.910
Control Group	Experimental Group	-21.005	.460	.000	-21.910	-20.100

HO3: There is no significant main effect of treatment on students' achievement in reading comprehension.

Table 7 shows that there was a significant main effect of treatment on students' achievement in reading comprehension ($F_{(1, 394)} = 275.079$; $p < .05$; partial $\eta^2 = .411$). The effect size is 41.1%. this implies that 41.1% variance in the post-achievement of students' in reading comprehension is accounted for by the treatment, for there is a significant difference in the achievement of students across treatment group. Therefore, the null hypothesis 3 was rejected. To determine the magnitude of the students' achievement, an estimated marginal mean was computed and reported in Table 8.

Table 7. ANCOVA of Students' Post-Achievement in Reading

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	4336.767	2	2168.383	317.865	.000	.617
Intercept	2854.395	1	2854.395	418.428	.000	.515
Pre Achievement	184.095	1	184.095	26.987	.000	.064
Treatment	1876.507	1	1876.507	275.079	.000	.411
Error	2687.752	394	6.822			
Total	19947.000	397				
Corrected Total	7024.519	396				

Table 8 shows that the students in the experimental group who were taught using audio-visual social media resources-supported instruction had the higher post-achievement mean score (8.366) while the students in the control group who were taught using the conventional method had a lower mean score (2.921). This implies that the students in the experimental group performed better in the post-achievement test in reading comprehension than the students in the control group.

Table 8. Estimated Marginal Means for Post-Achievement in Reading

Treatment	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Experimental Group	8.366 ^a	.207	7.958	8.773
Control Group	2.921 ^a	.213	2.503	3.340

Table 9 shows that there is significant difference in the post-achievement mean scores of the students in the experimental group and their counterpart in the control group (mean difference = 5.444; $p < .05$). This implies that the use of audio-visual social media resources-supported instruction was effective in improving students' achievement in reading comprehension.

Table 9. Bonferroni Post-hoc Analysis of Post-Achievement in Reading

(I) Treatment	(J) Treatment	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
Experimental Group	Control Group	5.444	.328	.000	4.799	6.090
Control Group	Experimental Group	-5.444	.328	.000	-6.090	-4.799

The results showed that the treatment was significant on students' interest in reading. This is supported by the findings of Hidi (2001) and Ofodu and Oso (2015) that the use of modern technology as resources can be used to improve students' interest in the subject and the process of instruction. The result is also supported by Wade, Buxton, and Kelly (1999) and Schraw, Bruning, and Svoboda, (1995) that building students' interest in reading is related to the presentation and nature of text because interest is a complex cognitive phenomenon that is affected by multiple text and reader characteristic. The result also supports the findings of Akrain, Sufiana and Malik (2012) that students' interests improves when they are allowed to interact with items that they are familiar with during the process of instruction such as social media tools. This supports the findings of Wade, Buxton, and Kelly (1999) and Shuell and Farber (2001) that when readers are able to make connections between information and their prior knowledge or previous experience, it increases their interest in reading.

The result also revealed a significant effect of treatment on students' retention rate in reading comprehension. The result supports the findings of a similar study by Schiefele (1992) on how the relationship between students' interest and recall or retention. Schiefele found that an improvement in students' reading led to better engagement in deeper level processing which improved their retention rate. The findings also agree with Ogunbote and Adesoye (2006) that the use of teaching resources in reading instruction was found to contribute significantly to students' recall and retention of the content. Lastly, the result showed that social media-supported audio-visual resources had a significant effect on students' achievement in reading. This result supports the findings of Lasisi (2001) and Adeosun (2002) that the use of resources such as ICT, language laboratory, charts and other audio-visual teaching resources in the teaching of English language is capable of making the process of instruction real to the learner as the world is brought to the classroom and this improves students' achievement.

The result of the study on the effect of social media-supported audio-visual resources on students' achievement also supported the findings of Fakeye, Adebile & Eyengho, (2015) on the use of audio-visual resources in teaching and learning process. However, the findings of this study disagree with the result of a similar study by Miah, Omar and Allison-Golding (2012) that reported that very little is known about the scale of use and purpose of social media tools in education and if these tools are able to help or harm students' academic progress. Also, Pierce and Vaca (2008) found that participants that are non-users of social media tools performed better than their counterparts that made use of communication technologies.

Conclusion

The study investigated the effects of social media-supported audio-visual teaching resources on students' learning outcomes in reading comprehension. The result showed that the treatment was significant on students' interest, retention and achievement in reading comprehension. Participants in the experimental group showed improved interest, demonstrated higher retention rates and performed better in reading comprehension than their counterparts in the control group. The result suggests that social media tools with audio-visual properties such as YouTube and WhatsApp can be used to enhance the process of teaching and improve learning outcomes in reading comprehension.

Recommendations

Based on the findings of this study, the following recommendations were made:

1. Language teachers should endeavor to make use of audio-visual resources in teaching reading comprehension.
2. Social media tools should be exploited for educational gains in the classroom instead of terming the devices as a tool that distracts learners from learning.
3. There is a need to replicate this study by using moderator variables such as language anxiety, attitude, verbal ability and learning style in reading comprehension.

4. Social media-supported teachings resources tools should be introduced to language instruction in the senior secondary school.
5. The Gambian government should make teaching resources available and encourage the use of audio-visual resources by teachers to improve the quality of instruction in schools.

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