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GENDER DIFFERENCE IN FIELDTRIP AND VIDEO TECHNOLOGY METHODS OF TEACHING SOCIAL STUDIES IN JUNIOR SECONDARY SCHOOLS

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ABSTRACT: *The study investigated gender difference in fieldtrips and video-technology methods in teaching Social studies in Junior Secondary Schools in Port Harcourt Local Government Area of Rivers state. Two research questions and two hypotheses guided the study. The research design adopted for this study was a quasi-experimental design which made use of pre-test, post-test, non-randomized, non-equivalent, control group design. From a population of 6, 240 Social Studies students which are made up of 2, 467 males and 3, 773 females of 13 schools in Port Harcourt LGA, 195 JSS II Social Studies students of three intact classes randomly drawn from three Government co-educational Secondary Schools constituted the sample for the study. The instrument for data collection was an achievement test constructed by the researcher, titled, "Social Studies Achievement Test (SSAT)". The Social studies Achievement Test (SSAT) is a multiple choice objective test consisting of twenty five (25) items with five options (A-E). The test instrument was validated and had a reliability coefficient of 0.87 through Kuder-Richardson 20 (KR20) formula as a measure of the instrument internal consistency. The study was conducted for seven (7) weeks. The second week for obtaining the pre-test score while the 7th week for posttest scores. The main instruction lasted for four (4) weeks. Mean, standard deviation and analysis of covariance (ANCOVA) were the statistical tools used for analyses. The hypotheses were tested at 0.05 level of significance. The results of the study showed that there is a significant difference in the mean achievement score of male students taught with fieldtrips and those taught with video technology ($F_{(1, 67)} = 4.279$, $p = .042$). However, it was found out that there is no significant difference in the mean achievement score of female students taught with fieldtrips and those taught with video technology ($F_{(1, 62)} = .391$, $p = .534$). Based on the findings of this study, it was concluded that fieldtrips and video technology could be effectively used to teach students irrespective of their gender. Therefore, it is recommended that teachers incorporate these teaching methods in teaching Social Studies especially concepts that require hands-on information.*

KEY WORDS: gender, fieldtrip, video technology, instructional strategy, social studies.

INTRODUCTION

Gender is a socio-culturally ascribed attribute which differentiates feminine from masculine (Imoko, 2004). Gender is used to describe certain characteristics of men and women which are naturally, culturally and socially determined while those that are biologically determined are

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regarded as sex. Gender is one of the factors interacting with achievement in school subjects (Ekwueme & Umoinyang, 2005). However, studies on how it actually influences achievement have till now reported conflicting results, implying contradicting evidences in academic achievement of students due to gender. Some researchers like Mari, (2002) and Ifeakor, (2005), reported that male students have a higher achievement in school subjects than females. Some of the factors identified to have accounted for the observed differences in the achievement of male and female students are sex-role stereotyping, masculine image of some school subjects and female socialization process. Contrary to the above finding, Ekwueme and Umoinyang, (2005) reported that gender influenced achievement in the favour of females. While on the other hand, Danmole and Femi-Adeoye, (2004) found no significant difference in the achievement of students due to gender. Instead, they opined that achievement of both males and females can be affected by teaching and learning styles. In view of these diverse views and inconsistencies there is need to investigate further on whether gender plays any significant role in Fieldtrips and Video technology as instructional methods in school subjects like Social Studies.

Fieldtrips or field-studies are outdoor learning exercises undertaken by teachers and students in certain aspects of subjects such as Social Studies, so as to give the students the opportunity to acquire knowledge. It is a kind of learning that is based on experiences which take students out of their usual classroom setting to a new type of learning environment. Ajaja (2010) defined fieldtrips as trips arranged by the school and undertaken for educational purpose in which the students go to places where materials for instruction may be observed and studied directly in their functional setting. The use of the term field work/fieldtrip emphasizes some of the formal exercises, which are done outside the classroom usually in Humanities, Sciences and Social Sciences. Fieldtrip is one of the fundamental methods of instruction adopted for teaching and learning in social studies education (Mezieobi, Fubara & Mezieobi, 2008). Fieldtrip method of teaching enables students gain firsthand information, and provides opportunities for them to see and possibly touch and feel what they have heard and read about in books.

According to Cambridge Dictionary (2017), video technology involves recording and playback of motion picture and sound. Business Dictionary (2017) stated that videos usually include audio components that tally with the motion pictures that are in display. This implies that there are still silent videos without audio component. Dictionary.com (2017) also buttressed the idea of silent and sound-induced videos by describing videos as visual media product having moving images, with or without audio. Advancement in technology has influenced videos in terms of quality and accessibility.Stanic (2014) stated that videos stimulates 2 senses out of the 5 senses humans possess and this is highly supported by cognitive theorists in dual-coding. Prud'homme-Genereux, Schiller, Wild, and Herreid, (2017), reported to have conducted workshops that proved effective in training instructors on video production and incorporating those videos in flipping their classrooms. According to Arunima (2017), with reference to YouTube which is considered the most comprehensive library of educational videos, some benefits of videos include:

- To encourage students' engagement.

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- To increase students' motivation to learn.
- To create more time for class discussions in flipped classrooms.
- Videos serve as supplements for lessons.
- To gather instructional, related, relevant videos found on YouTube and archive for reuse with subsequent classes.
- Short clips from documentaries are used to provide context to topics.
- Videos are used to provide extension classes for overachieving learners.
- Videos are used to demonstrate experiments that cannot be afforded.

Empirical studies in Nigeria involving Fieldtrips and Video Technology instructional methods as it relates to gender difference in Social Studies are very scanty especially in Rivers State. Nevertheless, Ukwungwu (2002) carried out a meta-analysis of empirical studies on gender related difference in achievement and interest in the sciences. Two research questions and eight hypotheses guided the study. The study however reported that the magnitude of gender difference in achievement and interest in science was in the favour of males. He advised that the females require greater attention during instruction through the use of activity orientated teaching strategies that are not gender biased.

Mari (2002) (already reviewed), also discovered that gender influenced the performance of students with the males being at advantage when he investigated the gender related differences in acquisition of formal reasoning schemata.: pedagogic implication of teaching Chemistry using process based approach. Similarly, Obeka (2007) equally reported that males achieved higher than females in geography. Other studies include those of Yusuf and Afolabi (2010); Viann (2002); and Hyde and McKinley (1997). However, Nworgu (2004) stated that females are not inferior to males in intellectual capability since there is no biological proof to that effect. Igboegwu (2005) opined that there is nothing inherent in the physical sciences that cause the observed differences in the performances among males and female.

Consequently, it is against these conflicting reports that the researcher deems it fit to investigate into the role gender play in Fieldtrip and Video Technology methods of teaching Social Studies. Accordingly, the following research questions and hypotheses guided this study.

Research Questions

1. What is the difference in the mean achievement scores of male students taught with fieldtrips and those taught with video technology?
2. What is the difference in the mean achievement scores of female students taught with fieldtrips and those taught with video technology?

Hypotheses

1. There is no significant difference between the mean achievement scores of male students taught with fieldtrips and those taught with video technology.

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2. There is no significant difference between the mean achievement scores of female students taught with fieldtrips and those taught with video technology.

METHODOLOGY

The research design for this study was a quasi-experimental design which made use of pre-test, post-test non-randomized, non-equivalent control group (intact classes). There were two experimental groups and they were taught using fieldtrip and video technology respectively, and one control group which was taught using lecture method.
A graphical representation of the design is presented below:

Group	**Pre-Test**	**Treatment**	**Post-Test**
Experimental (E_1)	O_1	X_1	O_2
Experimental (E_2)	O_1	X_2	O_2
Control (C)	O_1	-	O_2

Where: E_1 = Experimental group 1= Fieldtrip = FDT
E_2 = Experimental group 2 = Video technology = VDT
C = Control group
O_1 = Pre-test; O_2 = Posttest; X_1 = Treatment 1 = FDT; X_2 = Treatment 2 = VDT
- = No treatment; ----- = Intact class

From a population of 6, 240 Social Studies students which are made up of 2, 467 males and 3, 773 females of 13 schools in Port Harcourt LGA, 195 JSS II Social Studies students of three intact classes randomly drawn from three Government co-educational Secondary Schools constituted the sample for the study. The instrument for data collection was an achievement test constructed by the researcher, titled, **"**Social Studies Achievement Test (SSAT)". The Social studies Achievement Test (SSAT) is a multiple choice objective test consisting of twenty five (25) items with five options (A-E). This was constructed using Rivers State Junior Secondary School Social Studies syllabus and Junior Secondary School Certificate Examination (JSSCE) past questions. The test instrument covered social studies topics selected for this study namely vegetation and transportation system in Nigeria. Four marks were awarded to every correct answer. The maximum and minimum scores for the instrument were 100 and 0 respectively. The SSAT was administered before the treatment to obtain the pre-test scores. The reshuffled version of the social studies achievement test (SSAT) was thereafter administered to the students after the treatment. The scores so obtained constituted the posttest scores. However, before administering the instrument to the students, the test instrument was subjected to validity and reliability test. For validity, the instrument was given to four experts, two in Educational Measurement and Evaluation from the University of Port Harcourt, one Social studies education expert also of University of Port Harcourt and one Social studies Junior Secondary School teacher. To aid the activities of the experts, the title of the study, objectives of the study, research questions and hypotheses of the study were also

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presented to the experts. Comments, observations and errors pointed out by the experts were used to modify the instruments before subjecting the instruments to field work. In the case of reliability, a reliability coefficient of 0.87 was obtained through Kuder-Richardson 20 (KR20) formula as a measure of the instrument internal consistency.

The study was conducted for seven (7) weeks. During the first week, the teachers for the experimental groups received training designed to equip them with the necessary instructional techniques for implementation of treatment and they were given the lesson format, while the teacher for the control group used lesson note format based on the conventional method. In the second week SSAT was administered to obtain the pre-test score. The main instruction lasted for four (4) weeks. The last week, was the 7th week, and was used for the post-test. The results obtained from the administration of the post-test were collected by the researcher personally. Mean and standard deviation were used to analyze and answer the research questions, while the hypotheses were analyzed with analysis of covariance (ANCOVA) and tested at 0.05 level of significance.

RESULTS

Research question 1: What is the difference in the mean achievement scores of males taught with fieldtrips and those taught with video technology?
Hypothesis 1: There is no significant difference in the mean achievement score of male students taught with fieldtrips and those taught with video technology.
Table 1: Summary of ANCOVA analysis on the difference in the mean achievement score of male students taught with fieldtrips and those taught with video technology

			Pre-test		Post-test		Gain	
Group	**Sex**	**N**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**
FDT	Male	35	48.46	10.44	65.03	12.05	16.57	12.08
VDT	Male	35	58.74	6.04	75.54	8.16	16.80	8.33

Source of Variation	**Type III Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
PRE-TEST	1175.844	1	1175.844	13.070	.001
GROUP	385.012	1	385.012	4.279*	.042
Error	6027.813	67	89.967		
Total	354944.000	70			
Corrected Total	9138.286	69			

* Significant at 0.05 level of significance
FDT = Fieldtrips; VDT = Video Technology

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Table 1 showed the Mean and standard deviation on the difference in the mean achievement scores of males taught with fieldtrips and those taught with video technology. It showed that the male students taught with field trip had a mean achievement score 16.57, SD = 12.08 while the male students taught with video technology had a mean achievement score of 16.80, SD = 8.33. This depicts an insignificant difference in the achievement scores of male students taught with fieldtrips and video technology.

On further statistical analysis via ANCOVA, the result showed that there is a significant difference in the mean achievement score of male students taught with fieldtrips and those taught with video technology ($F_{(1, 67)} = 4.279$, $p = .042$). Hence the null hypothesis was rejected at .05 Alpha level.
Research question 2: What is the difference in the mean achievement scores of female students taught with fieldtrips and video technology?

Hypothesis 2: There is no significant difference in the mean achievement score of female students taught with fieldtrips and those taught with video technology.

Table 4.9: Summary of ANCOVA analysis on the difference in the mean achievement score of female students taught with fieldtrips and those taught with video technology

			Pre-test		Post-test		Gain	
Group	**Sex**	**N**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**
FDT	Female	35	48.57	7.83	66.97	13.06	18.40	12.09
VDT	Female	30	56.27	6.30	73.07	6.88	16.80	7.89

Source of variation	**Type III Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
PRE-TEST	1024.147	1	1024.147	10.320	.002
GROUP	38.840	1	38.840	.391	.534
Error	6152.692	62	99.237		
Total	324320.000	65			
Corrected Total	7776.985	64			

FDT = Fieldtrips; VDT = Video Technology

Table 2 showed the mean and standard deviation on the effect of fieldtrips and video technology on female students' mean achievement score in social studies. It showed that the female students taught with fieldtrip had a mean achievement score 18.40, SD = 12.09 while the female students taught with video technology had a mean achievement score of 16.80, SD = 7.89. This indicates an insignificant difference in their achievement scores.

Table 2 further showed that there is no significant difference in the mean achievement score of female students taught with fieldtrips and those taught with video technology ($F_{(1, 62)} = .391$, $p = .534$). The null hypothesis was upheld at 0.05 level of significance.

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DISCUSSION

Findings from this study showed that there is a significant difference in the mean achievement score of male students taught with fieldtrips and those taught with video technology. This findings depicts a disparity in the academic performance of male students taught with fieldtrips and video technology methods and is inconsistence with the view of Viann (2002), who reported no significant gender-related differences when individualized learning method with three treatment sections using cooperative learning strategy on social studies were used. Similarly, Yusuf and Afolabi (2010) found no significant gender-related differences when students were exposed to individualized learning method. It however implies that gender does not play any significant role in academic performance of students when innovative instructional strategies are employed in teaching students.

Conversely, it was found out that there is no significant difference in the mean achievement score of female students taught with fieldtrips and those taught with video technology. This showed that the performance of students is not dependent on gender when taught with different instructional methods. This findings is consistence with the view of Hyde and McKinley (1997) who opined that the more exposure female are getting to social studies and science classes through some innovative instructional strategies like fieldtrips and video technologies, the better their scores in terms of academic performance. The efficacy of the instructional strategy employed in teaching the students is what necessarily determines the outcome of their performance and not their gender disparity.

CONCLUSION AND RECOMMENDATIONS

Based on the findings of this study, it could be concluded that fieldtrips and video technology could be effectively used to teach students irrespective of their gender. Therefore, it is recommended that teachers incorporate these teaching methods in teaching Social Studies especially concepts that require hands-on information.

Since Fieldtrips and Video technology have been found to be effective strategies for enhancing achievement, interest, and that the two methods are not gender bias in other studies by the author, government in conjunction with other professional associations should organize work-shops, seminars, conferences and in-service training on a regular basis to train teachers on the use of technology and activity based teaching strategies specifically Fieldtrips and Video technology.

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