

Evidence of Gender Differences in Students' Achievement in Tie and Dye When Exposed to Video Clips and Conventional Media Enugu State, Nigeria

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Abstract: The study investigated the evidence of gender differences in student's achievement in tie and dye when exposed to video clips and conventional media. The study employed a non equivalent quasi experimental 2×2 factorial research design. We used 86 secondary school students from 2 schools for the study. We used Visual Arts Achievement Test (VAAT) to collect data. Two hypotheses were tested. The data were analyzed using descriptive statistics and hierarchical Analysis of Covariance (ANCOVA). The results showed that there was a significant main affect for gender on student's achievement in tie and dye $F_{(1,81)} = 4.4$, $p = 0.039$, partial $\eta^2 = 0.053$ and there was no significant interaction effect of mode of instructional media and gender $F_{(1,81)} = 0.152$, $p = 0.697$. We recommended that the Ministries of Education should ensure that teachers should incorporate video clips instructional media for secondary students. Moreover, the teachers should take care of gender differences in dishing out their instructions to the students.

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INTRODUCTION

Tie-dye is that the creation of styles or patterns that seem on unwoven, woven and written materials. It would sound easy, however, the tie-dye style could be a complicated combination of inventive talent and trendy technology. It includes making a style structure: deciding what forms of styles a cloth ought to be made from or what forms of colours for the specified have an effect on. Artists within the space of textile develop new ideas for planning materials which can involve turning out with many style samples for purchasers. Textile designers experiment with color, material and texture and that they follow vogue trends with an eye fixed on what is

returning next. Designers tend to concentrate on one in all the primary areas of textile design: textiles utilized in interiors, for home decorating functions like upholstery on piece of furniture, curtains, rugs and carpets and materials for covering and alternative product. The fundamental method of planning these textiles is comparable.

Tie-dye is one in every of the native craft that folks from completely different continents practiced over years as well as the African countries. In line with Solomon and Ezra^[1], tie-dye may be a technique of folding and attachment of fabric to avoid the penetrating of dye. A dye is a substance that can impart colour to textiles, paper, leather and alternative materials. The designer cannot alter the colouring by laundry, heat, light or alternative

factors to that the fabric is probably going to be exposed. Tie-dye may be a technique of colouring materials by attachment or handicraft material along to forestall the absorption of dye to a specific space. The tie-dye technique involves numerous ways of folding materials, tying, binding and colouring of the material in a very dye bathtub^[2]. The binding prevents the tied parts of the material from receiving the dye and the finite elements untied, reveal the colouring styles. Colouring is that the method of applying colour on an artifact to provide a style^[3]. Though the techniques of tie-dye vary from culture to culture, the thought of dyeing remains one in all the oldest strategies of printing style on material. Tie-dye could be a trendy term for a collection of ancient resist-dyeing techniques and the product of those processes. The method of tie-dye usually consists of folding, twisting, pleating, knotting, stitching, tying or crumbling material of a garment and binding with string or rubber bands, followed by application of dyes^[3]. The manipulations of the material before the applying of dye area unit referred to as resists as they part or utterly forestall the applied dye from colouring the material. The designer will tie fabric with sturdy strings in varied ways that before immersing it within the dye bathtub. The colour is absorbed altogether except the tied areas so revealing a floral result that seems by laxation the coloured material. Tie-dye is practiced in several elements of the planet. The method for tie-dye varies across the world; however, the standard strategies in African nation and most elements of African countries are similar^[4]. The method entails; material preparation, removal of starch, mercerization operation, before the material is tied or knotted in bound areas and then coloured. The dye will not penetrate the tied areas and then patterns can kind within the material. Stones and shells are usually accustomed shaped models in material. The creator will repeat the fastening method for later colours until it has finished. The materials used for tie-dye are cotton materials, dye, hydrosulphite, sodium hydroxide, common salt, cotton thread for fastening, cold water and nose mask/guard. Others are safety glasses/sunshade, apron/overall, rain boot, petrolatum, mouth mask/guard, dye pot or any instrumentation which will be accustomed dye, rubber gloves to hide hands, spoon, scissors, thread pebbles or grain sorghum seeds, long stick for stirring throughout colouring.

The common dyes chemicals used for tie-dye in Nigeria are Caustic Soda, Sodium Hydrosulphite, Soda Ash and Common Salt^[5]. The Dye chemicals are suitable for some fabric like cotton, Burlap, Linen, some Rayon and Wool. While some like Nylon, Polyester and Acrylic are not suitable for tie-dye because it will not allow the dye chemicals to penetrate through the fabric^[6, 7]. The quality of a good tie-dye depends on the fabric and method the artist adopted in the period of processing.

The offered strategies square measure the circle, pleating, knotting, clumb, marbling, spiral, coil and handicraft methodology. However, in Nigeria, the common strategies for colouring material square measure Circle, knotting, edible fat and fold methodology. The procedures for colouring embody Step I is to boil water on the hearth. Step II is to fold and tie the fabric in keeping with the specified style. Step III combine the dye chemical with cooked water guaranteeing that you just wear gloves and place the tied textile right away. Step IV stirs perpetually for a few minutes and take away the fabric from the dye bath; Step V rinse the fabric well in cold water and unfold it to dry. If one is exploitation additional then one colour, enable it to dry. If the designer needs to use additional then one color, the designer ought to begin with the lightest, colour and Step VI the designer ought to use the string, raffia or rope, re-tie the fabric and place within the next dye tub. Therefore, these steps of tie-dye method do not seem to be learned or drained a vacuum however rather to be tutored by associate skilled. The skilled explains the systematic method for the scholars to master the method to amass the desired skills for tie-dye. Aggarwal^[8] viewed sensible work as a kind of labour geared toward providing direct expertise to students and equally alter the scholars to much perceived principles, phenomena and processes by the investigation, especially when it involves male and female folks. In tie-dye, the scholars can learn all the procedures required in tie-dye.

Tie-dye may be a content space in visual arts subject in secondary colleges. The thought of the tie-dye method, the strategy may be a method and materials choice delivered through the information in instruction. The low achievement in tie and dye necessitated the employment of video clips instruction to assist students to find out and develop a lot of interest within the space. WAEC Chief Examiner's Report of May/June 2014 and May/June 2017 showed that students do not have smart tries in most queries set in these areas thereby touching the student's achievement in Senior Secondary School tie-dye method. Therefore, the requirement to enhance student achievement through video clips is also another.

Video clips could be a short electro-motion image that is a part of the larger recording that principally less than quarter-hour or any short video less than the length of a standard video. The video clip is at the same time integrated into core intelligence have interaction each hemispheres of the brain and manipulate student's alpha and beta brain waves that is relax or create them alert in teaching and learning^[9]. Video clips are extremely effective academic media^[10] and it will increase student's engagement towards the educational materials^[11, 12]. Teaching tool is potential to faucet as tutorial tools that offer powerful psychological feature and emotional expertise to students/learners. Video clips convey a

message to learners at a deeper level of understanding by touching they are feeling. Scott expressed that photos represent a thousand words whereas motion photos represent a million words of rationalization. Several studies have shown that video instruction incorporates an important have an effect on student's achievement in teaching and learning^[13-17]. The video clips tutorial media, therefore, could contribute greatly to tutorial delivery.

Video clips instruction additionally refers to resources info remodel through electronic visual and audio to the learner. Suleiman^[18] maintained that tutorial media are media that are available visual, audio and audiovisual forms that aid in comprehending abstract ideas and phenomena within the teaching and learning method. Video clips instruction is associate degree tutorial delivery drive methodology of teaching from the teacher to learner in an exceedingly well-developed and customized kind to vary behaviours of the learner. The assertion by Darking-Hammond *et al.*^[19] reflects that the academic technique used by the teacher plays a very important role within the acquisition of skills and pregnant learning. They are varied tutorial materials accessible for teachers to use to show a lesson and promote life-long learning that video clip is one among them. Given this assertion, Yusuf^[20] reiterates that instructional materials are those things that the teachers use to enhance student learning such as books, charts, audio-visual aids and resource person among others. Video clips as an instructional media when well developed it will concretize and enhance the teaching and learning process. The video clips instructional media has the capacity of influencing all the senses and improve the learner's achievement.

The learner's achievement can increase by look the method of tie-dye in video clips that are not out there in ancient schoolrooms. Mezieobi^[21] reportable that ancient room has the characteristics of teacher's domination, learners are passive, ways of directions are mostly expositive, the teacher makes very little if any use of syllabus resources and also the room setting is neither artistic nor congenial for teaching and learning. Supported the higher than nature of the standard room, the teaching, and learning of tie-dye might not be effective and economical^[22] reportable that in a very typical approach, the teacher communicates ideas to learners by direct verbal discourse. In support, Mabekoje lamented that the strategy of teaching in Nigerian school rooms is speak and chalk which the academics parade themselves because the central figure.

The researcher farther noted that the implication is that learners become discouraged and passive. Lecturers typically use queries and answers technique, scan from textbooks, copy notes on the blackboard for college students to repeat once teaching. The higher than form of

approach could be a teacher-centred, therefore, encourages committal to memory and fails to encourage student's interest and increase tutorial achievement.

Achievement refers to what individual or collective gets due to accomplishing or closing a planned goal. In line with Ogbu^[23], achievement in education specifically refers to student's success in learning fixed info content. Achievement will have a good influence on teaching media, teaching ways, educational delivery channel and student's LTM. Okeke^[24] declared that student's achievement encompasses a shut link with teacher's technique of teaching and educational media. Educational media adopted by the teacher particularly video clips may either enhance or confirm student's achievement in any subject. Educational media used by teachers will attribute to student's poor achievement in tie-dye instruction^[25]. The inappropriate medium of instruction and ineffective educational media the teachers adopt may even be liable for the poor achievement and interest of the students in tie-dye irrespective of gender of the students.

Student's cannot learn tie-dye effectively with the utilization of ancient educational materials the academics use in teaching and learning. Aroh^[22] declared that in classrooms, each the academics and therefore the students may build learning easier with acceptable educational materials like media to facilitate teaching and learning. Livinus wrote that educational media ask because the wide kinds of instrumentation and materials would enhance teaching and learning. Isola^[26] viewed them as informative materials or things that are presupposed to build teaching and learning attainable. Educational materials are concrete and physical objects which provide sound, visual or every to the sense organs throughout teaching^[27]. Ojebisi^[28] declared that these learning materials ask objects or devices that the teacher uses to form the lesson abundant clearer and attention grabbing to the learner. Video clips are one amongst the training materials that build teaching and learning attention grabbing to the learners irrespective of the gender.

Gender refers to the socially constructed characteristics of women and men such as norms, roles and relationships of and between groups of women and men. It varies from society to society. Because gender is a social construct and these constructs translate to expectations and these expectations are often biased.

Gender differences in the arts have been and remain to be an international issue. Despite oppositions, artists and organizations have inspiring and well-documented histories of working with resilience through such differences. This study does not attempt to address the massive issue of gender differences on an international scale but rather seeks to provide a glimpse into the current issues around this content area in art making. The drive to do the study internationally is not an arbitrary decision,

rather, it emphasizes the necessity in addressing differences as an international, not just a localized problem and that gender differences and achievement the arts has been and still persists to be a major issue.

The concept of gender is an important issue that needs to be addressed much more especially in the teaching and learning of art. The similarity of the terms, gender and sex, suggests that these two concepts are the same. The elimination of this mistake and the transformation of the position into a conscious awareness are carried out with the awareness of social responsibility with contributions in different disciplines. At this point an evaluation can be made on the achievement of arts based on the gender of the students.

Historically, sociological and psychological studies and researches on the subject have also revealed other sub-concepts and theories such as sex-typing, gender differences, gender discrimination, gender identity, gender roles/social role theory and gender stereotypes associated with the concept of gender. Moreover, all these sub-concepts one by one have become the subject of other disciplines besides sociology additionally to general term of gender. The multi-disciplined area of our time provides the connections between all disciplines. In this atmosphere, different fields can get into relations with each other. In addition, an art is in the relation with other disciplines not only in forms but also with its conceptual contents because an art is the part of human, environment, society and life. Therefore, the term of gender also takes in place in art, especially in the contemporary arts.

Gender is that the assortment of physical, biological, social, mental and activity characteristics of a personal and differentiating between the female and masculine (female and male) of a personal. Gender refers to the socially, culturally created characteristics roles that are ascribed to male and feminine in any society. The number of academic researches is conducted by numerous researchers on the results of gender on student's educational performance. A number of these studies embody Bello and Abimbola^[129], Tercanlioglu^[30] and Nsofo^[31] among others. It has shown that the study on the influence of gender on student's educational performance is not conclusive and therefore, the inequality still exists.

In support of this assertion, Nsofo^[31] agreeing that male and feminine students tend to perform otherwise in varied subject areas. Nsofo, intercalary that the gender gap in specific subjects has prompted teachers to look at the attainable influences that gender has on student's achievement. In distinction to the higher than finding, Tercanlioglu^[30] argued that typically males surpassed females within the use of a specific strategy; females use many learning methods a lot effectively. Gender may be a social role assignment of male and feminine in society.

From the studies reviewed, there was no conclusive as disparities exist among students achievement supported gender in some studies. However, their square measure various opinions regarding gender in educational achievement.

This may be because of gender stereotype in society. The necessity for an investigation to explore gender-related variations regarding knowing the effectiveness in teaching and learning exploitation video clips within the tie-dye method is predicted. Gender consistent with us could be a set of qualities and behaviours expected from males or females by society. Raymond delineated gender as behaviours and attributes expected of individual supported being a male or feminine. The researcher farther states that gender could be a socially outlined standing as roles and actions ascribed to women or male to what is expected of them by the society and the way they relate to every alternative for significant existence. Therefore, females have bigger verbal ability than males, males are superior to females in artful skills associated with exploration and manipulation of objects, males stand out in mathematical ability and males are a lot of aggressive than females. Some oldsters tend to behave otherwise toward a male baby as compared to a feminine baby. A typical example of behaviour variations from oldsters includes the tendency to speak to and appearance at females a lot of than male and inspiring males to explore and females to stay shut. In the olden days in Nigeria, women usually practiced this aspect of arts. This aspect of art is art of female folk.

Therefore, the social status of class designation of the creator of the work may determine its classification of art or craft. Nowadays male are becoming involved in this aspect of arts. Most of the works done on gender differences are mostly on art history. None has been done in other areas of art in which textile are among them. The study is set to investigate whether there will be significant difference on the achievement of male and female students when taught tie and dye using video clips.

MATERIALS AND METHODS

Hypothesis: We tested the following null hypothesis at a 0.05 level of significance:

- H_{01} : there is no significant difference in the mean achievement scores of male and female students in tie and dye
- H_{02} : the interaction effects of video clips and gender on student's mean achievement scores in tie and dye is not statistically significant

Design of the study: This study employed a quasi-experimental 2x2 factorial research design. We used

intact classes for the study. The design was represented thus after Fraenkel and Wallen who noted that a quasi-experimental factorial design is a quasi-experimental design modified to permit the investigation of additional independent variables. The treatment variable is instructional media at two levels: Video clips (x_1) and conventional media (x_2) while the moderator variable gender is at two levels: Male (y_1) and Female (y_2). Specifically, the design is a 2x2 pretest-post-test non-equivalent control group factorial design:

E	0_1	x_1	y_1	0_2
C	0_1	x_2	y_1	0_2
E	0_1	x_1	y_2	0_2
C	0_1	x_2	y_2	0_2

Where:

0_1 and 0_2 = Pretest and post-test scores, respectively

E = Experimental group

C = Control group

Participants: The participants were 86 secondary school students from two intact classes in two secondary schools in Nsukka Education Zone, Enugu State, Nigeria. Participants received credit for their participation. The age range was narrow: from 13 (50 students) to 14 (36) years old with a mean age of 13.41 (SD = 0.49). The participants were divided into two groups of 31 (36% males) and 55 (64% females) participants each without any criteria of choice. The participants were African. We selected two secondary schools purposively from 59 Secondary Schools in Enugu Education Zone, Enugu State. We selected the schools based on schools with only one stream of SSI class, schools close to each other to make the supervision of the experiment easier and schools that are comparable in terms of similar facilities. We asked the participants to participate in a study for an experimental tie-dye processes class. We excluded eighteen participants because they failed to do the pretest. This was because of ill health and other unforeseen circumstances. Participants completed the experiment the stipulated time.

Materials: The instrument used for data collection was researchers-made Visual Arts Achievement Test (VAAT) designed to assess student's achievement in tie-dye processes. The instrument was face validated. Experts in Education Fine and Applied Arts at the University of Nigeria, Nsukka, validated the instruments. The experts scrutinized the instruments in terms of relevance, general format, suitability, structure and adequate timing. A clear concept of tie-dye process was covered. We modified the instructions along the line suggested to make them clearer to the students. We also established the content validity using a table of the specification to ensure that the items

had content validity in line with the content. The 50-item VAAT were multiple-choice questions. The time allowed for the test was 70 min. A marking scheme was prepared and used to score the test. The reliability of the VAAT was 0.86 determined using Kuder-Richardson formula 21 on test scores of 30 SSI students.

Development of instructional materials: We developed Tutorial video clips for the experiment. This is a type of instructional video for teaching a process of providing systematic instructions. This was suitable for the experiment because of tie-dye training involved processes. We produced the videos to last between 5-12 min long. This helped to leverage multiple instructional methods. We carefully planned the video clips and they have a professional touch. We wrote scripts on tie-dye processes that guided the production of the videos for the study. The experts in educational technology validated the video clips. We used Adobe Premiere software to correct, edit and produced the final version of the video for the experiment.

Experimental procedure: At the onset of the experiment, their teachers (research assistants) gave the subjects in both the males and females the VAAT as a pretest. Thereafter, the regular teachers began the experiment adhering strictly to the lesson procedure developed for the groups. We randomly assigned the two groups versions of the instructional media (video clips) for the experiment. The teachers guided the students on how to tie-dye processes. They experimented during the normal lesson periods following the school's timetables. By the end of the experiment which lasted for four weeks, the posttest which had items of the pretest (VAAT) reshuffled was administered to the subjects. We collected the answer sheets for VAAT and used the data provided for analysis.

Method of Data Analysis

We used Mean, standard deviation and Analysis of Covariance (ANCOVA) to analyze the data using the Statistical Package for the Social Sciences (SPSS) Version 25.

RESULTS AND DISCUSSION

We performed a hierarchical Analysis of Covariance (ANCOVA) on pretest and post-test obtained from the SS-II students to evaluate the treatment effect of the experiment. The independent variable was the group status of treatment. The covariate was pretest scores obtained from the students before the experiment.

We conducted preliminary checks to ensure that there was no violation of the assumptions of normality, linearity, homogeneity of variances, homogeneity of regression slopes and reliable measurement of the covariate. We presented the results in Table 1-3.

Table 1: Analysis of covariance of students tie and dye achievement scores by instructional media and gender

Variables	Parameters	Hierarchical method					
		Sum of squares	df	Mean square	F-values	Sig.	η^2
Post-test covariates	Pretest	4427.297	1	4427.297	328.927	0.000	
Main effects	(Combined)	27398.141	2	13699.071	1017.776	0.000	
	Instructional media	27338.613	1	27338.613	2031.129	0.000	
2-Way interactions	Gender	59.528	1	59.528	4.423	0.039	0.053
	Media*Gender	2.050	1	2.050	0.152	0.697	0.002
	Model	31827.488	4	7956.872	591.158	0.000	0.000
	Residual	1090.245	81	13.460			
	Total	32917.733	82	387.767			

Table 2: Mean (\bar{X}) and Standard Deviation (SD) achievement scores of students according to gender

Gender	N	Pre-test		Post-test		Adjusted post-test
		\bar{X}_1	SD ₁	SD ₂	\bar{X}_2	\bar{X}
Female	55	9.33	1.31	73.85	19.01	68.96
Male	31	9.06	1.31	58.42	17.02	67.11

Table 3: Analysis of covariance of interaction effect of instructional media and gender on achievement

Instructional media/Gender	Post-test	
	Mean	N
Video clips		
Female	88.41	34
Male	86.00	8
Total	87.95	42
Conventional media		
Female	50.29	21
Male	48.83	23
Total	49.52	44
Total		
Female	73.85	55
Male	58.43	31
Total	68.29	86

Table 2 revealed an adjusted mean score of 68.96 for female students while the male students had an adjusted mean score of 67.11. Female students performed better than their male counterparts in tie and dye. Table 1 also showed that the influence of gender was significant $F_{(1,81)} = 4.4, p = 0.039, \text{partial } \eta^2 = 0.053$. The null hypothesis was rejected, indicating that there was significant difference in the mean achievement scores of female and male students in tie and dye. The actual difference in mean scores between the groups was not substantial. The effect size, calculated using eta squared was 0.053.

Data in Table 3 showed that female students performed better than male students with video clips. The results in Table 1 also indicated that there was no significant interaction effect of mode of instructional media and gender $F_{(1,81)} = 0.152, p = 0.697$. The null hypothesis was not rejected. The interaction effect of instructional media and gender on students mean achievement scores in tie and dye was therefore, not statistically significant.

Discussion of results: Results showed that female students perform better than their male counterparts in tie and dye. The different roles of females in the traditional society may have influenced the achievement of female students in the test. In the traditional Nigeria society the dyeing of clothes and other art and craft activities are mainly the work of women. The adult women may have taught their younger females the techniques and processes involved in tie and dye even before they start formal education. This might have given them an edge over their male counterparts. In most cases males are not trained in this aspect of art. They are mainly engaging themselves in activities like farming and trading. The only aspects of art men engage themselves are woodcarving and sculpture. Other art females do apart from textile which involves tie, and dye includes pottery, weaving and painting. Gajewski and Seberg describes how women have created great works throughout history yet they struggle to be recognized. Women have always been artists and there always have been glimpses of women’s art within male-driven societies. In support of this result, Nsofo^[31] agreeing that male and feminine students tend to perform otherwise in varied subject areas. In this case, female outperformed male students in tie and dye. However, females may not perform better than males in other areas of art like sculpture and woodcarving. Nsofor, intercalary that the gender gap in specific subjects has prompted teachers to look at the attainable influences that gender has on student’s achievement. Another advantage females may have over male students in the achievement may be attributed to the media of instruction. They may be more comfortable when they are taught with video clips instruction than their male counterpart. Lin^[33] agreed that females achieve higher than males when taught with video instructions. This is also in agreement with Coward *et al.*^[34] who maintained that females performed better than males when taught with electronic media.

The interaction effect of instructional media and gender was not significant. However, female students performed better than male students irrespective of the instructional media. The differences in the mean scores were not significant. The results suggest non-significant ordinal interaction effect between instructional media and gender on student's achievement scores in tie and dye. This was because at all levels of gender, the adjusted mean scores were higher for the video clips than for conventional instructional media and the difference in the adjusted mean scores of male and female students in each group was negligible. It does appear that there were also no gender differences in the interaction effects of instructional media and gender on student's achievement in tie and dye. In contrary, the current educational outcomes in the United States suggest great differences in achievement between boys and girls^[9]. Another influencing matter is that at this stage of artistic development children are the same irrespective of gender. Their artistic depiction, therefore, could be freely expressed without any bias in terms of gender to facilitate achievement in tie and dye, especially when taught conventionally. Thus, the depictions may not necessarily reflect a different stage of intellectual development. This may be the reason why there was no significant interaction effect of instructional media and gender on student's achievement in tie and dye.

CONCLUSION

From the results obtained in the study on the evidence of gender differences in student's achievement in tie and dye when exposed to video clips and conventional media, it was found that gender significantly influenced students achievement in tie and dye. Female students performed better than their male counterparts. The study also revealed non-significant ordinal interaction effect between instructional media and gender indicating that treatment did not have differential effects on male and female student's achievement in tie and dye.

IMPLICATIONS

The findings of this study have implications for visual arts education particularly in teaching tie-dye in secondary schools. The results are interpreted in light of multimedia learning which video clips is an aspect of it, principles and studies in the area of gender differences in learning. The important contribution of this study is the suggestion that individual differences such as gender should be considered in multimedia learning. This study adds to the literature by showing that gender is another factor to consider in conjunction with expertise and modality in multimedia learning. Even though the exact nature of difference between males and females is not yet

clear in the interaction effects of instructional media and gender, it is of practical importance. It hints at an essential gender difference in information processing which also involves style. It further cautions the generalization of multimedia learning principles to all individuals. It would be beneficial for educator to learn more about gender interactions and their effects on multimedia learning. The findings also have implications for instructing students who differ in gender. The use of video clips instruction would be more effective irrespective of the student's gender. We recommended that the Ministries of Education should ensure that teachers should incorporate video clips instructional media for secondary students. Moreover, the teachers should take cognizance of gender differences in dishing out their instructions to the students. The major limitation of the study was on the problem of absenteeism among the students. The fact that some students skipped classes may have influenced their performance.

REFERENCES

01. Solomon, G. and A. Ezra, 2015. Tie-dye (Adire) among the Jukun people Mgbakoigba. *J. Afr. Stud.*, 4: 1-13.
02. Asmah, A.E., V. Okpattah and S.T. Daitey, 2016. The innovative wet-dyeing batik T-shirt technique. *Int. J. Acad. Res. Reflection*, Vol. 4,
03. Versova, S., 2017. Japanese Shibori tie & dye workshop. Njuta Technologies Pvt. Ltd., India.
04. Makinde, D.O., M.O. Fajuyigbe and O.J. Ajiboye, 2015. Nigerian textile industry: A tool for actualizing economic stability and national development. *Eur. J. Bus. Social Sci.*, 4: 331-344.
05. Olusegun, M.A., 2008. Ready-to-wear adire prints of Abeokuta. Ogun State, Nigeria.
06. Asmah, A.E., 2004. A manual on batik and tie-dye for teachers. Ph.D. Thesis, Federal University of Technology Yola, Yola, Nigeria.
07. Oparinde, S.S., 2012. Batik as a cultural identity of the Yoruba: Hand colouring techniques and applications, possibility of adaptations. *Res. World*, 3: 31-41.
08. Aggarwal, J.C., 2007. Essentials of Educational Technology: Innovation in Teaching-Learning. 2nd Edn., Vikas Publishing House, New Delhi, India, Pages: 504.
09. Berk, R.A., 2009. Multimedia teaching with video clips: TV movies You Tube and mtvU in the college classroom. *Int. J. Technol. Teach. Learn.*, 5: 1-21.
10. Hsin, W.J. and J. Cigas, 2013. Short videos improve student learning in online education. *J. Comput. Sci. Coll.*, 28: 253-259.
11. Thomson, A., R. Bridgstock and C. Willems, 2014. Teachers flipping out beyond the online lecture: Maximising the educational potential of video. *J. Learn. Des.*, 7: 67-78.

12. Guo, P.J., J. Kim and R. Rubin, 2014. How video production affects student engagement: An empirical study of Mooc videos. Proceedings of the 1st ACM Conference on Learning@ Scale, March 04-05, 2014, ACM, New York, USA., ISBN: 978-1-4503-2669-8, pp: 41-50.
13. Khalid, A.Z. and K. Muhammad, 2012. The use of YouTube in teaching English literature: The case of Al-Majma'ah community college, Al-Majma'ah University (case study). *Int. J. Linguistics*, 4: 525-551.
14. Irene, C., 2015. Effect of video programmes utilization on standard two pupils science achievement in Dagoretti District, Nairobi county. Masters Thesis, University of Nairobi, Kenya.
15. Ebied, M.M.A., S.A.A.S. Kahouf and S.A. Abdel Rahman, 2016. Effectiveness of using YouTube in enhance the learning of computer in education skills in Najran university. *Int. Interdiscip. J. Educ.*, 1: 1-7.
16. Kosterelioglu, I., 2016. Student views on learning environments enriched by video clips. *Universal J. Educ. Res.*, 4: 359-369.
17. Martinez, A., 2012. Using JITT in a database course. Proceedings of the 43rd ACM Technical Symposium on Computer Science Education, February 2012, ACM, North Carolina, USA., pp: 367-372.
18. Sulaiman, K.O., 2013. The use of instructional resources for effective learning of Islamic studies. *Religious Stud. J. Ekiti State Univ.*, 1: 30-39.
19. Darling-Hammond, L., L. Flook, C. Cook-Harvey, B. Barron and D. Osher, 2020. Implications for educational practice of the science of learning and development. *Applied Dev. Sci.*, 24: 97-140.
20. Yusuf, M.O. and A.O. Afolabi, 2010. Effects of Computer Assisted Instruction (CAI) on secondary school students performance in Biology. *Turk. Online J. Educ. Technol. TOJET.*, 9 : 62-69.
21. Mezieobi, 2008. Instructional materials and student's academic achievement in physics: Some policy implications. *Eur. J. Hum. Social Sci.*, 2: 23-30.
22. Aroh, D.C., 2006. Effects of videotaped instruction on secondary school students achievement and interest in mathematics. M.Ed. Thesis, University of Nigeria, Nsukka, Nigeria.
23. Ogbu, J.E., 2008. Effects of interaction patterns on student's achievement and interest in basic electricity. Ph.D. Thesis, University of Nigeria, Nsukka, Nigeria.
24. Okeke, J.N., 2013. Effect of the project-based method on students achievement in Government curriculum in senior secondary schools in Nsukka Education Zone. M.Ed. Thesis, University of Nigeria, Nsukka, Nigeria.
25. Usulor, B.E., 2012. Effect of cooperative learning instructional strategy on junior secondary school students' achievement in social studies. *Niger. J. Social Stud.*, 15: 225-274.
26. Isola, B.A., 2011. Vocational Orientation: How to Achieve your Goals. Oyinlola Press Ltd, Ibadan, Nigeria,.
27. Agina-Obu, T.N., 2005. The Relevance of Instructional Materials in Teaching and Learning. In: *Theories Are Practice of Teaching*, Robert-Okah, I. and K.C. Uzoeshi (Eds.), Harey Publication, Port Harcourt, Nigeria, pp: 9-12.
28. Ojebisi, R.O., 2011. Approaches to Effective Teaching in Schools. Allyn & Bacon, Boston, Massachusetts,. achievement in Government curriculum in senior secondary schools in Nsukka Education Zone. M.Ed. Thesis, University of Nigeria, Nsukka, Nigeria.
29. Bello, G. and I.O. Abimbola, 1997. Gender influence on biology students concept-mapping ability and achievement in evolution. *J. Sci. Teach. Learn.*, 3: 8-17.
30. Tercanlioglu, L., 2004. Exploring gender effect on adult foreign language learning strategies. *Issues Edu. Res.*, 14: 181-193.
31. Nsofo, C.C., 2010. Effects of improvised instructional media on secondary school students' achievement in biology concepts in Niger State. Ph.D. Thesis, Department of Science Education, Federal University of Technology, Minna, Nigeria.
32. Gajewski, A. and S. Seeberg, 2016. Having her hand in it? Elite women as makers of textile art in the middle ages. *J. Medieval Hist.*, 42: 26-50.
33. Lin, L.F., 2009. Video segment comprehension strategies: Male and female university students. *English Lang. Teach.*, 2: 129-139.
34. Coward, F.L., S.M. Crooks, R. Flores and D. Dao, 2012. Examining the effects of gender and presentation mode on learning from a multimedia presentation. *Multi. J. Gender Stud.*, 1: 48-69.