

UTILISATION OF VIDEO INSTRUCTIONAL PACKAGE ON STUDENTS' PERFORMANCE ON CERAMICS IN FEDERAL COLLEGES OF EDUCATION, SOUTH-WEST, NIGERIA

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Abstract

The utilisation of Video Instructional Package on students' performance on Ceramics was studied in two Federal Colleges of Education in South-west, Nigeria. The design for the study was quasi-experimental, and a total of 52 Fine and Applied Arts students participated in the study. There were 28 students in experimental; and 24 for the control. The respondents were purposively sampled from Federal Colleges of Education Osiele, Abeokuta, Ogun State and Federal Colleges of Education (Special), Oyo, Oyo State respectively. For the study, there were three research questions and three corresponding hypotheses with three instruments. Data were tested using t-test for hypotheses one and two derived from research questions one and two. And ANCOVA was used to test hypothesis three, all at level of significance 0.05. Findings revealed that: there was no gender influence on students in their performance in Colleges of Education ($t=2.448 = p>0.05$); and there was an influence on high, medium and low ability levels of students' Ceramics performance in Colleges of Education ($F=50.604 = p<0.05$). Based on the findings, the recommendations are that, Fine and Applied Arts students should be encouraged and provided with more working tools to better their current performance. The lecturers of Fine and Applied Arts in Colleges of Education should endeavour to adapt and utilise Video Instructional Packages more often for teaching Ceramics in particular and others in general.

Keywords: Visual Arts, Fine and Applied Arts, Ceramics, Video Instructional Package

Introduction

In the field of education, it is common to refer to two types of creativity: teaching creatively and teaching for creativity. Teaching creatively refers to the use of different approaches that can arouse curiosity and make learning more interesting and effective by using various instructional methods such as video, animation and graphics to achieve teaching goals. Teaching for creativity is a teaching method that aims to develop students' creative thinking or behaviour. It requires openness to unconventional and original ideas and dedication of time during class to open-ended questions that allow students to express creative ideas. In support of the above assertion, Yu and Subramaniam (2017) and Maor et al. (2024) opined that in order to implement creative teaching successfully, a parallel emphasis on teaching creatively and teaching for creativity is necessary because teaching creatively can serve as a stepping stone towards cultivating

creativity among students. In other words, teaching for creativity must involve creative teaching, in that if teachers' creativity abilities are poor, they will not be able to develop these abilities among their students. Creativity holistically is called Visual Arts.

Iwasaki (2025) viewed visual arts as art forms that express their message, meaning and emotion through visual means. Visual arts may be categorised as decorative, commercial or fine art, such as painting, photography or sculpture. Art is usually subjective and may be interpreted in various ways. Still, one commonality of all visual art forms is to communicate visually, without the need for the other senses such as hearing or touch. The intent of visual art forms may be to visually please the viewer through an artwork that is beautiful or calming. Some artworks aim to entertain the viewer through interesting or amusing images or as a captivating visual story. The intent of other artwork may be to shock or disturb the viewer to provoke thought and discussion on an important topic or pressing issue. Studycom (2025) opined that Visual arts are works made to be appreciated by the eye that require skill and imagination to create. The visual arts include painting, drawing, sculpture, printmaking, photography, digital art, graphic design and ceramics made by skilled craftspeople, this is also ascribed to by Studycom (2025).

Carroll and Foist (2025) asserted that ceramic is a non-metallic and inorganic substance. This implied that ceramics are formed by mixing several materials, including water, powders, earthen materials and clay. Ceramics exhibit the mechanical properties of being hard, brittle, refractory, nonmagnetic, chemically steady and resistant to wear, heat and corrosion. Ceramics can be grouped into five types namely structural, refractory, electrical, magnetic and abrasive. The types of ceramics have different uses based on their properties. Clay is a very commonly utilised material for ceramics. Clay is often used to craft structural ceramics like bricks and tiles. Kitchenwares and pottery are also regularly made from clay. Ceramics can be different types of materials, including glass, bricks and pottery. Glass is a distinct ceramic material, developed as a ceramic in approximately 1500 BCE.

Clark (2025) defined ceramic as a material that is non-metallic non-organic. It may be crystalline, glassy or both crystalline and glassy. Ceramics are typically hard and chemically non-reactive and can be formed or densified with heat. Ceramics are more than pottery, flower vase and dishes. Clay, bricks, tiles, glass, and cement are probably the famous examples of materials used for ceramics. Ceramic materials are used in electronics depending on their composition, they may be semiconducting, superconducting, ferroelectric, or an insulator. Ceramics are also used to make objects such as spark plugs, artificial joints, fiber optics, space shuttle tiles, cooktops, micropositioners, race car brakes, chemical sensors, self lubricating bearings, body armor, and skis. Technological ways of teaching ceramics come in many forms and are expanding rapidly in our nation and there is a push for schools to keep up with this technology. The use of technology in Colleges of Education is becoming significant because it equips students with skills and prepares them for life in the real world. The use of a Video Instructional Package (VIP) to teach ceramics is a step of utilising the available technology.

Video Instructional Package is one of the most diversified and powerful virtual learning medium that captures and presents information and offers a sensory learning

environment that enhances learners to understand more and retain information better. It integrates various media such as voice, animation, data and text for transferring the learning (Nwaokolo & Michael-Aondoaseer, 2023). These are remarkable advantages of incorporating video presentations into the teaching and learning by leveraging the power of video lectures to elevate the teaching experience and foster a more engaging and effective learning environment for the students. It enhanced accessibility; with video lectures, learning becomes accessible anytime, anywhere, empowering students to engage with educational content using their preferred devices such as it laptops, tablets or smartphones. Its flexibility in learning schedules gives students the freedom to learn at their convenience by uploading video lectures online and sharing the links, it also allows students to tailor their learning schedules to better suit their individual needs. It encourages individualised pace of learning; recognising that each student learns at his or her own pace. On the other hand, video lectures provide a solution for personalised learning experiences. This flexibility maximizes the effectiveness of e-learning by accommodating the diverse learning speeds of the students. On versatile applications, while video lectures are commonly associated with distance learning, they also bring innovation to in-class teaching. With this versatility, teacher can captivate the students and inspire the colleagues with a modern and engaging approach to education. These submissions were also corroborated by (Ispring, 2025).

In traditional teaching, teacher is the controller of the learning environment. Power and responsibility are held by the teacher and they play the role of instructor (in the form of lectures) and decision maker (in regard to curriculum content and specific outcomes). Traditional teaching methods focused on the teacher as the only source of information in the classroom. It embraces the idea of a teacher-centred method involving face-to-face interaction, mainly from the teacher to the students similarly, IGI Global (2025) submitted that conventional method of teaching focused on the teacher as the only source of information to the pupils/students. Recently, due to the development of network bandwidth and multi-media technology, interactive video has been used widely in e-learning system. Interactive video uses a non-linear, interactive digital video technology to allow students to give full attention to the learning of materials in content and review any video part as many times as possible.

In another development, applications of innovative strategies might be able to resolve the issue of poor performance in education. One of such innovative strategies is the use of technological tools called video instructional package. Video Instructional Package (VIP), like Computer Assisted Instruction (CAI), Protocol Packages (PP) and Audio-Tutorial Training Models (ATTM), among others. This was also attested to by Olelewe et al. (2023) stressed that the individualised methods of instruction, is a student-centred activity-oriented teaching strategy which allow students to learn through self-learning approach while the teacher acts more as a facilitator to the students in order to allow students to learn through self-learning strategy while the teacher only acts more as a facilitator instead as the provider of information or knowledge. Hence, VIP is an instructional approach that makes teaching and learning more precise. Gambari et al. (2016) examined the effects of video-based cooperative, competitive and individualised instructional strategies on the performance of senior secondary schools' students in

Geometry in Nigeria. The study also examined the influence of gender on students' achievement. Findings of the study revealed that there was significant difference in the performance of the groups in favour of cooperative group. The study revealed further that, students' gender had no influence on students' performance in cooperative and individualised groups. However, male performed better than their female counterparts in competitive instructional strategy.

Onasanya et al. (2010) who worked on learning information and communications technology skills and the subject context of introductory technology learning in Nigeria and found out that male and female students performed equally well. Mbaeze et al. (2020) worked on the influence of information and communication technologies on students' academic performance and found out that male students performed significantly better than the female students in Fine Arts. Kareem (2017) worked on effect of web-enabled video package on Colleges of Education students' performance in sculpture in South-West, Nigeria. The result showed that there was a significant difference among high ability, medium ability and; low ability levels mean scores of Fine Arts students' performance in Colleges of Education.

Interactive video instruction (IVI) integrates the computer capacity for interactivity, Information management and decision-making with the audiovisual capabilities of videodisc or video clip. It may also combined variety of media stored on a videodisc, such as full-motion video, readily accessible for viewing. IVI has proven to be as effective as other computer approach in education, and particularly in tertiary institutions. College(s) of Education in Nigeria is a tertiary institution under Teacher Education Programme. Federal Republic of Nigeria (FRN) (2012) asserted and approved that the teacher training programme at the National Certificate in Education (NCE) level, is the minimum teaching qualification in Nigeria. The mandate is to produce quality teachers for the Basic Education sub-sector. The Basic Education sub-sector encompasses five categories of education which are Pre-primary Education or Early Childhood and Care Education, Primary Education, Junior Secondary Education, Adult and non-formal Education, Special Needs Education.

The philosophy of this programme is to provide academic and professional training for NCE teachers in Fine and Applied Arts among other disciplines. It aims at developing students' aesthetic perception, artistic talent and expression as well as stimulates interest and enquires in the practical and theoretical areas, particularly as they affect the teaching of Fine and Applied Arts at the primary and junior secondary school levels (FRN, 2012). Such noble educational programmes should be supported with a better teaching method such as Web-enabled, and or video instructional package, among others. Many teachers today still glue to conventional ways of teaching and are reluctant to shift from their old ways. The reasons behind their reluctance are yet to be totally unraveled; but some indicators show that those who refuse to change as it were, might be largely due to attitudinal issues, dread for technology, financial constraints, unskilled or incompetence to handle tasks related to subject matter and pedagogy, among others as was also corroborated by (Olanrewaju & Ikuereye, 2019).

With the coming of digital technology, and particularly the use of Information and Communications Technology (ICT), almost every transaction globally is done through

the use of this latest technology. Every citizen of the world is expected to participate in its competitiveness, if not, one would be left out in the scheme of things. For instance, banking transaction is done through online, buying and selling of items in different quantities are done digitally, travelling, job searching and application and learning, among others are done with the use of ICT. Similarly, Olanrewaju and Ikuereye (2019) argued that these days, lots of human endeavours such as trading, artworks, among several others are carried out with the use of ICT. Therefore, all teachers in all ladders of education industry and particularly in Colleges of Education should employ this avenue to deliver quality instructions to the learners to match the standard practice world over currently. Particularly, video instruction should be explored and exploited to bring about fun-filled and pleasurable learning experiences in schools. When this is vigorously pursued and used tremendously, it could give rise to better performance of students in their academic achievements and become self-reliant citizen of the society who could also contribute to societal development.

Purpose of the Study

The main purpose of this study was to utilise Video Instructional Package (VIP) on students' performance on Ceramics in Colleges of Education; and specifically to:

1. Find out whether or not there would be difference in the use of VIP on students' performance in Ceramics instruction.
2. Determine whether or not there would be difference in the use of VIP on students' performance in Ceramics instruction based on gender.
3. Examine whether or not there would be difference in the use of VIP on students' performance in Ceramics instruction based on ability levels.

Research Questions

Three research questions were raised to guide the study:

1. Is there any difference in students' performance utilising Video Instructional Package for Ceramics instruction in Colleges of Education?
2. Is there any difference in students' Ceramics performance in Colleges of Education based on gender?
3. Will there be differences in high, medium and low ability levels of students' Ceramics performance in Colleges of Education?

Hypotheses

The following three hypotheses were formulated and tested for the study:

- H01:** There is no significant difference between experimental group and control group mean scores of students' performance taught Ceramics in Colleges of Education.
- H02:** There is no significant difference between male and female mean scores of students' performance taught Ceramics in Colleges of Education.

H03: There is no significant difference among high ability; medium ability and low ability levels mean scores of students' performance taught Ceramics in Colleges of Education.

Methodology

The study employed a quasi-experimental design; that is, pre-test, post-test, nonequivalent, nonrandomised control group involving 2 x 2 x 3 factorial design. Two levels of independent variables (utilisation of video package and manual method of modeling), two levels of gender (male and female) and three levels of academic ability (high, medium and low) were examined in the study. The population for this study was all Fine and Applied Arts students in Colleges of Education in South-West, Nigeria, while the target population for this study comprised all Fine and Applied Arts students at 200 levels in Colleges of Education in South-West, Nigeria. Hence, multi-stage sampling technique was used for selection of sample for the study. In the first stage, the four States in which at least two Colleges of Education runs Fine and Applied Arts programme were purposively selected for the study. In the second phase, random sampling technique was used to select Federal Colleges of Education Osiele, Abeokuta, Ogun State and Federal Colleges of Education (Special) Oyo, Oyo State for the study. Lastly, random sampling technique was used to allocate Federal College of Education (special) Oyo, Oyo State to experimental group and Federal College of Education Osiele, Abeokuta, Ogun State to control group. The sample was drawn for the study from class (intact) of 200 levels at the two Federal Colleges of Education that were involved in experimental and control groups. Therefore, 52 students became the sample size for the study. Out of which 24 (46.15%) of the students were from Federal College of Education Osiele Abeokuta Ogun State and in conventional teaching group; while the remaining 28 (53.85%) students were from Federal College of Education (Special), Oyo, Oyo State with Video Instructional Package group treatment.

Video Instructional Package in Ceramics (VIPC) was the main instrument for actual treatment on the subjects in the experimental group. The treatment instrument (VIPC) was developed by the researchers. First of all, the designing of the Ceramics contents from its objectives to the production of the Video Instructional Package in draft was done by the researchers. The template was followed as planned in the blueprint to become the product. The assistance of a resource person in video recording was sought for and shooting (rushes) was done. Then, the rushes in the recorded format was taken to the video editor for editing purposes with the researchers on guard, directing all what needs to be retained and otherwise. Also, effects in sound, captions and pictorial background among others were built into the production from the studio. Thus, the Video Instructional Package was finally produced. There were three researchers designed instruments for data collection; and they are: Ceramics Achievement Test (CAT), Ceramics Skill Test (CST) and Ceramics "On the Spot" Skill Assessment Instrument (COSSAI). The three instruments were validated by three experts in the field. The various observations in form of corrections and suggestions were rectified to improve the final production of the Video Instructional Package. The instruments were pilot tested, the data

obtained was subjected to cronbach alpha statistics the value yielded 0.85, 0.91 and 0.77 respectively. The pilot study found reliable; so also, the Video Instructional Package was pilot studied. In the schools of the study, permission was gotten to carry out the exercise. There were three research assistants, one from the school for experimental group; and two others for the control group school of the study (lecturers of Fine and Applied Arts) whom researchers trained properly. The two research assistants handled the control group school of the study, while the researchers and one other research assistant concentrated on the experimental group school of the study. A total period of eight weeks was used for the study; the first week was for introduction and pretest, and the last week (eighth) for posttest; six other weeks were for treatment in the schools of the study.

The t-test statistical tool was used to test hypotheses one and two which were derived from RQs 1 and 2; while hypothesis three was derived from RQ3 and was tested using ANCOVA. All the hypotheses were tested at significance of 0.05 levels.

Results

The results of the study are presented hereunder with the three research questions embedded into the three hypotheses tested for the study.

H0₁: There is no significant difference between experimental group and control group mean scores of Fine and Applied Arts students' performance taught Ceramics in Colleges of Education.

Table 1: Posttest summary of t-test on Fine and Applied Arts students' performance in Ceramics

Variable	N	Mean	Std.D	df	t	Sig(2-tailed)	Decision
Video Package group	28	1.71	.713	50	1.380	.174	NS
Control group	24	2.00	.780				

Table 1 shows the difference in the performances of control and experimental groups. The table shows that there was no significant difference between the two groups mean scores of Fine and Applied Arts students' performance in Colleges of Education when tested ($t = 1.380$; $p > 0.05$). Though, the mean score of the control group was higher than the experimental group, but was not significant; hence, hypothesis 1 is upheld.

H0₂: There is no significant difference between male and female mean scores of Fine and Applied Arts students' performance taught Ceramics in Colleges of Education.

Table 2: Posttest summary of t-test of the performances of males and females Fine and Applied Arts students in Ceramics

Variable	N	Mean	Std. D	Df	t	Sig(2-tailed)	Decision
Males	28	2.07	.716	50	2.448	.018	NS
Females	24	1.58	.717				

Table 2 shows the difference in the performances of males and females Fine and Applied

Arts students taught using Video Instructional Package. The table shows that there is a difference between the males and females mean scores of Fine and Applied Arts students' performance in Ceramics. ($t = 2.448$; $p > 0.05$). The result showed that males outperformed their female counterparts; but when tested, the difference existed was not significant. Thus, hypothesis 2 is hereby upheld.

H0₃: There is no significant difference among high, medium and low ability levels mean scores of Fine and Applied Arts students' Ceramics performance in Colleges of Education.

Table 3: Summary of ANCOVA showing differences in the performance of low,

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Decision
Corrected Model	4582.857 ^a	3	1527.619	38.323	.000	
Intercept	4228.212	1	4228.212	106.071	.000	
Pretest	29.095	1	29.095	.730	.397	
Ability	4034.312	2	2017.156	50.604	.000	S
Error	1913.374	48	39.862			
Total	168004.000	52				
Corrected Total	6496.231	51				

medium and high ability levels of Fine and Applied Arts students

R Squared = 705 (Adjusted R Squared = 687)

Table 3 indicates that the calculated F-value = 50.604 with calculated sig. 0.000 computed at critical level of 0.05. Since the calculated 0.000 = $p < 0.05$, hypothesis 3 is hereby rejected. This implies that there is a significant difference among high, medium and low ability levels mean scores of Fine and Applied Arts students' performance in Ceramics

Discussion of findings

The result showed difference in the performances between experimental group taught using Video Instructional Package and control group taught using conventional method after Ceramics instruction studied; but, when their mean scores were tested, it was not significant. This is in line with findings of Nwaokolo & Michael-Aondoaseer, (2023) who maintained that Video Instructional Package is one of the most diversified and powerful virtual learning medium that captures and presents information and offers a sensory learning environment that enhances learners to understand more and retain information better. It integrates various media such as voice, animation, data, and text for

transferring the learning. Also Olelewe et al (2023) stressed that Video Instructional Package, like Computer Assisted Instruction (CAI), Protocol Packages (PP) and Audio-Tutorial Training Models (ATTM), among others. Individualised methods of instruction, is a student-centred activity-oriented teaching strategy which allow students' to learn through self-learning while the teacher acts more as a facilitator to the students learning and not as the which allow students to learn through self-learning while the teacher acts more as a facilitator to the students learning and not as the provider of information or knowledge. Hence, Video Instructional Package is an instructional approach that makes teaching and learning more precise.

Also in the study, it was revealed that there was no significant difference between males and females students of Fine and Applied Arts mean scores in Ceramics instruction examined in Colleges of Education. This indicated that gender had no influence on students' Ceramics performance in Colleges of Education. This might be as a result of males and females involvement in the use of video instructional package. This result supported the findings of Onasanya et al (2010) they worked on gender performance in ICT usage for teaching and learning and found out that, male and female students performed equally well. However, the result contradicts the findings of Mbaeze et al. (2020) they found out that male students performed significantly better than the female students in Fine and Applied Arts. The result contradicts the result of Gambari et al. (2016) who examined that there was significant difference in the performance of the groups in favour of cooperative group. The study revealed that, students' gender had no influence on students' performance in cooperative and individualised groups. However, male performed better than female in competitive instructional strategy.

The result on the ability levels of Fine and Applied Arts students' differs from one another; that is, from low, medium to high ability levels. This might be as a result of several other things that occurred in their academic achievement regarding intelligent quotient, emotional balance or otherwise. This is in line with the work of Kareem (2017) who found that there was a significant difference among high ability, medium ability and; low ability levels mean scores of Fine Arts students' performance in colleges of education.

Conclusion

In the study, there was no differentiation in the performance of the Fine and Applied Arts students of the schools of the study in their Ceramics instruction; and that the male and female students were not significantly different in their performance. Though, the males had higher mean score than their females' counterpart. But, the high, medium, and low ability levels mean scores of Fine and Applied Arts students' performances showed that they differ significantly in Ceramics instruction conducted in Colleges of Education. Consequently, there was an influence on their performances.

Recommendations

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

1. Fine and Applied Arts students should be encouraged and provided with more working tools to better their performance in all cases.
2. Lecturers in Colleges of Education should endeavour to adapt into the utilization of Video Instructional Package more often for teaching Ceramics in Colleges of Education.
3. There is need for school administrators to give Fine and Applied Arts Lecturers incentives which would motivate them to continually utilise Video Instructional Package for their job performance.
4. Seminars, workshops and in-service trainings should be organized for Fine and Applied Arts Lecturers in Colleges of Education to enable them acquire the necessary skills, update their knowledge and develop them in Video Instructional Packaging of different concepts.
5. Nigeria Certificate in Education (NCE) minimum standards curriculum should be reviewed to incorporate the use of Video Instructional Package into teaching methods and monitored to see to its compliance.

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