



## Development and Validation of an Instructional-Video Package to Teach Ceramic Art in Colleges of Education in Nigeria

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### Abstract

Ceramic art is a practical work of modeling clay into desired shapes, mostly done in a conventional instructional approach, with students' having often been challenged by limited practical opportunity to learn modeling using throwing wheel method, which is considered the most difficult in ceramic art, despite the physical guidance of the teacher. Consequently, this has continued to impede students' engagement and practical skills acquisition. Therefore, this study focused on the development and validation of instructional-video package designed to integrate a technological approach aimed at complementing and enhancing the teaching and learning of ceramic art in Colleges of Education in Nigeria. The study adopted a research and development design, validation of the instructional-video package was done by experts in ceramic art and educational technology to determine its content validity, instructional and technical quality and usability. Data was collected using structured validation checklist and rating scale, and analyzed using mean and standard deviation to answer the research questions. Results revealed that the instructional-video package was developed using ADDIE model as guide, while, ceramic art and educational technology experts' rated the instructional-video suitable to teach ceramic art. The study concluded that well-designed instructional-video package can effectively complement teaching ceramic art and improve students' engagement and practical skills development in ceramic art. It was recommended that art educators' and stakeholders support the development and utilization of locally made instructional media package to enhance effective teaching and learning of practical art courses.

**Keywords:** Ceramics, Development, Instructional-Video, Throwing, Validation

### Introduction

Instructional approach in ceramic arts education is usually established on the conventional method due to its practical nature and technicalities involved in the process. However, in the face of the proliferation of technology in the 21st century, the integration and role of technology in enhancing various aspects of ceramic arts education both theoretically and practically cannot be over emphasized. According to Olowoyeye (2016), technology has a role to play in the teaching and

learning of fine and applied arts, due to its impact on teachers' instructional strategy.

Similarly, Chukwuemeka, Babatunde, Ajani & Dominic (2020) noted that, the integration of technology in instruction functions as a catalyst that enhances the effectiveness of instruction and academic performance. Siigh, Dubey & Sunkars, (2022) also noted that technology can aid educational performance through the removal of physical and distance barriers to learning, which the development of an instructional



video package aimed to achieve in ceramic arts in this study.

Instructional video is a form of audio-visual presentation designed to teach students based on specific instructional objectives to be achieved at the end of the learning process. The use of instructional video continues to be appraised and attract attention as the field of fine and applied art education continues to embrace modern approach to instruction with the target of moving from the conventional instructional approach to a technology approach using developed instructional video to support teaching and learning process.

Specifically, instructional video package could either be self-developed or adopted to support teaching and learning process. However, both have merits and de-merits in the learning process, because, not every adopted instructional video addresses the objectives as intended. But a self-developed instructional video package has comparative advantage because it specifically addresses learning objectives and its achievement as intended. Hence, the appraisal and need for the development of an instructional video package in this study.

Also, it is believed that, students learn differently based on individual learning styles. Upon this premise, Obagah, and Brisibe (2017) explained that students learn by listening, some by touching and others prefer visual stimuli. Video on the other hand incorporates a range of learning styles supports like image, motion, sound and text among others, all of which help capture diverse learning styles of students. Hence, instructional video offers a richer mode of learning and communication that allows simultaneous broadcast of textual, video, and auditory information that helps students' learning process more, regardless of individual differences.

Researchers have given varying perspectives of instructional video, Baoqi (2022) opined that video is a medium of transmitting information in the form of sound and image that combines both the still and motion pictures together for the purpose of enhancing students' grasp of concepts. In view of this, Giannakos, Jaccheri, and Krogstie, (2015) observed that conventional approach to instruction may no longer be adequate to serve its instructional purpose as the integration of video is complementary and ensures a more systematic way to achieve pre-determined objectives and competences.

Consequently, Beheshti, Taspolat, Kaya, and Sapanca, (2018) highlighted the advantages of

instructional video to include the capacity to facilitate students' critical thinking and problem-solving skills, capacity to provide useful guide for learning of complicated practical procedures and concepts in a self-paced approach, and to help students' overall mastery of practical concepts. The authors further noted that the use of video in instruction helps to engage and motivate students in a learner-centered process that gives the students practical learning autonomy, and improved overall performance. Which are commensurate with the objectives intended for the development of instructional video package in this study.

### **Statement of the Problem**

Instruction in Ceramic Art is practically inclined but still largely predicated on the teacher's presence in class, an approach that is not only common with conventional method, but also deprives students in engaging and enhancing individualized practical learning. However, it is observed that despite the teacher's presence, students still find modeling of ceramic ware using throwing method the most difficult in ceramic arts, because of the technicalities involved. Therefore, there is the need for technology-enhanced method to be integrated in Ceramic Art, especially with the 21st century proliferation of technology in complementing and enhancing teaching and learning process. Based on this premise, this study developed and validated an instructional video package that can be used to guide students in modeling of ceramic ware, using throwing method. Thereby, encouraging individualized practical work, self-paced learning, and improving students' practical skills.

### **Research Questions**

The following research questions were raised and answered in the study:

1. what are the stages involved in the development of an instructional video package to teach modeling, using throwing method in Ceramic Art?
2. what is Ceramic Art expert's validation of a developed instructional video package to teach modeling, using throwing method in Ceramic Art?
3. what is Educational Technology expert's validation of a developed instructional video package to teach modeling, using throwing method in Ceramic Art?

## Methodology

The study adopted a research and development design, which focused on the development of an instructional video package, validated to teach modeling, using throwing method in Ceramic Art, using the ADDIE model to guide the development of the instructional-video package, carried out in three phases based on; needs assessment, development of the instructional-video package, and validation of the instructional-video package. The developed video package was validated by experts in ceramic art and educational technology based on contents like clay preparation, hand building technique, throwing wheel, glazing, and firing process are covered. Validation of the instructional-video was also done to determine its content validity, instructional and technical quality and usability,

Results of the expert's validation were presented and interpreted, to determine the validity of the developed instructional video package, to teach modeling, using throwing method in ceramic art. Population for the study included all experts in ceramic art and educational technology in Colleges of Education in Nigeria. The target population was Kwara State Colleges of Education experts', purposively selected from Oro and Ilorin Colleges of Education respectively. The research instrument for the study was the developed instructional-video package. The research instrument was validated by three experts in Ceramic art and Educational technology. The Ceramic Art experts' validation was to determine the face and contents validity of the research instrument, while, Educational Technology experts' validation was to determine the structure, technological suitability and instructional use of the developed instructional video package. Data collected for the study was analyzed using descriptive and inferential statistics. Frequency, Percentage, Mean and Standard Deviation were used to analyze demographic information and answered research questions respectively.

## Results

Results of research questions examined in the study are presented on tables below and interpreted.

**Research Question One:** what are the stages involved in the development of an instructional video package to teach throwing method in Ceramic Art?

To answer research question one, ADDIE model, an acronym for analysis, design, development, implementation and evaluation was used to guide the

development of the instructional video package to teach throwing method in Ceramic art in Colleges of Education in Nigeria.

**Stage 1 (Analysis):** This stage involved the description of students' characteristics such as gender, age, level (200), and course of study (Fine and Applied Arts students in Colleges of Education). The students are the end users of the developed instructional video package. Also, analysis of experts' validators' included the level of experience and educational qualification of expert validators.

**Stage 2 (Design):** The design stage involved the selection of contents, methods, strategies and sequence of instructional contents that met the specific learning objectives. For this study, the content focused on modeling of ceramic ware using throwing method. The strategy employed was to develop an instructional video package that can guide the teaching of ceramic ware using throwing method. While, the sequence of contents included; material preparation, throwing stage, decoration, first firing stage (Bisque), glazing, and second firing stage.

**Stage 3 (Development):** The pre-stated design contents, materials and methods were used to develop the instructional video in a simple sequential order, the first stage of developing the video included the preparation of materials, which involves soaking of the clay, kneading and wedging of the clay, in order to remove extraneous materials (impurities).

Next was the throwing stage, where the clay was placed at the center of the throwing wheel. Then, pulling was done to achieve the desired shapes like cylinder, cup, bowl, mug among others. After that, the decoration stage which involved fixing of handles when the thrown ware was leather hard, then other body decoration in form of incision, embossing and color application were applied. Next was the first firing stage (bisque) which included pre-heating which lasted 30 minutes, and real firing which lasted for about 4 hours in a wood fired kiln. At this stage, the ceramic ware was loaded into the kiln with the heavier ones below and the lighter ones positioned on top.

After the first firing process, the kiln was allowed to cool before the ware was offloaded. The second firing stage (gloss) followed, which involved the application of glaze, and cleaning up the surface to avoid slippery or remove dust. Then, the application of liquid glaze on the ware, furthermore, pre-heating was also done at the second firing stage for 30 minutes, while, second real firing took longer time between 7-10 hours. Then, the kiln was allowed to cool down, and

the wares were removed and cleaned up for final assessment.

**Stage 4 (Implementation):** the implementation stage was when the developed video package was used by students who are the end user, towards achievement of pre-stated objectives. The students would be required to follow steps in the developed video to make ceramic ware like drinking cups, bowls, water jug with lid and serving plates.

**Stage 5 (Evaluation):** the evaluation stage was the validation done by experts in Ceramic art and Educational technology to determine the suitability of the developed instructional video package to teach modeling, using throwing method in ceramic art. Also, evaluation of the end users, involved the actual use of the developed video as guide to make ceramic ware using throwing method.

**Research Question Two:** What is Ceramic Art expert’s validation of a developed instructional video package to teach modeling, using throwing method in Ceramic Art?

**Table One: Mean Scores of Ceramic Art Experts Validation of a Developed Instructional Video Package**

S/N	Validation Items	Mean $\times$	SD
1.	The materials on display in the video are specific to make ceramic as intended	3.70	0.47
2.	The materials are well prepared at different stages in the production	3.60	0.5
3.	The demonstration on the throwing wheel are simple for students’ basic understanding	3.65	0.49
4.	The presentation covers the entire stages of making ceramic ware using throwing wheel.	3.70	0.47
5.	The instructional video effectively covers the intended learning objectives	3.60	0.5
6.	The instructional video provides practical application of the concept discussed	3.30	0.57
7.	The video can help students’ individualized learning of difficult concepts in ceramic art	3.75	0.44
8.	The video captures appropriate use of the throwing wheel for students understanding	3.75	0.44
9.	The video captures every stage of the development of ceramic ware using a throwing wheel	3.80	0.41
10.	The instructional video offers clear explanations of the complex topic (FAA 227)	3.80	0.41
11.	The instructional video facilitates skill development in the learners	3.75	0.44

12.	The sequence of the topic in the instructional video is logical	3.75	0.44
13.	The introduction section of the video effectively sets the stage for the main content	3.90	0.31
14.	The developed instructional video package is good to teach ceramic art	3.65	0.49
15.	In the video production, several safety precautions were observed	3.80	0.41
16.	The safety information provided in the instructional video is sufficient for understanding	3.55	0.51
17.	The process of removing impurities in the clay are precautionary measures for safety	3.90	0.31
18.	The instructional content provided in the video are easy to follow	3.80	0.41
19.	The overall design of the instructional video package contributes positively to the learning experience.	3.65	0.49
20.	The entire video production aligns with the minimum standard of the National Commission for Colleges of Education	3.85	0.37
<b>Grand Mean (x)</b>		<b>3.71</b>	

To answer research question two, Ceramic Art experts were given questionnaire based on items specific to Ceramic Art, to guide their validation and to determine if the developed instructional video package was suitable to teach modeling, using throwing method in Ceramic Art. Table one showed the mean and standard deviation results of the validators' response to each item on the questionnaire. A grand mean score of 3.71, which is higher than the benchmark of 2.5 was determined. This showed that, the Ceramic Art expert validators rated highly the developed instructional video package as good enough with contents and procedural guide to teach modeling, using throwing method in Ceramic Art. The implication is that, when the developed video is given to students who are the end users, it will guide students in the making of ceramic ware and facilitate individualized practical learning process.



**Research Question Three:** What is Educational Technology expert’s validation of a developed instructional video package to teach modeling, using throwing method in Ceramic Art?

**Table Two: Mean Scores of Educational Technology Experts Validation of a Developed Instructional Video Package**

S/N	Validation Items	Mean $\times$	SD
1.	Presentation of steps in the video is systematic enough to teach specific concept in ceramic art	3.55	0.51
2.	Clarity of concepts are good for users understanding	3.40	0.5
3.	The visuals in the video enhances comprehension	3.65	0.49
4.+	The audio quality of the instructional video is clear	3.55	0.51
5.	The instructional video is well organized for learners’ to follow	3.65	0.49
6.	The video gives students the experience in a conventional setting	3.60	0.5
7.	For a practical concept, the lack of interaction is a major drawback of the video	3.65	0.49
8.	The pace of the instructional video is appropriate for understanding the concept	3.75	0.44
9.	The transition between steps within the instructional video package are smooth	3.65	0.49
10.	The visual design elements are appealing for learning	3.75	0.44
11.	The use of captions enhances understanding of the practical content	3.70	0.47
12.	The video has good complement of speech to text	3.70	0.47
13.	The video length is optimized to maintain learners’ attention without sacrificing depth of content	3.80	0.41
14.	The quality of the audio is audible enough	3.85	0.41
15.	Presentation of steps in the video is systematic enough to teach specific concept in ceramic art.	3.70	0.47

16.	The instructional video is well organized to teach FAA 227	3.75	0.44
17.	The video transition between different sections of the lesson are well executed	3.85	0.37
18.	The instructional video measures what it is intended to measure.	3.85	0.37
19.	The presentation of instruction is commensurate with the instructional objectives	3.90	0.31
20.	The developed instructional video package is good enough to teach ceramic art.	3.80	0.41
<b>Grand Mean (x)</b>		<b>3.70</b>	

To answer research question three, Educational Technology expert's were also given questionnaire based on items specific to Educational Technology, to guide their validation and to determine if the developed instructional video package was technologically suitable to teach modeling, using throwing method in Ceramic Art. Table two showed the mean and standard deviation results of the validators' response to each item on the questionnaire. A grand mean score of 3.70, which is higher than the benchmark of 2.5 was determined. The result showed that educational technology expert validators rated the developed instructional video package very good enough to teach modeling, using throwing method in ceramic art. The implication is that, when the developed instructional video package is used by students who are the end users, it is also expected to guide students in the making of ceramic ware, without the presence of a teacher, hence, facilitating individualized learning.

### Discussion of Findings

This study developed and validated an instructional video package to teach modeling in Ceramic Art in Colleges of Education in Nigeria. The study engaged Ceramic Art and Educational technology experts to validate the developed instructional video package, in other to determine the suitability of the developed instructional video to teach modeling, using throwing method in Ceramic art, in a technology enhanced process. Findings of this study showed that the validated instructional video is suitable to teach modeling, using throwing method in Ceramic Art. The essence of the developed and validated instructional video is for students who are the end users to support individualized practical work,

enhance self-paced learning, and improve academic performance.

In view of this, studies have shown contrasting findings of students use of an instructional video, Okechukwu and Nnamdi, (2022) revealed that students' use of instructional video is satisfying, motivating and effectively improves their learning experience and performance. On the other hand, despite the positive outcome of the use of instructional video, Obagha and Brisibe, (2017) study showed that the use of instructional video could potentially lead to an increase in students' absence from physical classroom. Having had an extensive review of literature, the researcher observed that, as at the time of carrying out this study, there was no previous empirical finding on a developed and validated instructional video package specifically to teach modeling, using throwing method in ceramic art. This however, is the gap this study filled and achieved.

### Recommendations

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

1. Ceramic art and educational technology experts can replicate similar validation process, using evaluation models like Bates' sections model or Kirkpatrick model to evaluate a developed instructional video package.
2. Validators are encouraged to validate other instructional videos, tools and applications that can also be used to guide the practical teaching and learning of Ceramic Art in a technology enhanced process.
3. Art educators' and other stakeholders should support the development and utilization of



locally made instructional-video or media package to enhance effective teaching and learning of ceramic or other practical art courses.

### Conclusion

The study concluded that the developed and validated instructional video package is suitable and good enough to effectively complement teaching modeling, using throwing method in ceramic art, and also improve students' engagement and practical skills development in ceramic art. In view of this, considering the integration of technology in teaching and learning process in the 21st century, there is need for ceramic art experts to encourage the integration of instructional videos and other technological means available to enhance the practical teaching and learning of ceramic art without the physical presence of a teacher. Which is expected to encourage students individualized learning process.

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