

The Production of Instructional Videos for Teaching Kammalor Drawing for Thai University Students Majoring in Arts Education

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Abstract

The purposes of this study were to develop instructional videos for Lai Kammalor Drawing, to assess their effectiveness, and to compare students' ability before and after learning through instructional videos for Lai Kammalor Drawing. The participants in this study were undergraduate students who were majoring in Arts Education from a public university in Thailand. The study's purposefully selected sample was divided into two groups: 1) the sample group, which consisted of 43 students, and 2) the treatment group, which consisted of 20 students. The descriptive statistics (mean and standard deviation) as well as the t-test for dependent samples were used in this study. Three major results arose as a result of the research. To begin, the evaluation of the instructional video creation for Lai Kammalor Drawing yielded findings that were much higher than the usual average of 3.50 (mean=4.76, SD=0.34). Furthermore, the content and design were at excellent levels. Second, the instructional videos for Lai Kammalor Drawing were 80.67/83.88 percent efficient, above the necessary set of 80/80 percent. Finally, the posttest score was significantly greater than the pretest score at the .05 level.

Keywords: Kammalor drawing, Production of instructional videos, Effectiveness, Innovation, Thai contexts, Arts education

Introduction

Lai Kammalor, or Kammalor Drawing, is a delicate ancient Thai art form that has been traditionally handed down as prevailing knowledge from generation to generation. The branch of arts is classified as a multichromatic art whose origins are unknown. However, it is believed that Lai Kammalor was founded around the late Ayutthaya era (nearly in 1767). This Kammalor was inspired by Chinese artists' furniture decoration (Patterson, 2016), and its distinctive design became popular later in the early Rattanakosin Era (approximately in 1782). Additionally, there are still surviving works of Kammalor pattern, such as the image of Maknarephon, a tree in front of the window of Wat Arun Ratchawararam Worawihan's Ubosot, or Xiao Kang, a gatehouse image that combines Chinese and Thai art and appears on the door of the Tripitaka Hall, Wat Phra Ngam, Bang Prahan District Phra Nakhon Si Ayutthaya. Additionally, there are drawings to embellish the Tripitaka's cabinets, the Dharma's ark, and so on (Inkong, 2014). The technique used to create the Kammalor design is derived from the art of water-laid ramen. By first completing the watering pattern, drawing the line, then painting the powder combined with clean water, and last drawing or covering the gold line. The Kammalor design is often used in drab, non-bright hues, such as brick red, white, and green. The processes involved in creating the Kammalor pattern include pattern design, perforation, pattern drawing, filling, rubbing, coloring, and gilding or gilding. These are the stages that require a high degree of comprehension and skill in order to compose saree designs. Ratana (2006) shows that during the early Rattanakosin period, the art of Kammalor pattern started to gain prominence in its distinctive form via the introduction of Thai literature. It is exquisitely drawn and developed, evoking a genuine Thai style devoid of Chinese influence. However, throughout the Rattanakosin era, from King Rama V onwards, Lai Kammalor's art progressively decreased in popularity, perhaps owing to a variety of reasons. As a consequence, the field of art deteriorates, and successors are unknown. As a result, no one in the know is aware of the proper algorithm at the moment. It is just a matter of guessing the technique or possessing some telling information about the method due to a lack of experience in genuine shams.

The purpose of this study was to collect data from a variety of learning sources in order to compile information and draw the Lai Kammalor process in order to preserve the nation's cultural heritage and to improve teaching effectiveness in the Thai Painting Course, which focuses on the history of Thai painting through the ages, concepts for creating works, both form and content, and Thai painting about people, landscapes, and animals. This course focused on the study of Thai painting's styles, content, and structure, as well as on the practice of complex Thai paintings such as Lai Kammalor that are worth preserving and are appropriate for teaching Thai painting. However, Lai Kammalor drawing is difficult to teach and requires much effort. In this research, video media are utilized to address such issues in teaching and learning. Video media can vividly show the sketching process via graphics and sound effects that are similar to those used in face-to-face instruction. Additionally, video media may highlight creative methods that need sensitivity and bring out certain mistakes and answers. Additionally, audiovisual media may impart information about Lai Kammalor's history.

Literature Review

Currently, video plays a significant role in education, both via its integration into conventional classrooms and as the primary mode of instruction in classes, especially online courses, as well as acting as the basis for many blended programs. Numerous research investigations (e.g., El-Senousy & Alquda, 2017) have shown that technology plays a critical role in enhancing learners' learning abilities. According to Moussiades, Kazanidis, and Iliopoulou (2019), video has long been considered an excellent medium for conveying a variety of instructional subjects. The rapid growth of instructional video is a result of its efficacy and the rapid advancement of video production technology. As a result, the use of instructional videos in higher education has risen in recent years (Gold & Holodynski, 2017). The term "instructional videos" refers to a kind of technology that captures and delivers sequences of instructional images depicting moving events for educational purposes. Instructional videos are a very helpful and efficient tool for computer-assisted learning (Ding, 2018). When presenting learning and teaching activities, the video's distinguishing feature is its use of visual symbols in conjunction with aural systems, since utilizing either auditory or visual symbol systems alone results in much lower recall than combining the two. Additionally, auditory symbol systems are used to complement visual symbol systems, even though visual symbol systems are the primary source of information (Maniar, 2012).

According to Cruse (2006), the most convincing research showing the significance of multimedia technology is the clear connection between frequency of use and students' perceptions of success and motivation. Furthermore, teachers who frequently use videos for two or more hours per week said that two-thirds of their students learn better when they watch videos, and about 70% of teachers reported an increase in student motivation. The ability to understand technological pedagogical material is necessary for the development of technology-enhanced learning (Angeli, 2008). It defines the relationship between knowledge, tools, pedagogy, students, and the framework. Instructor-facilitated materials may be altered to facilitate teaching more effectively while demonstrating technology's added value. In addition to conventional classroom teaching, the use of instructional videos has been shown to be beneficial in strengthening cognitive skills, boosting psychomotor skills, and increasing knowledge retention (Cooper, 2015). Significantly, Brenner and Walter (2018) assert that instructional videos enable offline teaching and training and enable students to adjust to their own learning pace.

When it comes to teaching and studying the art, video media may be beneficial. In the modern day, we may simply and quickly utilize high-speed Internet to enhance information diffusion in education. Video content can be structured in such a way that it is easily accessible and distributed via a smartphone application with the goal of disseminating valuable information, motivating students to study, enabling them to solve problems independently, and successfully developing their knowledge and skills. Birundha (2020) suggests that learners watch the videos at their convenience and without regard for time or location restrictions. Students may study more freely in an autonomous setting. In addition, Srinivasacharlu (2020) demonstrates how video enables students to take notes by pausing and repeating the material until it is fully comprehended. Klaisang (2017) shows that video media are a kind of instructional media that promote student learning by providing for easy and quick access to information. This will help learners develop their knowledge, abilities, talents, and attitudes.

As a consequence, the researcher has an appreciation for the value of the drawing technique. The purpose of this research was to produce video media about Lai Kammalor to support implementation of learning on the Thai Painting Course. The aim of this study was to ascertain the effectiveness of video media and to compare the learning outcomes of Thai Art drawing students majoring in arts education before and after studying with video media. Additionally, this research seeks to preserve this

kind of national art, which is eroding fast from memory. Additionally, Thai Art sketching methods were recorded on film for future generations to inherit Thai cultural heritage.

Related Studies

To date, there have been a number of studies investigating the effectiveness of instructional videos on students’ learning achievements in many contexts. To begin with, Wong et al. (2019) assessed the effectiveness of utilizing instructional videos to teach dental local anaesthesia in an undergraduate oral health program. Their results indicated that 90% of students felt that the videos aided in the acquisition of psychomotor skills that needed accuracy. Similarly, Exposito et al. (2020) investigated whether the use of instructional videos (designed and created specifically for the purpose of teaching dynamic macroeconomic processes) had a beneficial effect on the learning outcomes of an experimental group of students when compared to a control group of students. Their results demonstrate the value of instructional videos, urging academic communities to embrace multimedia and social media as effective teaching tools. In addition, Pambudi et al. (2021) set out to create thirteen instructional videos on the subject of Principles of 3D Computer Animation and then evaluate their effectiveness in terms of student learning. These thirteen instructional videos have been rated “very excellent” based on product testing results. The paired t-test findings indicated that the produced product was successful at increasing students’ understanding of 3D Computer Animation Principles.

In the field of arts, Ginting and Hamid (2019) aimed to develop an instructional video in illustration that could be used as a reference throughout the Fine Arts learning process, as well as to validate and evaluate the video’s effectiveness. Their validation and testing findings show that the created instructional video satisfies the criteria for exceptional quality. Furthermore, this result demonstrates that the material is suitable for use in Fine Arts illustration. They determined that the instructional video is useful and suitable for use in Fine Arts illustration drawing. Despite the fact that instructional videos are useful for teaching and learning, scant attention has been paid to the effectiveness of instructional videos for teaching drawing at the undergraduate levels. In the light of its significance, this study attempted to create video media for learning about Lai Kammalor, to determine the efficiency of video media for learning on Lai Kammalor, and to compare the learning accomplishment of Thai Art drawing students majoring in arts education before and after studying with video media.

Research Hypothesis

There was a statistically significantly higher learning achievement among students majoring in Arts Education who studied with video media for learning about Lai Kammalor than before at the .05 level.

Research Framework

Independent Variable		Dependent Variable
Learning from video media on Lai Kammalor	→	Learning achievement on Lai Kammalor

Research Methodology

Participants

The population in this research included 112 students majoring in arts education at one university in Thailand. The sample groups in this research can be divided into 2 groups as follows:

- 1) The sample group used to find the efficiency of the video media was arts education students who enrolled in the Thai Painting of the academic year 2018. They were not an experiment group, but they were used to find the effectiveness of video media. They were divided into 3 groups from a total of 43 people, as follows:
 - 1.1) Individual sample group of 3 people
 - 1.2) A small group sample of 10 people
 - 1.3) A large group sample of 30 people
- 2) A group that used video media to learn about Lai Kammalor was used to compare learning achievement with scores before and after studying. 20 arts education students who enrolled the Thai Painting course in the Semester 1, Academic Year 2019, were selected purposively.

Research Instruments

1. Video media for learning Lai Kammalor were created in six steps: (1) research pertinent documents, (2) plan and write storyboards, (3) validate the storyline and storyboards with experts, (4) record the media video, (5) edit the media video, and (6) evaluate the video media for their effectiveness.
2. A video media assessment form is used to evaluate the quality of video materials in terms of content and design by experts in Thai painting and Lai Kammalor.
3. The Lai Kammalor quiz comprised of twenty multiple-choice questions.
4. An evaluation form has been evaluated by specialists in Thai painting & Lai Kammalor instruction.

Research Procedures

The researcher divided the research process into 3 steps as follows:

Creating research tools: The researcher developed methods and procedures for developing research instruments by first examining documents pertaining to the bachelor's degree program's goals and objectives, as well as concepts, theories, and documents pertaining to video media creation. The researcher then developed research instruments that included Lai Kammalor video media, a video media assessment form, a Lai Kammalor quiz, and an evaluation form.

Effectiveness Determination Process of Video Media: This is a study using video media for Lai Kammalor in the academic year 2018 to evaluate the efficacy of video media in teaching the Thai Painting course according to the 80/80 standard, which was tested with 43 students who were not part of the real experiment group. The study examined the impact of video media on Lai Kammalor in three distinct categories: individual effectiveness, small group effectiveness, and large group effectiveness.

Comparison of Learning achievement with Pre- and Post-Study Scores: The experiment was performed with 20 students enrolled in a Thai painting course during semester 1 of the 2019 academic year to compare their learning performance with pre- and post-study scores from studying Lai Kammalor through video media.

Data Analysis

The researcher conducted the following analysis to evaluate the efficacy of video media in teaching about Lai Kammalor:

- Determine learning goals by calculating the IOC (Item Objective Congruence (IOC) compliance index.
- Developing a quiz on the Lai Kammalor drawing by determining the complexity and discriminating power of the test item, evaluating the test item by determining the test's variance, and determining confidence levels using the Kuder-Richardson formula 20. (KR-20).
- Using average scores and standard deviation, an expert evaluates the quality of audiovisual material used to teach Lai Kammalor.
- Determining the efficacy of video media for Lai Kammalor learning by examining the process efficiency during study / performance of the task (E1/ E2) in accordance with the 80/80 standard.
- By evaluating quantitative data using a sample t-test independent of each other, comparing the mean scores of learning accomplishment to the scores before and after studying Lai Kammalor through video media (t-test for dependent sample)

Findings

The results of the research can be summarized as follows:

1) Video production for learning Lai Kammalor drawing: The researcher's creation of learning videos on the topic of Lai Kammalor drawing resulted in a mean of 4.76 with a standard deviation of 0.34, which is greater than the researcher's criterion of 3.50. When the mean for each aspect was considered, it was discovered that the content and design aspects were in excellent condition, and the video media may be utilized to determine their efficiency.

2) Finding the efficiency of video media for learning on Lai Kammalor drawing: To evaluate the efficacy of the video in organizing learning about Lai Kammalor's drawings. The researcher evaluated the efficacy of the researcher's video. The following are the findings from the data analysis:

2.1) The results of an experiment with three non-sample students to determine the efficacy of a video for learning about Lai Kammalor drawing suggested that there should be a periodic pause in the video at each step, a slowing down of the video speed during the solution mixing process, and the gilding process requires a great deal of elaboration and concentration so that students can follow along. This has been fixed in the Phase 2 of study.

2.2) The findings of a study performed with a small group of ten non-sample students to determine the efficacy of a video for learning about Lai Kammalor drawing. The researcher treated instruction like it was a Phase 1 trial. The students were able to follow the video media since the researcher increased the pace of the video and then stopped and replayed the video media in each step while the students collected information about Lai Kammalor.

2.3) The effectiveness of a video for learning on Lai Kammalor in a large group of 30 non-sample students was determined as indicated in Table 1.

Table 1: The Results of the Efficacy of Video in Learning Lai Kammalor in a Large Group

Instruments	N	Full scores	Total Scores of all tasks	Total scores of all students	%
Quizzes()	30	20	600	484	80.67
Drawings()	30	15	450	375	83.33

As shown in Table 1, the effectiveness of a learning video on Lai Kammalor is shown. The percentages of a large group were 80.67/83.33, showing that the researcher's video media on Lai Kammalor was effective according to the established criterion of 80/80, i.e., the percentages of the scores achieved by students taking the quizzes were not less than 80. Clearly, the percentage of performance score was more than 80 in this research, which may be utilized to teach students how to draw Lai Kammalor. Additionally, the findings supported the researcher's hypothesis.

Comparison of Learning Achievement

The results are from comparing the learning achievement with scores before and after learning with video media on how to write Lai Kammalor of 20 students.

Table 2: Comparison of the Learning Achievement with Scores before and after Learning

Tests	n	\bar{x}	S.D	t	df	Sig
Pre-Test	20	19.45	3.72	8.59	19	.00
Post-Test	20	29.00	3.13			

$p \leq .05$

Table 2 summarizes the findings obtained before to and after the use of video content. As a result, the mean score was 19.45 out of 35 before to utilizing the video media, and 29.00 out of 35 after using the video media. When the average scores before and after video media usage were compared, the average score after video media use was statistically significantly higher than the average score before video media use at the .05 level. Additionally, the researcher’s video media in the learning Lai Kammalor were successful, resulting in better learning achievement for art education students.

Discussion

It can be inferred that the process of creating educational videos on Lai Kammalor included the following six steps: (1) do relevant document research, (2) design and create storyboards, (3) verify the plot and storyboards with experts, (4) record the media video, (5) edit the media video, and (6) assess the video media’s efficiency. These stages seem to be consistent with Nonthamol’s (2019) research on planning for the creation of instructional videos in the digital era, in which he offers the following phases: 1. Analyze the material; 2. Establish the video instruction’s goals; 3. Determine the video presentation, the program, the timetables for the programs, and the length of the video. 4. Conduct an analysis of the pupils. 5. Analyze the video presentation; and 6. Create instructional exercises that use video. 7. Decide how to use the footage. 8. Select a location for the instructional video production, 9. Choose the responsible person and equipment for the recording, and 10. Set a budget.

The mean of educational video production was 4.76, with a standard deviation of 0.34. The standards for video media quality were established by taking the average of each question into account. Which of the following gets an average rating of “excellent to very good”? Additionally, the overall average cannot be less than the “excellent” standard, which is the creation of a video for educational purposes. Lai Kammalor is a medium that aids in the dissemination of information. The information is presented in a suitable manner for the intended audience.

The material is presented in a step-by-step fashion, using simple, easy-to-understand language and providing fascinating topics. The material may pique learners’ interest, which aids in the enhancement of learning activities that are efficient and effective for learners, as well as the development of knowledge and comprehension for learners. According to Na Songkhla (2018), media is a channel for transmitting knowledge in a variety of ways from the sender to the receiver in order for the recipient to comprehend the meaning of the instruction. It is a mode of communication and a piece of technology that facilitates classroom activities. The instructor creates a lesson plan and is responsible for teaching the lesson according to the plan, which includes the use of appropriate media and technology to maximize knowledge transfer and foster student understanding, thereby enabling learners to develop knowledge in accordance with the purpose of teaching effectively. The media will assist in promoting, adding value, and increasing knowledge for learners in order for them to become more clear and complete in accordance with appealing and easy-to-use concepts and theories of learning. Additionally, visual media may aid in the presentation and delivery of courses. The techniques and methods are given in a logical and step-by-step manner. The video may be repeated to assist learners with comprehension or for revision. It is ideal for displaying crisp and clear pictures. The text size corresponds to the video’s size, the music, the text, the appealing visuals, and the video’s length are all suitable. Luanmongkol (2015) demonstrates that teaching Thai painting should include both theory and practice, using instructional materials that follow a logical sequence compatible with the present environment. It will also pique pupils’ attention. As a result, it will be able to help pupils improve their abilities. According to Somnuk (2015), utilizing video as the primary mode of instruction improves the learner’s learning quality, their ability to recall more and longer, their ability to learn more in a given amount of time, and their interest and involvement in the learning process.

As a result, video media for teaching Lai Kammalor can successfully explain processes via the use of video methods, enabling learners to see what has to be highlighted. Students can view more clearly and completely if the films are edited to magnify the pictures. Pre-video may also help minimize demonstration errors. This saves time by eliminating the need to demonstrate for students to observe each time they lecture. Additionally, it may result in an online system that provides students with 24/7 access to video content.

To determine the efficacy of video media in the classroom, the sample group was created, consisting of 43

students in the area of arts education who enrolled in Thai painting during the second semester of the academic year 2018. There were three steps:

Stage 1: Identifying individual efficiency, it was discovered that students recommended a periodic stop in the video at each step, a slowing down of the video speed during the solution mixing process, and that the gilding process takes much elaboration and attention to follow along. This was corrected in Phase 2 of the research.

Step 2: Determining the effectiveness of small groups, it was discovered that pupils were able to follow video media due to the researcher's increased video speed. The movie then pauses at each stage and is repeated while the students gather information on Lai Kammalor.

Step 3: Determining Group Performance After modifying the movie to meet the needs of the students, it was determined that the film's efficiency for learning Lai Kammalor was equivalent to 80.67/83.33. The effective criteria were 80/80, suggesting that the film in this research aided students in developing a better knowledge of the history and process of producing works by Lai Kammalor, a national identity that should be maintained and conserved. This is consistent with Nakrak (1997), who investigated the efficacy of videotape for teaching the skill of stringing the chipmunk's garland. The experiment was conducted in three stages. The efficacy of videotapes for teaching the stringing of the chipmunk garland is 88/89.27, which is more than the required criterion; therefore, the instructional video tape is deemed to be suitable for teaching and learning.

A comparison of learning achievement with pre- and post-study scores from video media learning revealed that video media is effective enough to be utilized to educate in accordance with the hypothesis. When the researcher utilized learning video material on Lai Kammalor, the mean score before to utilizing the video media was 19.45, and the mean score after using the video media was 29.00, out of a possible 35. When the average scores before and after video media usage were compared, the average score after video media use was statistically significantly higher than the average score before video media use. It shown that the researcher's video media on Lai Kammalor were successful in terms of affecting the learning accomplishment of art education students. This is consistent with the findings of Phasuk et al. (2016), who examined the evolution of video media in the Sukhothai Kingdom's Social Studies, Religion, and Culture Group: History Mathayom 1. (Grade 7). Their findings indicated that video media now has greater efficiency values than it had before. Before studying, the average of all units was 83.47; after studying, it was 85.22, with excellent quality

exceeding the 80/80 criterion. The mean score after using video media was 38.48 percent, which was significantly greater than the efficiency before using video media, which was 22.24 percent, at the .01 level of significance. This is congruent with Yako (2011), who examined the impact of learning using blended lessons based on the cooperative learning idea on MathayomSuksa 5 (Grade 11) pupils' mathematics learning success. The results indicated that blended lessons developed around the cooperative learning concept were 83.33/82.40 effective, and that students who learned through blended lessons developed around the cooperative learning concept achieved greater learning outcomes than students who learned through the cooperative learning approach. substantially different from normal at the .01 level.

As previously said, utilizing videos to teach students about Lai Kammalor is beneficial since they include pictures and noises that may inspire students. Additionally, the researcher's video media for learning about Lai Kammalor were successful, positively affecting the learning accomplishment of art education students. they include pictures and noises that may inspire students. Additionally, the researcher's video media for learning about Lai Kammalor were successful, positively affecting the learning accomplishment of art education students.

Suggestions for Practical Implementation

1. Teachers should study the concepts of video production and Lai Kammalor by first comprehending the processes involved before using them in learning activities to ensure that the activities are carried out properly and in accordance with the plan.
2. In cooperation with the teacher, a video about Lai Kammalor should be utilized to help students comprehend the method and the process of drawing. When students have difficulties drawing Lai Kammalor, they will be able to instantly consult with the teacher.

Suggestions for Future Research

1. A study of the use of video media and other forms of art that may help students improve their abilities should be conducted to serve as a guide for those interested in doing research in this area.
2. Prior to doing research or engaging in activities connected to Lai Kammalor, the researcher should investigate the purchase of drawing equipment, since certain equipment is difficult to find.

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