DEVELOPMENT OF INTERACTIVE DEMONSTRATION VIDEO MEDIA TO ENHANCE THE SKILL OF CREATING ONLINE LEARNING MEDIA FOR THE PRE-SERVICE TEACHERS

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ABSTRACT

Video is another type of media that is used in the education industry because video is a medium that can record images and sound simultaneously. It can be edited, re-recorded, reused, and instantly view slow or fast images as desired. This research aims to 1) develop interactive demonstration video media to enhance the skills of creating online learning media for the pre-service teachers to be effective according to the 80/80 criteria 2) study the learning achievement of students before and after learning with interactive demonstration video media created, and 3) study the skills of creating online learning media of the pre-service teachers. The participants were selected using a simple random sampling method, which included thirty second-pre-service teachers, Department of Digital Technology for Education, Faculty of Education, Suan Sunandha Rajabhat University. The research pattern was the one-group pretest and posttest design. The statistics used to collect data include mean, standard deviation, and t-test values. The results of the study were as:1) the efficiency of the interactive demonstration video media was 89.00/88.67 more than the criteria at 80/80 2) the achievement after learning with the interactive demonstration video media higher than before learned was significantly at .05, and 3) Students' skills in creating online learning media are at a good level. ($\bar{x}$ = 4.23, S.D. = 0.71)

Keywords— Interactive, Demonstration video, learning media

INTRODUCTION

The current advancement in technology and communication has greatly impacted the learning of the younger generation. Around the world, educational institutions are increasingly using these for teaching and learning, which could be called the Higher Education Revolution. (Selwyn, 2007; Devitt and Palmer, 1999; Karakas and Tekindal, 2008) In the process of organizing education, computers are brought in to help organize teaching and learning, school administration, and development of teaching materials for use in teaching and learning, (Saran Wichitpanichkul, 2021) such as Computer Assisted Instruction, E-Leaning, Web-Based Learning, Online Learning, Electronic Book, Learning through online videos, etc. Learning through this new media allows youth to access knowledge content more easily and quickly than before. Modern learners are more interested in learning through new media than traditional media, such as textbooks or books.

Nowadays, video media is considered an element of every organization and every person's daily life. Every image and every story from video media influences the attitudes, beliefs, and feelings of the general public because it is a service to arrive home. Some use marketing strategies and psychology. Some ads use repetition frequently. Make viewers remember, be impressed, and change according to that media without realizing it. Video is a medium that provides realistic images and sound. Images and performances can be captured with a camera as easily as a photograph. But what's better than a photograph is that the

presentation of images recorded with a video camera has natural movement. Video is another type of media that is used in the education industry because video is a medium that can record images and sound simultaneously. It can be edit, re-recorded, reused, and instantly view slow or fast images as desired. (Subin Ekajit, 2018) However, Pariwat Somnuk. (2015) said: The advantage of using video as the major media is that it helps improve the quality of learning for students, being able to remember more and longer, help learners learn at greater volume in the allotted time, help learners to be interested and involved in the learning process.

Delivering content to students via video is gaining traction (Berry et al., 2012) due to the ease of recording and producing instructional videos. University faculty are exploring the process of creating their teaching materials as an alternative way to distribute their teaching. Some have moved their educational video content to external hosting services, such as YouTube. (Gilroy, 2010) Teacher participation in the development and dissemination of instructional videos and students' ability to independently search and learn from millions of available video resources is an important aspect of how to engage students with video content. (Olha Ketsman et al., 2018)

Therefore, from the importance and reasons mentioned above, the researcher is interested and has an idea to develop interactive demonstration video media to enhance the skills of creating online learning media for the pre-service teachers.

OBJECTIVES OF THE RESEARCH

This research has the following objectives:

1. To develop interactive demonstration video media to enhance the skills of creating online learning media for the pre-service teachers to be effective according to the 80/80 criteria.
2. To study the learning achievement before and after learning with interactive demonstration video media created.
3. To study the skills of creating online learning media of the pre-service teachers.

METHODOLOGY

This research was an experimental research using a one-group pretest and posttest design. The variables studied as follows: 1) the primary variable is interactive demonstration video media on the topic “Creating online learning media.” 2) The dependent variables include media effectiveness, academic achievement, and online learning media creation skills.

The researcher defined the research process and conducted the study as follows:

1. Population and Participants

The population was pre-service teachers, Department of Digital Technology for Education, Faculty of Education, Suan Sunandha Rajabhat University, 2nd year, 1st semester, and academic year 2023, 60 students.

The participants were selected using a simple random sampling method, which included thirty second-year pre-service teachers, Department of Digital Technology for Education, Faculty of Education, Suan Sunandha Rajabhat University.

2. Research instruments

The research instruments consist of 1) the interactive demonstration video media, 2) Learning management plan, 3) learning achievement tests (pretest and posttest), and 4) a learning media creation skills assessment form.

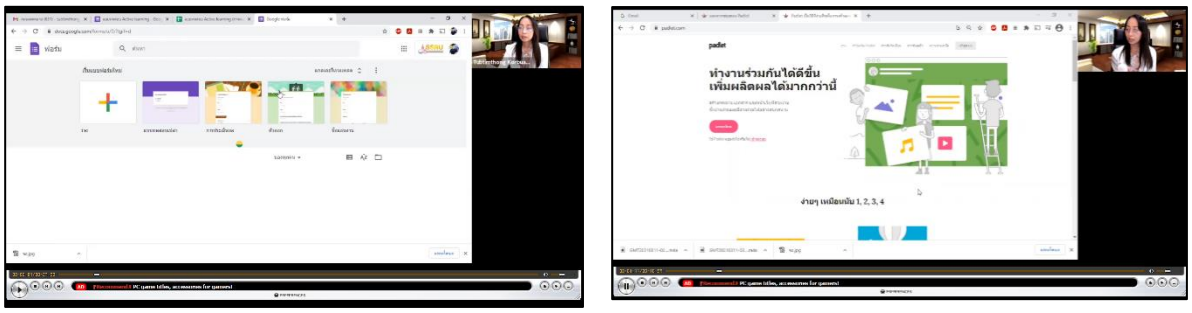

Figure 1 Shows sample images of the interactive demonstration video media.

3. Data collection

1. The participants took a pre-test.

2. Conduct instruction according to the specified learning management plan activities by allowing learners to learn with interactive video demonstration materials created. There are three topics: creating quizzes with Google Form, creating discussion boards with padlet.com, and creating online lessons with Google Site, etc. Interspersed with interaction between learners and lessons, students must answer questions inserted during the class with a video demonstration at regular intervals.

3. When students have completed all three subjects, they will take a posttest and create online learning Medias, then present the work in front of the class and send the lesson link in the Google Classroom channel.

4. The researcher assessed the skills of creating online learning media with a learning media creation skills assessment form.

4. Statistics

The data were analyzed by the application of percentage, mean ($\overline{x}$), standard deviation (S.D.), and comparing learning achievement scores (pretest and posttest) was analyzed by t-test.

RESEARCH RESULT

The researcher has divided the research findings into 3 parts as follows:

Part 1: Results of efficiency analysis of interactive demonstration video media.

The results found that the average score of the exercises during class was 89.00 percent. The average score of the posttest was 88.67 percent, indicating that the interactive video demonstration media created has an efficiency of 89.00/88.67. It has higher efficiency than the specified criterion, as shown in Table 1.

Table 1: shown efficiency of interactive demonstration video media created (n=30)

Item	Full score	Average score	Percent
Exercise during class	20	17.13	89.00
Posttest	20	17.06	88.67

Part 2: the results of the study of learning achievement.

The researcher collected data on scores obtained from taking pretests and posttests. The data were then analyzed with t-values (t-test) using the SPSS program to compare the achievement before and after learning with the interactive demonstration video media created. The results appear as shown in Table 2.

Table 2: Showed learning achievements between pretest and posttest

Test	N	Mean ($\bar{X}$)	Standard deviation (S.D.)	t-test	P-value
Pretest	30	11.23	1.61	13.037*	0.000
Posttest	30	17.06	3.05		

*P-value < 0.05

Table 2 shows that students' learning achievement after learning with interactive video demonstration media (posttest) was statistically significantly higher than pretest at .05 because the t-test calculated with SPSS was more than the t-test obtained by opening the table at position $\alpha = .05$ and df = 30-1. One-tailed t is 1.6991, indicating that learning using interactive demonstration video media can increase learners' learning and knowledge.

Part 3: Results of the study of online learning media creation skills.

The researcher collected data on scores obtained from taking pretests and posttests. The data were then analyzed with t-values (t-test) using the SPSS program to compare the achievement before and after learning with the interactive demonstration video media created. The results appear as shown in Table 2.

The results of online learning media creation skills of 30 second-year students shown in Table 3.

Table 3: Showed results of online learning media creation skills.

Evaluation list	Analysis results		Description
	$\bar{X}$	S.D.	
1. Content analysis skills to prepare learning media.	4.20	0.66	Good
2. Screen design skills and use of learning media	4.57	0.67	Very good
3. Skills in developing learning materials using computer programs	4.51	0.76	Very good
4. Media implementation skills	3.77	0.86	Good
5. skills in evaluation Learning media	4.10	0.71	Good
Total	4.23	0.71	Good

* Legend: 4.51-5.0 (very good), 3.51-4.50 (good), 2.51-3.50 (Moderate), 1.51-2.50 (Fair), 1.0-1.50 (Poor)

Table 3 shows that the overall average of online learning media creation skills was good ($\bar{X}$ = 4.23, S.D. = 0.71) and when considering each item, it was found that screen design skills and learning media usage averaged at a very good level. ($\bar{X}$ = 4.57, S.D. = 0.67) Followed by: Skills in developing learning materials using computer programs are at a very good level ($\bar{X}$= 4.51, S.D. = 0.76) and content analysis skills to prepare learning media. The average is at a good level, respectively. ($\bar{X}$ = 4.20, S.D. = 0.66)

DISCUSSION

This research has been based on the objectives of the research, which can be discussed as follows:

1. The performance analysis of interactive demonstrations video media was 89.00/88.67, which is more than the criterion of 80/80. It is because the researcher has prepared a demonstration video that shows the media creation process for each subject in detail and clearly with both images and sound. The content is complete. Including inserting questions to create interaction with students while watching the demonstration video in order to emphasize understanding and review what has been seen and heard from the demonstration video media that students are learning. In addition, the research results are consistent with the research of Prapatcha Paidan (2015), she studied the effect of using documentary video media on the attitude and academic achievement of Mathayom Sueksa 3 students in the subject of weaving loincloth. It found that the efficiency of the video media created was equal to 80.33/84.00, which is higher than the specified criteria of 80/80 and also consistent with the research of Yupayong Klanprasert (2008), studying the development of interactive video lessons on plant propagation Career and Technology Course Mathayom 2 Prathai School Nakhon Ratchasima Province. The number of students was 46 by purposive sampling. The results of the study found that created interactive video lessons, it has an efficiency of 85.75/83.75, which is higher than the set criteria.

2. When considering the comparison of academic achievement before and after learning with interactive demonstration video media, it found that learners had higher academic achievement after learning than before learning statistically significant at the .05 level. It may be due to the completeness of the content, and the presentation of the content step by step in video make the learners understand and memorize the content well, and they can apply the knowledge gained in practice. The results of this research are consistent with the research of Piyanut Auksorndee and Teeraporn Plailek (2021) which conducted research on “Creating of Learning Media Throughout Interactive Video for Helping Students to Remember the Use of Expressions of Grade 6 Students in Wat Benjamaborphit Secondary School”. The results of the research found that the target group's average score on the posttest was higher than the average score on the pretest. The average progress score was 16.67, which was 55.56% higher than before. It is also consistent with the results of Sukya Bunpipat (2013) who study about “Creating video media about conversation sentences in 3 languages in convenience stores for organizing distance learning at the vocational certificate level, Year 1” It was found that the developed video media was effective according to the criteria. Learners had higher post-study scores after learning with video materials and they were most satisfied with videos.

It is also in line with the research of Hill (2001) who study of academic achievement from learning combined with the use of video tapes. The results of the research comparing teaching using video tapes with conventional learning found that teaching using video tapes had better results than conventional teaching, and commented at the end that it may be because teaching on video tapes is better prepared.

3. The results of the study of the skills of creating learning materials of the learners. It was found that the overall average was good, probably because the learners studied and learned systematically through the interactive demonstration materials created. After learning, the knowledge can be applied immediately. Therefore, they can create an online learning media and have good skills in creating learning materials. This is consistent with Jahfet (2023) who study about "Teacher-Made Videos as Learning Tool in Elementary Statistics during the Pandemic: A Developmental Research" The result found the teacher-made videos were highly acceptable in terms of learning objectives, content, organization and presentation, format and design, learning activities, and assessment as evaluated by the students and experts. In addition,

It was also found that the evaluation factors in the acceptability questionnaire all have a strong, positive correlation with the overall acceptability mean. Thus, technology-enhanced instructional materials like videos and other learning media are helpful learning resources in maximizing learning outcomes amid the pandemic.

CONCLUSION

In the education industry, video media is widely used because video media can present animated content, audio descriptions, characters, and graphics with accurate and reliable details based on guiding principles and theories to enable learning, stimulation and motivation. Therefore, video media influences attitudes, beliefs and thoughts of the general public. From the results of this research, it can be seen that the effectiveness of the interactive demonstration video media created is higher than the specified criteria. In addition, the academic achievement of students after studying is still higher than before, with statistical significance at the .05 level. It was also found that Learners have skills in creating learning media. Overall, it was at a good level, indicating that the interactive demonstration video media had an impact on the learning progress of the students and helped the students to have the skills to create learning media on their own very well. For the next research, the researcher suggested that other forms of video media should be developed and compared with other media to create new knowledge.

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