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The Development of a Demonstration Video for the Topic of Fruit Carving in the Food Presentation Arts Course

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Abstract: The demonstration video for the topic of fruit carving in the food presentation art course is a self-directed learning material for users in the field of hospitality. Self-directed learning in practical learning by focusing on this video increases motivation, understanding, and clarity in learning. The purpose of this study is to design and develop a demonstration video for the topic of fruit carving. The study is also carried out to identify the functionality of the product and test the level of usability of the product against the readiness of self-directed learning. This study uses quantitative research in product development by applying the ADDIE development model for product development and the Garrison learning model in the development of learning content. The researchers used a purposive sampling method of 30 students in the field of catering by choosing two experts in the field of instructional design and two experts in the field of catering for a validation process. Data was collected and analyzed using frequency and percentage values based on a checklist form that had been distributed. Each item is classified into a group and frequency data is recorded as a percentage. The study's findings show that experts agree 100% on the elements of content, functionality, and usability of the product. While in the effectiveness of the product, 94% agree with self-management, 96.7% agree on self-monitoring and 93.76% agree on motivational elements through the Garrison model. The research proposal is to expand on various learning topics, especially in the practical field of self-directed learning.

Keywords: ADDIE model, Garrison Model, Self-directed Learning, Video Demonstration

1. Introduction

With various multimedia technologies that are developed by technological changes, the field of education is also indirectly involved in ensuring that the field of technology in education does not lag. Education is an important element in determining the quality and pattern of the current generation in line with the current needs and requirements of various job sectors. The facilities of modern technology

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have now awakened the desire for individual or independent learning. Tajudin et al. (2022) stated that self-directed learning can improve student understanding through blended learning.

Learning media in the field of education is common to the teaching and learning process. It is a tool and material in the process of imparting knowledge so that it is more effective and easier to understand. In parallel with modern technology, many mediums can be applied to ensure that delivery tools and materials are more interesting and effective in teaching and learning sessions (Rahmadhani, 2021). The integration of classroom technology has become a must for educators. This is because changes in digital technology can improve student understanding and can vary the diversity of teaching and learning strategies for teachers and students.

Diana et al (2020) stated that the development of technology has given space for teachers to apply this technology in the field of education. It can also help teachers in delivering the teaching and learning process to be more efficient and effective by applying a variety of learning media. According to a study conducted by Zhoc et al. (2016), increasingly modern technological changes have led to changes in learning styles at the higher education level. The self-directed learning style (SDL) has been introduced and applied in higher education institutions in Malaysia in general and other developed countries. In empowering and implementing this self-directed learning, some constraints must be faced according to the study of Win et al. (2023), limited reference sources, and less implementation by instructors.

According to Ariani et al. (2019), teaching methods with traditional reference sources, the level of understanding of a topic is less interesting and difficult for students to understand. Resource constraints in the teaching process will restrict students' understanding, especially in learning involving practical sessions. According to Yadav et al. (2011), the techniques and elements used in the teacher's teaching process will hinder and inhibit the delivery to students. A good teaching method and approach can improve students' understanding.

1.2 Research Background

According to Ali et al (2020), the style and pattern of learning in HEIs require the effort of students in the form of self-learning in the master of a field or topic being studied to increase understanding and knowledge. In addition to the self-learning style that must be implemented by the students themselves, the lecturers act as facilitators in the learning and teaching process. Self-learning is a student-centered learning style that makes students or undergraduates more autonomous in their studies. Where the students are free to determine the pattern in exploring knowledge that can benefit them. Saamri et al. (2021), stated that the self-learning approach will give responsibility to students to determine the learning pattern and determine the direction and purpose of their learning. This self-learning approach involves the process of exploring, collaboration, sharing, creativity, connection, and reflection. Jamidi et al. (2021) stated that success in self-learning will affect an individual's motivation, seriousness, and confidence. At the same time, it has a positive impact on a person's self-improvement.

1.3 Garrison's Model of Self-Directed Learning

Garrison's (1997) comprehensive model of self-directed learning defines SDL as a process in which individuals take responsibility and control for monitoring and managing learning tasks and activities, going beyond external task control, and integrating cognitive monitoring and motivational processing. According to Garrison (1997), SDL is achieved through three dimensions that interact with each other, namely self-management, self-monitoring, and motivation. In an educational environment, self-management involves the use of student learning resources in a learning context. Figure 1 describes the three elements in Garrison's model of self-directed learning.

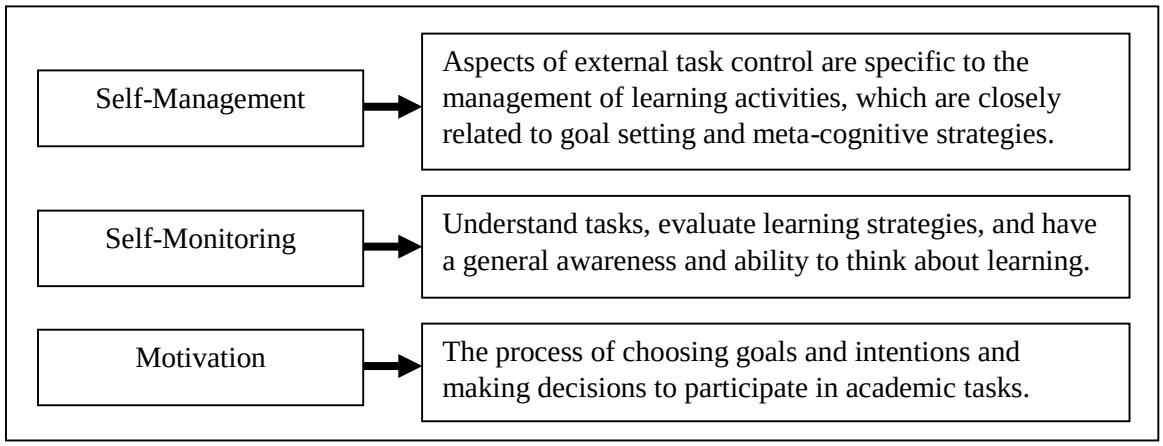

Figure 1: Garrison's Model of Self-Directed Learning

1.4 ADDIE Model

According to Baharum et al. (2021), the approach in designing based on the ADDIE model is an approach that is compatible with various forms of development. This is because the ADDIE model approach is not too complicated in module development for beginning designers. Figure 2 shows the conceptual framework for this study. On the product development input side, the ADDIE Instructional Design Model included the analysis phase, design phase, development phase, implementation phase, and evaluation phase. Meanwhile, Garrison's Self-Directed Learning Model is used as a guide in designing and developing a Demonstration Video for the Fruit Carving Topic in the Food Presentation Art Course.

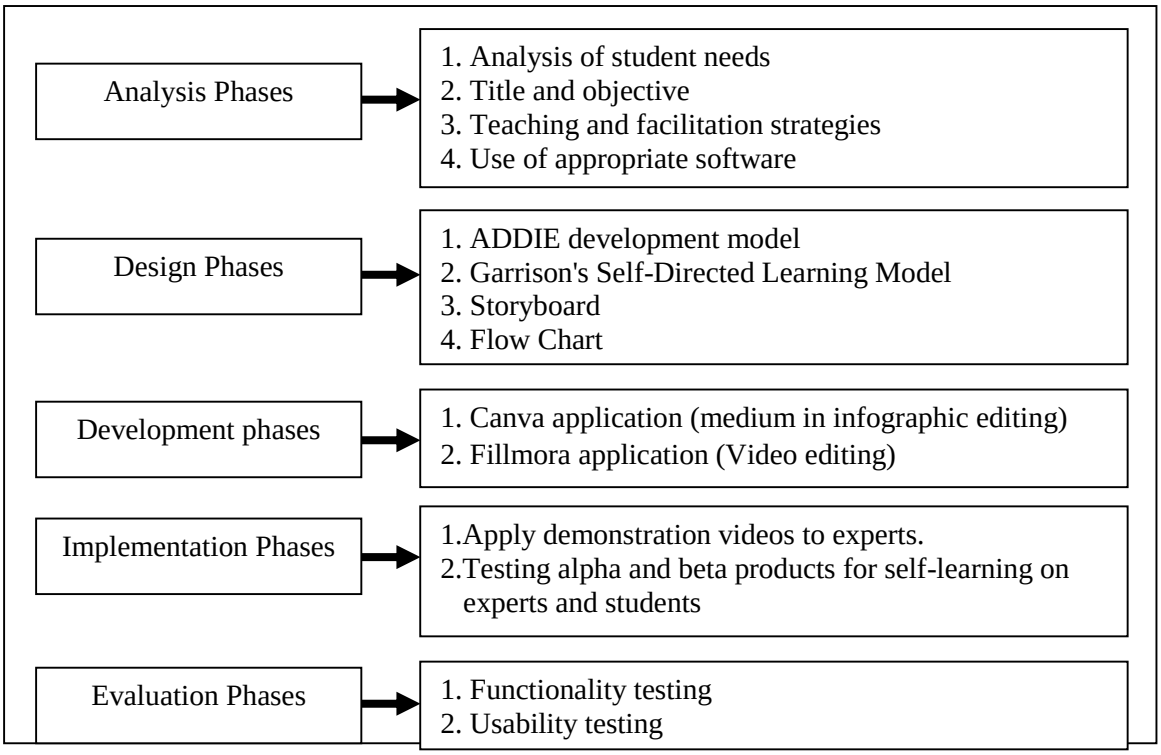

Figure 2: Study Concept Framework

1.5 Research Question

The following is a research question in the development of a demonstration video for the topic of fruit carving in the food presentation art course:

1. How is the process of designing and developing demonstration videos for the fruit carving topic in the food presentation course conducted?
2. What is the level of functionality of the demonstration video for the fruit carving topic in the food presentation course?
3. What is the level of applicability of the demonstration video for the food carving topic in the food presentation course from the aspect of students' self-learning readiness?

2. Methodology

In this study, the researcher used a survey in the form of a quantitative approach. The sampling method used in this study is purposive sampling because it uses an existing group of students who studied the topic of fruit carving during the semester. The research sample selected was a total of 30 students of Bachelor in Technical Vocational Education majoring in catering at the Faculty of Technical and Vocational Education, UTHM.

The instrument used in this study is a questionnaire that uses a Four-Point Likert Scale to examine aspects of design, functionality, and usability of a demonstration video for the topic of fruit carving in a food presentation art course. The Alpha Cronbach reliability value for the user evaluation form is 0.748 in the self-management section, which is at a good and acceptable level, while in the self-monitoring section, it is 0.918 and 0.871 in the motivation section. This shows that the values for both sections are very good and effective with a high level of reliability. The data analysis method for this study is a descriptive statistical method that looks at the mean score and percentage. Table 1 shows the interpretation of the mean score to see the results of the research question.

Table 1: Interpretation of the mean score according to Taber (2018) and Daud et al. (2018)

Mean score value	Interpretation of the mean score
1.00 – 1.50	Lack of relevance
1.51 – 2.50	Low
2.51 – 3.50	Moderate
3.51 – 4.00	High

3. Finding and Discussion

Based on Table 2 which represents the analysis of the design aspect of the demonstration video for the topic of fruit carving in the food presentation art course, the overall mean score for the design aspect is 3.96 which can be categorized at a high level. Overall, all respondents agreed with the design features that had been developed. The background and color tones used are appropriate for the user. The arrangement of the storyboard that has been developed is also appropriate to the teaching topic.

Table 2: The findings of the study include the functionality and usability of the product

Item	Percentages (%)
Design Format	100
Content	100
Applicability	100

Findings from the analysis of the study that has been carried out, the experts have agreed that the suitability of the module format developed. The experts also agreed that all visual elements were integrated with each learning video. This is because the researcher has drawn up and evaluated every aspect of the needs desired by the user because of the preliminary study conducted. In addition, the researcher has designed and determined every aspect of multimedia that is applied in this demonstration video so that the elements provide the best video results (Abdulrahaman et al, 2020). Indirectly, it shows that the expert group agreed on the determination of the multimedia aspect has produced a demonstration video that has a high potential to attract the attention of users in making this demonstration video the best reference material.

Through the analysis of the research in the context of the content that has been carried out, the researcher can conclude that the content is a very important aspect and criteria to be concerned about in the development of learning videos. This is because the content refers to the effectiveness of the learning material that will be delivered. The demonstration video content also refers to the instructions, learning materials, and examples found in each section. The results of the study show that expert respondents agree that all the elements in the content of the demonstration video are appropriate and meet the needs and requirements in learning (Harun et al., 2003).

Content elements that include learning objectives and outcomes, introduction of learning videos, clarity of instructions, layout of multimedia elements and learning content complement the wishes and needs of users in fruit carving. All these elements are agreed upon by the expert assessors. Like item number 6 which is according to Pilling et al. (2007), "the learning video provided refers to the steps of the self-directed learning strategy". This can be evaluated for its effectiveness with the application of the garrison model in the development of demonstration video content. According to Song et al. (2007), each element in the garrison model is detailed in this learning video so that users can practice it in self-directed learning with high success. In addition, respondents to item number 11 which is "all the content in the learning video can be used as a good reference source in the learning session" obtained a high percentage from all the evaluators. The development of the content of this demonstration video is in line with elements from the garrison model to make this demonstration video a self-directed learning material.

Referring to Table 3, self-management in the usability of the demonstration video is at a medium to high level of interpretation with a mean value of 3.3 and an average percentage value of 94% of the user group. The user group agreed that evaluating the element of self-mastery in the usability of the demonstration video can improve the user's self-management in acquiring knowledge. Self-management assessment items refer to time management, learning methods, responsibility in self-management, and understanding learning objectives that can foster self-control in self-directed learning (Ali et al., 2020). Therefore, with good self-management, users can refer to learning videos by setting what the user wants to master throughout the learning process. From such a setting, users can organize and manage themselves for learning.

Table 3: Research findings on the usability of demonstration videos in self-management clusters

Item	Mean	Standard deviation	Interpretation level
Plan good time management.	3.27	0.450	Moderate
Organized my busy schedule to study the topic.	3.37	0.490	Moderate
Set my own goals in video learning sessions.	3.13	0.629	Moderate
Control my routine during the learning session	3.23	0.568	Moderate

Referring to Table 4, in self-monitoring, the mean level of interpretation is at a medium to high level with an average mean value of 3.36, and users agree with an average percentage value of 96.7%. This shows that users agree with this demonstration video to be able to monitor themselves in the learning process. According to Pilling et al. (2007), with good self-monitoring in learning through this demonstration video, users can follow all the processes and steps shown in the demonstration video without any distractions so that self-monitoring in learning is easy to understand effectively. In addition, the problem stated by the researcher, which is the method of teaching and learning in the classroom, creates difficulties in the delivery process. Therefore, the development of this video can improve the understanding and clarity of users in learning involving practicality and skills.

Table 4: Research findings on the usability of demonstration videos in self-monitoring clusters

Item	Mean	Standard deviation	Interpretation level
Be able to review the topic of fruit carving in the food presentation art course outside of lecture time by referring to the demonstration video.	3.50	0.509	Moderate
Be able to follow the fruit carving process shown in this learning video clearly.	3.27	0.691	Moderate
Be able to learn the skills shown in the learning videos clearly through demonstration videos.	3.37	0.556	Moderate
Understanding learning in learning video shows clearly.	3.30	0.466	Moderate
Understand all the steps of fruit carving easily	3.23	0.504	Moderate
This learning video provides content that is exactly what I need.	3.33	0.547	Moderate
Understand the content of the learning videos provided easily.	3.43	0.568	Moderate

Table 5 shows the findings on the usability of demonstration videos in the motivation cluster. The last element is motivation in the usability of demonstration videos in self-directed learning. Findings from the evaluation of the mean level of interpretation are at a medium to high level with a mean value of 3.33, and users agree with the mean percentage value of 95.2%. According to Shahrouri (2016), this shows that users agree with this demonstration video which can increase motivation in users. The motivational element in self-directed learning can be seen through the display of fruit carving results, which will increase the motivation of users to continue learning through demonstration videos and create a happy feeling in learning.

Overall, it can be concluded that this learning video is suitable and has a good quality of self-directed learning material. According to Hsiao et al., (2016) and Cai et al., (2017), some of the elements applied among them are multimedia technology elements and digital technology elements. The first element is the element of information technology. This demonstration video is effective as a self-directed learning material that can improve students' understanding of the application of grades, audio, and video. This application can provide a visual experience where users can see in detail the techniques and methods applied in the fruit carving demonstration video. This is important in attracting the interest of users through graphic displays and videos that can help users increase their knowledge on this topic.

Then the second element, the application of digital technology element applies the use of digital technology to access learning materials. This is very compatible with self-directed learning where users can access these learning videos flexibly without being bound by time constraints. The sharing of demonstration videos on digital platforms can improve the basic skills of users in exploring online learning resources.

Table 5: Research findings on the usability of demonstration videos in the motivation cluster

Item	Mann	Standard deviation	Interpretation level
Through video learning, I can plan my learning method well.	3.27	0.521	Moderate
Enjoy self-directed learning with learning video references.	3.40	0.563	Moderate
Be responsible for this self-learning.	3.30	0.551	Moderate
Have skills in using the YouTube platform to access this learning video.	3.20	0.664	Moderate
Understand the continuity of learning videos from one process to another.	3.17	0.531	Moderate
Understand the learning objectives clearly stated at the beginning of the video.	3.30	0.466	Moderate
Learning using this learning video can improve my understanding related to the topic of fruit carving.	3.37	0.615	Moderate
Satisfied with the learning video that has been learned.	3.37	0.556	Moderate
Overall satisfied with the learning videos provided.	3.57	0.568	High

4. Conclusion

Designing and developing a demonstration video for the topic of fruit carving in a food presentation art course is an improvement method carried out by the researcher for self-directed learning. In addition, this learning video can integrate learning using IoT. The results of this study received a positive response, but there are still some improvements that need to be made to further strengthen the demonstration video produced. Among the suggestions for improvement that can be submitted are building exercises or assignments at the end of this demonstration video or learning video to improve user understanding, making an overall summary at the end of each learning unit, and expanding the learning topic to make this demonstration video a compact and best learning video.

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