Developing animated video for maincourse learning

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Abstract. This study aims to design video animation for maincourse learning in vocational education, especially the learning maincourse which requires students to have skills in practicing maincourse dishes. It requires a companion learning facility when it take place in the outside of the classroom by using effectively and efficiently learning methods such as presenting maincourse dishes with clearly explanation and steps which is does not need to use internet access or training courses to learn them. This "Maincourse Dish" animated video is created using the rigging bone and cell shading method with 2 Dimensional model, which has a duration of 03 minutes 47 seconds, with the mp4 extension, it is used 1280x720 video resolution, and a frame rate of 24 fps. In making the animation, it is used Moho Anime Studio software to create animations, then Adobe Illustrator, CorelDraw, and Photoshop, to make modeling, and Adobe After Effects for video editing. This animated video can be a learning media for the Maincourse subject for the student’s advantage in learning material, especially the practice of making poultry-based maincourse dishes.

1. Introduction

The education and learning media are closely related, it is because the learning process will not go properly without the right learning media [1]. The media is likely an intermediary from the deliver to the recipient of the message [2]. Media are all forms and channels that used by people to deliver messages or information. The use of appropriate media is able to convey the information and messages which is conveyed by the messenger and received clearly by the recipient of [3]. Likewise, when the media is used in the learning process in class, the information conveyed by the teacher as a messenger in class can be clearly absorbed by students as recipients in class. In industrial era 4.0 requires teacher to integrate technology in the learning process, one of them is making learning media by technology-based [4].

The media is one component of communication, as a messenger from the communicator to the communicant [5]. The main purpose of the media is to optimize communication learning process so that the indicators in learning process would be achieved (there is a change in behavior) [6]. The information and knowledge that will be delivered by an educator can be conveyed through the media, especially abstract concepts so that they need a media to concretize them [7,8].

Maincourse subject with the competence to make poultry-based dishes is one of the competencies that must be mastered by students, but in the laboratory there are still students who have not mastered these competencies. In practicing lectures, the students have difficulty in carrying out practical work in the laboratory. Besides, they made mistakes in making food products, even though it was previously explained during the learning process and obviously they have been given recipes and job sheets as a...
guide in the implementation of practice. The solution of these problems are the researchers design a learning media that can improve students' understanding and skills in practice implementation.

Using media has many advantages, it is practical, can easily clarify the subject matter, it is limitless, on the other words it can overcome the limitations of space, time, energy, sense power, make the learning process more interesting and interactive and allow students to learn independently [9-11]. Besides computer-based media can push the students to learn because of the availability of graphic animation, color, and music that can add to realism [12,13]. Through the media it is expected that it can reduce the limitations in optimizing the maincourse practice learning process. Learning media by animation video-based on the competence of making poultry-based dishes, conceptually the learning material will be visualized in the form of animated images and audio, so it is able to maximize learning maincourse especially in the making poultry-based dishes competence.

2. Method
This study aims to produce instructional media in the form of animated videos on maincourse subject learning. In the process of making video animation maincourse dishes made from poultry using the manufacturing method developed by Villamil-Molina which consists of four stages, namely development, preproduction, production, postproduction [14].

Figure 1. Flowchart of animated video.
Based on figure 1, at the development stage, adjusting the concept of multimedia products begins to be arranged and formed based on ideas that already exist. At this stage, the authors conducted 3 techniques in collecting data for making video animation maincourse dishes made from poultry by carrying out library studies, observations, interviews. In this second stage, there is making preparations for working on multimedia products. This stage is an important stage in the making of animated video maincourse dishes made from Poultry. The design includes making story lines, story scripts, and storyboards, making designs of characters and backgrounds used in each scene. In this stage, the dubbing process which is done before inserted in the making of animation using software Moho Anime Studio for each character in the story (figure 2). In this stage also determined the output of the animated video created, including format, resolution, framerate, and duration. In this third stage, the animation production process begins, the process of animating the characters (modeling) and the background that was previously made. At this stage also the dubbing process that has been done before, inserted in the animation process using Moho Anime Studio software. In this fourth stage, multimedia products that have been made enter the testing phase.

![Animation process with moho anime studio software.](image)

**Figure 2.** Animation process with moho anime studio software.

![Choose the wave to use.](image)

**Figure 3.** Choose the wave to use.

### 3. Result and discussion

There are several kinds of learning media classification; audio media, visual media, and audiovisual media [15]. These various media have their advantages and disadvantages. Making media in maincourse practice learning, the researchers developed audio-visual media, which is a type of media that contain sound elements and also elements of images that can be seen. This "Maincourse Dish" animated video was created using the rigging bone and cell shading method with a 2-Dimensional model, which has a
duration of 03 minutes 47 seconds, with a .mp4 extension specification, 1280x720 video resolution, and a 24 fps frame rate. In making the animation, using Moho Anime Studio software to create animations, then Adobe Illustrator, CorelDraw, and Photoshop, to make modeling, and Adobe After Effects for video editing. The media with this program explains the making of chicken cordon bleu through audio visual animation. The details of computer-based learning media for main course material have been made based on the learning objectives of making continental dishes made from poultry. Maincourse is one of the courses in Culinary Education Study Program at Indonesia University of Education that discusses the main dishes from a complete menu that is served at lunch or dinner, the portion is larger than the appetizer. This course carries out more practice in learning process, therefore researchers develop a learning media in animation form on one of the dishes which practiced by the students.

Figure 4. First slide of animation video.

Figure 4 shows the home page of the animated video that contains the learning objectives of making poultry-based dishes. Researchers took one of the competencies regarding the manufacture of continental dishes made from poultry, namely chicken cordon bleu. This competency is one of the competencies that must be mastered by students, before carrying out practice learning they are usually given a job sheet but sometimes students still don't understand the stages in practice implementation. Therefore, researchers develop animations so that students can be better in understanding and be able to achieve competence in carrying out practice learning. Learning media can clarify the presentation of messages so it can improve the process and the learning outcomes [16].

Figure 5. The page of chicken cordon bleu.
Figure 5 shows the product image of the main course dish that made of chicken cordon bleu. The animation which developed by researchers contain from the history of the dish itself, the ingredients used, the tools used, and the techniques and ways to make these dishes.

Figure 6 shows a slide on tools and materials of Chicken Cordon Bleu Making while Figure 7 shows the stages and processes of making chicken cordon blue. Animation video as a media that has been created can help students to understand learning material properly and can be done in outside of campus. Animated video media can be repeated if students do not understand the learning material, so that when practice is carried out, the students have mastered the competencies and minimize failures in practice learning. The practicality of the media is related to the compensatory function of the media. The media have a compensatory function if it can help students who are slow in accepting and understanding the content of the lessons presented [17]. This is in accordance with the advantages of animation video-based learning media that can play back the learning material if there are students who do not understand yet about the material. In addition, the use of media is more practical, it can be used repeatedly anywhere and anytime so the students can use it as needed.

4. Conclusion
The learning media has some function as students learning source to obtain the messages and information from lecturers so that learning material can be further improved and increase students’ knowledge. Implementation of practice requires students to have knowledge and skills, therefore video animation can be a stimulus in the implementation of the learning process, especially the implementation of practice activity. Learning by using the animation video media can improve students' skills and competencies, so it is expected that lecturers can combine this media with an interesting learning model and in accordance with student characteristics. It is expected that the next researchers can carry out further research for other material using video-animation media on another learning as well.
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