# The use of multimedia in teaching entrepreneurship for university students: The case of economic education students

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**Abstract.** This study described the design and use of multimedia in learning entrepreneurship course for economic education student in a private university in East Java, Indonesia. Geared by catfish cultivation activity theory, the design and use of multimedia in this study were investigated through observation and students' perceptions. Findings suggested that multimedia positively engaged learners in learning enactment. Future studies are encouraged to investigate this issue using the observational method.

## 1. Introduction

In recent times, scholars have witnessed a significant amount of technological improvement in educational sectors. It is evident from prevalent studies geared to explore how technology enhances learning enactment in secondary schools [1] and higher education [2]. Most of the studies also reported that student learning participant is much held while using technology such as smartphone and laptop in the class [3].

Anchored by the benefits of using technology in the class, this present study describes the design and use of multimedia in learning entrepreneurship for university students. It is widely acknowledged that vocational learning sectors both in schools and universities remain under-explored. Teachers are found unable to engage their students with real-task learning [4] since contextually-produced learning materials and media are not developed.

Authentic materials or real-life learning media that can be employed in the class are multimedia, a combination of several modals such as text, audio, image, animation, and video [5]. In the Indonesian context, the combination of these modals is rarely proposed as a student-teacher and in-class learning artifact. It occurs since teachers are much hindered by administration tasks imposed by the government [6].

Myriad studies have informed that multimedia learning can significantly enhance students' participants and understanding in the class [7, 8, 9]. For instance, [10] found that the use of multimedia in learning is effective for students' participation engagement. It is seen from students' engagement in the peer-group discussion.

Meanwhile, the Entrepreneurship course, which is implemented at vocational high school is one of the efforts made by the government in enhancing the development of the entrepreneurship program in Indonesia [11]. Teachers face many challenges in their implementation. Entrepreneurial activities and profits are influenced by the use of information and communication technology (ICT). Thus, educators nowadays are striving hard to make the entrepreneurship class joyful, one of which is done by implementing the use of multimedia [12]. However, in its application, there have been many factors

that influence the effectiveness of learning because the implementation of multimedia or hypermedia in the teaching and learning process still has some problems that need to be investigated further.

Given the scarce studies on multimedia learning in such an entrepreneurship class in Indonesia, this study attempts to explore the design and use of multimedia learning in one private university in East Java, Indonesia. This study seeks the exploration from students' perspectives and the design of the multimedia.

## 2. Method

The method used was a case study of qualitative design. The data was taken from questionnaires. This research is developing multimedia using catfish cultivation activity as a learning medium. Philips (1997) presents development steps called waterfall models. In this model, to achieve design perfection, then it can be improved before the construction of the project begins. The steps of this research are: (1) needs analysis and definition, (2) designing software and systems, (3) implementation and trial, and (4) system testing. The result of the questionnaires were analyzed descriptively. Waterfall model scheme can be seen in the following figure:
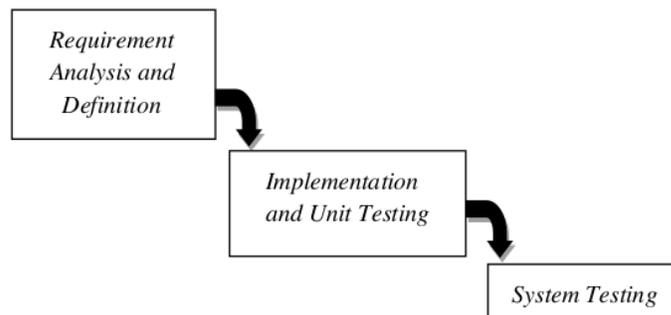


**Figure 1.** Steps for developing a multimedia waterfall model.

## 3. Results

The results of the data analysis phase from questioners were taken from fifteen lecturers engaging in multimedia, which is expected as an entrepreneurial learning media. It was found out that 90% of lecturers expect multimedia as an entrepreneurial learning media followed by 70% of those who expect to have multimedia forms to provide information on practical knowledge of the farming process and the process of making crafts, the contents of business process activities that suit the needs of the natural environment of the region, the duration of multimedia time is short, attractive (not boring), and various. Based on the results of the data analysis phase from questioners were taken from fifty students who were taken entrepreneurship course was presented on this table below

**Table 1.** Percentage of the students' questioners

| No | Statements | Agree | Disagree |
|----|-----------|-------|----------|
| 1. | Videos are useful in getting the idea of Entrepreneurship course | 90% | 10% |
| 2. | Lecturers must be better to use multimedia | 80% | 20% |
| 3. | Most students prefer theories in learning | 5% | 95% |
| 4. | Printed materials are better to be understood than videos | 10% | 90% |

Based on the result of students' questioners, it is showed that most of the students prefer learning by using multimedia than by using the traditional method. They understood more readily

by learning using video. The design preparation phase is based on the needs analysis of students and lecturers in the form of multimedia about the process of catfish cultivation. There is two Camtasia video implemented in this study. The duration is 15 minutes. The design form in the form of information on the catfish cultivation process and making batik process.

**Table 2.** The Design Form of Catfish Cultivation Process

| NO | Activity | Scenario description |
|---|---|---|
| 1. | Opening | a). Entrepreneurial learning media, |
| | | b). Media creator, |
| | | c). Subject, |
| | | d). Forms of activity |
| 2 | The explanation on catfish breeding | Text and audio display: |
| | | a). Catfish nursery media (text, audio, image) |
| | | b). Catfish breeding process (text, audio, image) |
| | | c). Appear three to five days old catfish movies (text, audio, video) |
| | | d). Catfish feed according to catfish level (text, audio) |
| | | e). Catfish films aged 45 days and 70 days (text, audio, video) |
| | | f). Get to know catfish disease (text, audio) |
| | | g). Prevent catfish (text, audio) |

The shooting was done at the meeting discussing the main catfish, catfish eggs, catfish seeds aged two to three days, catfish aged 40 days, 70 days old catfish, which are ready to be harvested. The next step is to compile multimedia using Microsoft PowerPoint or Microsoft Office PowerPoint, which is a computer program for presentations developed by Microsoft in their office application packages. In PowerPoint, like other software presentation processors, objectivity, graphics, video, sound, and other objects are positioned in several individual fields called "slides." The term slide in PowerPoint has the same analogy as a slide in an ordinary projector, which has been old-fashioned, which is then substituted by the emergence of computer software that is capable of processing presentations such as PowerPoint and Impress.

**Table 3.** The Design Form of Making Batik Process

| No | Activity | Scenario Description |
|---|---|---|
| 1 | Introduction (Text and Video) | Entrepreneurship learning media, media maker, main topic discussion, activities |
| 2 | Learning Process | The presenter explains and demonstrates the steps on how to make batik from making design, tracing designs that have been drawn on paper into cloth, sticking cloth, making color dough, coloring, boiling, drying, finishing (text and audio) |

The film tells the process of making batik crafts by interviewing the batik maker and batik practices from providing plain cloth, designing batik, sticking, coloring, cooking, drying, and finishing. The next step is to compile multimedia using Microsoft PowerPoint. The lecturer can use video to start the

class and introduce about batik. They can ask their students to have their background knowledge of what batik is and how to make batik. They can watch the video after the discussion in order to motivate the student to see the real process.  The steps are as follow:

- First, open the PowerPoint Application and make a design layout (Slide Sheet), with simple animation but still beautiful to enjoy.
- Create several slides according to the material about Catfish Cultivation, including Title, Introduction, Cultivation Tools and Materials, cultivation process, and how to reproduce it. Make sure each slide (sheet) is not too much writing and also make sure that each part of the slide is supported by the display of a photo or video. Pictures or videos will greatly facilitate us to clarify the material to be delivered.
- Give color gradients or other and do not use colors that are too flashy because it will interfere with the focus of learning activity in order to avoid boredom, give an interesting background but do not disturb in delivering the material.
- Add some supporting animations such as animations appear and the loss of text or images so that the videos do not seem monotonous. Select the Animations menu in the top panel and select it according to your wishes.
- The method is used by selecting the Transitions menu in the top panel, then you can choose several options that are already provided in PowerPoint.
- After finishing, we try to see the results by pressing the key on the keyboard (F5) or can press the button on the bottom right with the Slide Show or also by selecting Slide Show in the top panel.
- Make sure the results are perfect, and all the material about catfish cultivation has been conveyed all, because if there are errors during the video editing process, then we will repeat it from the beginning. *Camtasia* Studio is software created and published by *TechSmith*, to make video tutorials and presentations directly through *screencast*, or through plug-in recordings directly to Microsoft PowerPoint. *Camtasia* consists of two main components namely *Camtasia* Recorder - a separate tool for capturing audio and video layers and *Camtasia* editor - the component that is the name of all products, which is now a multimedia authoring tool with industry-standard "timeline" interfaces for managing multiple clips in the form of stacked tracks (Wikipedia.com).
- If you have installed the *Camtasia* Studio 9.1 application, then an Ads-ins Menu will appear in your PowerPoint. So if you have not installed the *Camtasia* Studio 9 application, then there will be no new Menu. The function of Ads-ins is to record the screen in our presentation later.
- We just click the record button and there will be a new clue that if we want to pause the video we just press the Ctrl + Shift + F9 key on the keyboard, and if we want to end the video we can press Ctrl + Shift + F9 or Esc in the keyboard. After pressing the record button, the screen will automatically record our PowerPoint screen.
- But we also have to control each slide so that there is no error, for example, the appearance time of a slide is not too long or too fast. Then we also have to adjust the slide change during the recording process.
- When finished we press Esc to save the recording. Later a new window (page) will automatically appear asking us whether we still want to edit the record or save it automatically. Because we still want to edit it again then we choose Edit your recording. Automatically our recordings will be prepared for the editing process in *Camtasia* Studio 9.
- In the *Camtasia* Studio 9 application, we have prepared the recording, we just move it into the track at the bottom. The track in the video editing application is where we put video, audio, text, etc. and also to adjust the video position at what time. All the editing processes we do on the Track start from giving back sound, add pictures or text, etc. As an example of combining images with sound, the main catfish image is in Track 1 and we want to have the sound when the main catfish image appears, then we place the audio sound in Track 2 just below the image

placed on Track 1. Then the results of the picture and sound will appear simultaneously according to our wishes.

- The next step is to add Audio material and also back sound. Audio material is an audio sound about the catfish cultivation process from beginning to end which is adjusted to the animated image. Back sound is added to accompany the video so that it doesn't seem monotonous in its delivery. The trick is by clicking on the (+) button in the media section and then selecting Import from media file. Then select the file that we want to edit.
- Arrange all components, from video, image, audio, and back sound in a Track.
- See the results of editing at the top right. Make sure the image can match the audio sound delivered.
- If the duration of the video is too long over the audio, you can edit it using the Split Button Function. The Split button functions to cut or insert a media. For example we want to cut the middle part of the video so we just cut the video into three parts and we can delete the video in the middle to reduce the duration of the video.
- Check the video in regular shows so there are no mistakes.
- If you are sure the video is perfect we just have to save the video by clicking the Share button under the Close button (top right). We will be given choices ranging from saving to our laptop, uploading to YouTube, saving to Google Drive, etc. To save the video to our laptop, we just select the top menu (Local File...) and select the resolution as desired, the higher the video quality, the better the video.
- The final step is to determine the location of the video storage. Editing results from the Catfish Cultivation Process can be viewed on YouTube with the following link: https://www.youtube.com/watch?v=M6rU7KdEuuI.Video of the process of making batik,the following link : https://youtu.be/Hdk6rKe4r1I

The following is the design of video which shows moving animation from a circle to the title "Entrepreneurship Learning Media for Higher Education" which appears from the left side:



**Figure 2.** Title

The video contains animation, text, and audio about Catfish Cultivation Containers and video of the process of making batik. First, the video shows the text animation section starting from top to bottom and then followed by the audio.



**Figure 3.** Text Animation

The video also shows the characteristics of catfish parents that are ready to be bred or mated and the process how male catfish and female catfish meet and the video on the process of making batik also contains animations and text





**Figure 4.** Process of how male catfish and female catfish meet and batik making process



**Figure 5.** Final scene

Thus the process of making multimedia contains information about the process of catfish cultivation includes information ranging from the meeting of the catfish parents, catfish eggs, catfish seeds, catfish food, catfish disease, up to the control process of catfish. Thus, the film process of making batik is following the provisions of multimedia. Multimedia contains text, audio, images, animation, videos.

## 4. Discussion

In this study, the design and use of multimedia can significantly enhance students' participation and understanding of the materials taught in the class. Multimedia learning utilizes computer flexibility to solve learning problems. Similar to other teaching systems, computers can be used as a primary teaching tool to reinforce early learning, stimulate and motivate learning, or provide for various other types of possibilities. Many benefits are obtained from the flexibility of this computer because it can include video, audio, graphic elements, forms, processes, roles, and other responsibilities [13]. Multimedia and interactive multimedia/ hypermedia have been developed

for self-regulated learning or media in face to face learning (computer-assisted learning). Multimedia and hypermedia have high and dominant prospects used for learning and training [14].

Unfortunately, many multimedia created and delivered through e-learning or on-line learning have not consistently observed the quality aspects, as there have been many studies observed the use of multimedia concerning human cognition processes [15]. This current research regarding catfish cultivation process and video of the process of making batik tries to fill the gap of the previous studies which serves as one solution to provide complete information, in accordance to multimedia quality aspects including text, audio, images, animation, video and is the result of research. In general, multimedia learning can motivate students and create active learning [16]. Based on the results of lecturers and students, it can be concluded that video Camtasia have many strengths in teaching entrepreneurship course. Moat lecturers and students consider that using multimedia supports the process of teaching and learning [17].

## 5. Conclusion

This study seeks to explore the design and use of multimedia learning in an entrepreneurial class. Findings suggested that students were positively engaged with learning using media, and the design of the media could lead students to sustained learning motivation. The multimedia used in the classroom can enhance students' understanding of the materials since it is a real-life task, and students were invited to practice their insights directly.

## Acknowledgment

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