The Development of Digital Flipbook Media Based on the 5 Hours Battle of Kalianda upon High School History Materials

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Abstract

The purpose of this study is to develop a digital flipbook learning media by integrating the local history material of 'The 5 Hours Battle of Kalianda' in one of the high schools in Kalianda City. This study uses research and development (R&D) as the research methods. The stages of the research include: the stages of analysis, design, development, implementation, and evaluation. The subjects in this study consisted of two material and two media experts as validator, 40 eleventh-graders students, and a history teacher. The results of the study showed that the Flipbook digital media based on 'The 5 Hours Battle of Kalianda' had proven to be valid and feasible according to the material and media expert assessments, while the results of small group trials, limited group trials, and extensive trials indicated digital Flipbook learning media based on 'The 5 Hours Battle of Kalianda' was proven to be effective and suited with the needs analysis.

I. Introduction

History learning is an important and appealing subject. It has function and purpose as means to build student characters (Sirnayatin, 2017; Jumardi, 2015). Learning history must have wisdom values that are useful for embracing intelligence, shaping the attitudes, characters and personalities of students. This complies with 'The Minister of National Education Regulation Num. 22 Year 2006' regarding content standards. In that so, the conventional history learning, which only prioritizes memorization, needs to be changed into learning that gives students an understanding of the past and present, and their interactions with the future.

Education, as one indicator of nation development, must be able to adjust to the conditions referred to as the industrial revolution era of 4.0. The nowadays development of technology and the aeon progression becomes a challenge for the history subject within schools. The modernization principle in learning needs to be possessed by teachers in order to create meaningful learning for students (Mulyasa, 2007: 51). The teacher as one of the components in learning needs to utilize various kinds of learning resources – not just using books as the main source of learning. In this case, the history teacher is required to be more creative and innovative in utilizing and developing an effective learning media. One of the media expected to be able to create effective historical learning is the one based on digital technology.

Good and effective learning can be created by presenting meaningful learning. It suited with the Ausubel's learning theory which associates information, experiences, and new facts upon the cognitive aspects already owned by students. Information or experience possessed by previous students becomes an important element in the learning process. The combination of new information and experiences of students is significant in the learning process (Trianto, 2007: 25). One of the local historical events that can be used as a source of learning for high school students in Kalianda is the history of 'The 5 Hours Battle of Kalianda'. Local history has an important correlation upon national history (Notosusanto, 1984: 10). Local history is such a substantial component that useful in constructing national history, although not all local history can enter into national history – its existence within the community is needed. Local history is a historical event that has its own distinctive value between one and the other, thus, different environmental factors of society might influence it.

The 5 Hours Battle of Kalianda' is a historical event which narrates the epic struggle of Kaliandan (the native people/residents of Kalianda region, South Lampung, Lampung Province, Indonesia) in defending Indonesian independence from the Second Dutch Military Aggression. The events, which showed the spirit of patriotism and nationalism carried out by Kaliandans in maintaining the territorial integrity of the Republic of Indonesia, are not yet widely known, especially among educated students. Thus, clear information of the issue is needed, so that the patriotism and nationalism values of 'The 5 Hours Battle of Kalianda' can be fostered within student historical awareness, and are able to increase student creativity in exploring various local wisdoms of their own region. The delivery of historical learning by utilizing the latest digital media is expected to be able in creating an interesting learning.

The use of instructional media has a function as a tool to convey information in learning that can affect an effective condition and learning environment (Suryani and Agung, 2012). A good learning media is the one which can adapt various student learning styles in order to achieve the learning goals – one of them is digital flipbook. It is an electronic learning media in which text, audio and visuals are included. Flipbook is one of the classic animations made by a piece of paper, mostly found in the form of 'thick' book, and each paper aims to describe something – its appearance is designed in some specific ways so that the within objects may move or pop-up when opened (Nafiah et al., 82: 2018).

In the case of digital flipbook, it has several features in combining text with .PDF, images, and videos in the form of .FLV, .SWF, music, or narration. The development of digital flipbook is expected to be able to create learning conditions which comply on the theory of constructivism: the occurrence of two-way interactions in learning. In addition, students can become more deeply immersed to the discussion of historical events through a combination of text, images, audio, and video contained in a digital flipbook.

This suits with Daryanto (2015) belief that the students are majorly acquiring the material by using the sense of sight as high as 82%. The use of digital flipbook media based on 'The 5 Hours Battle of Kalianda', as one of the local histories, can provide meaningful learning and be an alternative for interactive history teaching in order to embrace the students' understanding upon the values contained in history learning.

II. Research Method

The method used in this study is the research and development. Research and development (R&D) is a process used to develop and validate products (Borg and Gall, 1983: 772). The focus of research the method is how to develop a product and its effectiveness. The development research model used in this study is the ADDIE development model. The stages

of development using the ADDIE model are as follows. (1) the needs analysis stage, an analyzing phase to determine the needs of certain appropriate media as the research object; (2) the design stage of the media model, designing learning media (in this case, digital flipbook); (3) the development stage, the preparation phase of materials used in teaching (4) the implementation stage, and (5) evaluation stage.

This research was conducted at one of the high schools in Kalianda, Lampung Province. This research was conducted upon eleventh-grader school students on history subjects. The results of the data obtained in this study consisted of qualitative and quantitative data. The qualitative data were obtained at the stage of media development needs analysis and at the stage of designing media design, which included interviews with teachers and distributing students' needs questionnaires. While quantitative data were obtained at the stage of media development, media implementation, and also at the stage of media evaluation, which included validation of material experts, validation of media experts, limited trials, as well as conducting extensive trials on students.

This study uses descriptive statistical data analysis techniques. This analysis is used to process data obtained from the instrument in the form of a questionnaire average score, using the following formula:

$$\bar{X} = \frac{\Sigma x}{N}$$

Note: $\bar{X}$ = Mean (average score)
Σx = The sum of all items
N = Total number

The quantitative data obtained will be interpreted in order to provide meaning in decision making, using the following conversion criteria assessment guideline guidelines.

**Table 1.** Conversion Assessment Criteria Guidelines

Interval	Score	Criteria
X ≥ 4,21	5	Very Good
3,40 < X ≤ 4,21	4	Good
2,60 < X ≤ 3,40	3	Enough
1,79 < X ≤ 2,60	2	Less
X ≤ 1,79	1	Very Less

Source: (Sudijono, 2005: 132)

The implementation stage is adapted the ADDIE model research activities which can be seen through the stages shown in the figure below:

Figure 1. Development Phase of the ADDIE Model
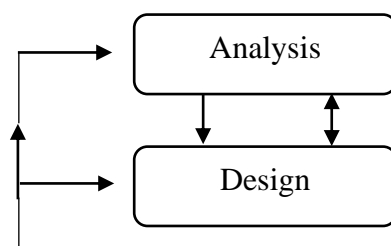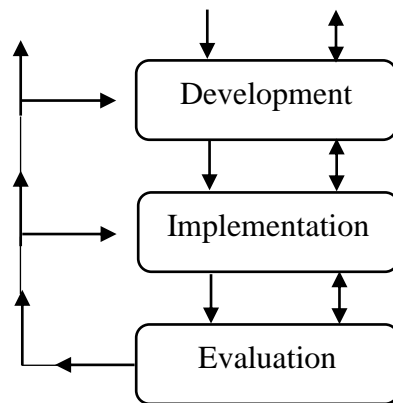
III. Results and Discussion

The stages of research using the ADDIE model will be explained as follows.

2.1 Need Analysis

The results of the needs analysis phase are gathered by interviewing teachers and distributing questionnaires of the historical learning analytical needs to students. At this stage, there are some obtained information about the learning process, student characteristics, learning objectives, and learning media often used by teachers, as well as other information that supports digital flipbook learning media construction. Based on observations, it was found the following information.

a. The history learning process applied so far has not been maximized because it still prioritizes cognitive aspects in the form of memorization. It is not complying with 'The 2013 (revised 2017) Curriculum', which believed the history learning aims to shape the attitudes and character of students.

b. Students' understanding upon defending Indonesian independence material is still lacking. Historical events of defending Indonesia's independence are only taught at the level of national history. Meanwhile, there are some local histories which happened in Kalianda, especially in the matter of defending Indonesia's independence. One of them is the history of 'The 5 Hours Battle of Kalianda' – the history of the Kaliandan resistance against the Second Dutch Military Aggression.

c. Student activities tend to be passive – it shows lack of student motivation and participation in history learning. Students have had some difficulties in imagining historical events given by the teacher. This was due to the teacher only using conventional media in delivering material in class. The development of digital-based media used by teachers is also not optimal, still, because teachers have had limitations in developing digital-based media.

d. Availability of supporting school facilities, such as computers, sound systems, projectors, etc. Thus, it allows the history learning process by using a digital flipbook based on 'The 5 Hours Battle of Kalianda'.

Based on the information obtained above, it is necessary to develop a digital flipbook learning media based on 'The 5 Hours Battle of Kalianda' to improve the history learning process within the classroom. In the next stage, the collection of resources to be used as references consist of curriculum, syllabus, basic competencies, materials, and other

references which support the development of digital flipbook learning media. Through this identification process, there are some obtained materials which will be loaded into the learning media and arranged systematically to be presented on 'The 5 Hours Battle of Kalianda' digital flipbook learning media.

2.2 Design Planning Stage

At this stage, a digital flipbook learning media design will be developed. This design serves as a guideline in the development of digital flipbook storyboards. The following will explain the descriptive design of 'The 5 Hours Battle of Kalianda' digital flipbook development.

Figure 2. Chart of Digital Flipbook Display
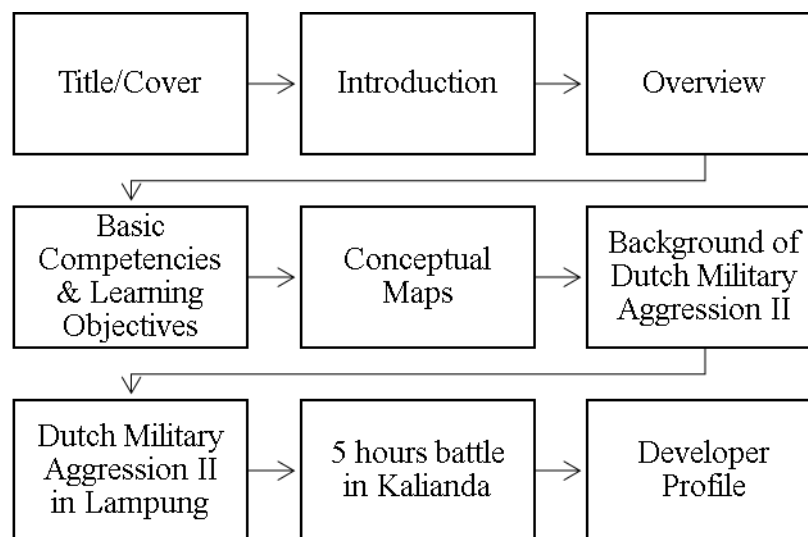
The picture above shows the developed digital flipbook product does not come out of basic competencies and the learning objectives. The display of the 'The 5 Hours Battle of Kalianda' digital flipbook creation will be useful in creating storyboards in the selective material, images and videos at the product development stage.

2.3 Developmental Stage

At this stage a digital flipbook production is carried out using flip PDF Professional software that combines material, images, music, and video that will be incorporated into a single unit. Then, the video production uses different supporting software, namely Filmora software and Google Earth Pro software. In addition, the layout design of the digital flipbook uses Corel Draw software. Video production is adapted to 'The 5 Hours Battle of Kalianda', which includes narration, music, and historical video documentation. The developing stage of 'The 5 Hours Battle of Kalianda' based digital flipbook is devoted to the use of laptops and computers only. The digital flipbook products development is specifically designed for the easy usage. In the next stage, the digital flipbook will be tested by an expert to determine its suitability in use.

2.4 Implementation Stage

At this stage, a trial phase of the product feasibility will be trialed by experts. The purpose of expert validation is to determine the eligibility of developed digital flipbook product criteria. Expert validation consists of material and media expert validations. Each

validation expert consists of two validators who have competencies according to their fields. The following will present the results of the assessment of material media experts on the development of digital flipbook learning media.

Table 2. Results of the Material Expert Assessment of 'The 5 Hours Battle of Kalianda' Based Digital Flipbook

Num.	Aspects	Average Score	Category
1	Format	4.5	Very Good
2	Language	4.5	Very Good
3	Illustration	4.75	Very Good
4	Content	4.4	Very Good
Total		4.5	Very Good

Based on the above table, it is known that the results of the material expert validation on the 'format' has average score of 4.5 (very good), the 'language' obtained average score of 4.5 (very good), the 'administration' aspect got 4.75 (very good) for the average score, and the 'content' has score of 4.4 (very good). So, the total average score of all assessment aspects is 4.5 – laid in the excellent category. This shows that within overall, 'The 5 Hours Battle of Kalianda' was very good and worthy of being tested to the next stage.

Table 3. Results of the Media Expert Assessment of 'The 5 Hour Battle of Kalianda' Based Digital Flipbook

Num	Aspects	Average Score	Category
1	Material	4.6	Very Good
2	Illustration	5	Very Good
3	Media Featuring	4.25	Very Good
4	Media Allurement	4.75	Very Good
Total		4.65	Very Good

Based on the table of media validation experts above, it can be seen that the 'material assessment' obtained average score of 4.6 (very good), the 'illustration' obtained score of 5 (very good), the 'media display' got average score of 4.25 (very good), and the 'attractiveness' of the media has average score of 4.75 (very good). The total average score of all assessment aspects is 4.65 – an excellent category. This shows that within overall, 'The 5 Hour Battle of Kalianda' was very good and worthy of being tested to the next stage.

In the next stage, an evaluation phase will be carried out – consisting of small group limited trials, large group limited trials, and extensive trials. The product trials were conducted at a high school in Kalianda City.

2.5 Evaluation Stage

At this stage, a learning media product trial would be conducted on students. The purpose of the product trials is to assess the quality of the developed media. The trial of this product consists of three stages, namely from a small group limited trial, a large group limited trial, and extensive trial. The following will be displayed regarding the results of product trials conducted at the evaluation stage:

Small group limited trials were given to 5 homogeneous eleventh-grader students. The results of the trial evaluation can be seen in the following table.

Table 4. Data from Small Group Limited Trial Results

Num	Aspects	Average Score	Category
1	Product Appearance	4.3	Very Good
2	Product Utilization	4.4	Very Good
3	Audio and Visual (AV) Quality	4.5	Very Good
	Total	4.4	Very Good

Based on the table above it can be seen that the students' responses to aspects of 'product appearance' obtained an average score of 4.3 (very good), aspects of 'product utilization' obtained an average score of 4.4 (very good), and aspects of 'audio and visual quality' obtained an average score of 4.5 (very good). The total number of aspects of the assessment obtained a score of 4.4 which is included in the excellent category. This shows that 'The 5 Hours Battle of Kalianda' based digital flipbook constructed on the assessment of students' responses in the small group limited trial is included in the excellent category. As for the criticisms and suggestions given by students on digital flipbook learning media, it is necessary to improve the font quality in order to be easily read and understood.

In the next stage, a limited group trial was conducted. Large group limited trials were involving 10 eleventh grader students outside of small group limited trial students. The results of the large group limited trial evaluation can be seen in the following table.

Table 5. Data from the Large Group Limited Trial Results

Num	Aspects	Average Score	Category
1	Product appearance	4.5	Very Good
2	Product Utilization	4.5	Very Good
3	Audio and Visual (AV) Quality	4.6	Very Good
	Total	4.5	Very Good

Appearance' obtained an average score of 4.5 (very good), aspects of 'product utilization' obtained an average score of 4.5 (very good), and aspects of 'audio and visual quality' obtained an average score of 4.6 (very good). The total number of aspects of the assessment obtained a score of 4.5 which is included in the excellent category. This shows that 'The 5 Hours Battle of Kalianda' based digital flipbook constructed on the assessment of students' responses in the large group limited trial is included in the excellent category. As for the criticisms and suggestions given by students on digital flipbook learning media, it is necessary to improve the developer profile so that media is getting better and perfect.

In the next stage, after some improvements to media products, extensive trials were carried out. Extensive trials were given to 25 eleventh-grader students outside of small large group limited trials students. The results of the extensive trial evaluation can be seen in the following table.

Table 6. Data on Broad Trial Results

Num	Aspects	Average Score	Category
1	Product appearance	4.5	Very Good
2	Product Utilization	4.7	Very Good
3	Audio and Visual (AV) Quality	4.6	Very Good
	Total	4.6	Very Good

Based on the table above it can be seen that the students' responses to aspects of 'product appearance' obtained an average score of 4.5 (very good), aspects of 'product utilization' obtained an average score of 4.7 (very good), and aspects of 'audio and visual quality' obtained an average score of 4.6 (very good). The total number of aspects of the assessment obtained a score of 4.6 which is included in the excellent category. This shows that 'The 5 Hours Battle of Kalianda' based digital flipbook constructed on the assessment of students' responses in the extensive trials trial is included in the excellent category.

2.6 'The 5 Hours Battle of Kalianda' Digital Flipbook Learning Media

The results of this study showed that 'The 5 Hours Battle of Kalianda' based digital flipbook learning media is very good and feasible to be used as a support in the eleventh-grader history subjects. This is because the media has been systematically arranged and designed according to the stages of the development research procedure. In addition, digital flipbook learning media is able to boost students' imagination of the historical material being taught.

Digital flipbook is a learning media that can bring audio and visual together. It can make students to be more interested in learning history. This is because the combination of visual and audio senses within learning can let students to understand more about the material (Arsyad, 2014). A very high difference is obtained amongst the visual and others senses with comparison: visual sensing percentage of 75%, hearing senses 13%, and other senses 12%.

Aside from the needs of utilizing the digital learning media, the discussion of local history in history learning is also very important. Students' comprehensions upon the history of their own region are very minimum, thus, the integration of local history with national history learning is needed. The integration of local history contained in digital flipbook learning media makes local history easily recognizable, accessible, and supports students'

comprehensions of national history material. The local history referred to in this case is the local history of 'The 5 Hours Battle of Kalianda'.

Various development studies on digital flipbooks have been developed previously, such as the development of digital flipbook learning media to support the learning process in the industrial revolution era 4.0 (Amanullah, 2020), the development of electronic modules for student learning motivation using *kvisoft flipbook* based on ethno constructivism (Anandari et al., 2019), the development of a megalithic heritage-based flipbook media as a learning resource to improve student achievement (Amalia, Ayuningtyas, & Adzkiyak, 2020).

Based on the various results of the previous of studies, the development of digital flipbook learning media that contains the local history of 'The 5 Hours Battle of Kalianda' can attract students' interest in the history learning process. This study can be used as a guideline for history teachers, especially in high schools, to develop history subject innovative digital learning media that integrating local history. One of the innovative media is 'The 5 Hours Battle of Kalianda' based digital flipbook learning media.

IV. Conclusion

Based on the results and discussion of the study, it can be concluded that the validation of material and media experts for developing 'The 5 Hours Battle of Kalianda' based digital flipbook learning media was valid with excellent categories. The results of small group limited trials, large group limited trials, as well as broad group tests showed that 'The 5 Hours Battle of Kalianda' based digital flipbook learning media were included in the excellent category. It also complied with the needs of teachers and students in achieving the learning objectives of historical subject in Senior High School.

The use of 'The 5 Hours Battle of Kalianda' based digital flipbook learning media in the history learning process requires supporting facilities such as computers and sound systems. This facility is recommended to be prepared in advance before the start of the history learning process in class. In addition, the development of 'The 5 Hours Battle of Kalianda' based digital flipbook learning media needs to be done more broadly in the future by using various research variables in order to prove the effectiveness of digital flipbook media on student learning outcomes improvement.

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