



DEVELOPMENT OF INTERACTIVE MULTIMEDIA ON THE PROCESS OF HINDU-BUDDHIST RELIGION AND CULTURE IN INDONESIA AT SMA NEGERI 1 LUBUK KELIAT

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Abstract

This research aims to develop Interactive Multimedia on the Basic Competencies of the Theory of the Process of Development of Hindu-Buddhist Religion and Culture in Indonesia for grade X students at SMA Negeri 1 Lubuk Keliat. The results of the study show that the interactive multimedia products developed have good validity, practicality, and effectiveness. The results of expert validation (alpha test) showed an average assessment of 3.68, which is included in the valid category. The practicality test (beta test) resulted in an average assessment of 4.29, which is included in the very practical category. From the effectiveness test, the N-gain score of 0.64 shows effectiveness in the medium category, with an increase in student learning outcomes. With these results, this interactive multimedia is declared suitable for use as a learning medium in history subjects. It is recommended to integrate this multimedia into learning to increase students' motivation and understanding of the material.

Keywords: Interactive Multimedia, Hindu-Buddhism, History

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I. Introduction

Indonesia, as a developing nation, faces the necessity to improve all of its systems, particularly in the field of education. In order to address the challenges of modern times, it is essential for Indonesia to continually enhance the teaching and learning processes, taking into account the disparities in geographic locations and local conditions. Furthermore, the competence of educators plays a critical role in shaping the effectiveness of these educational efforts (Educate et al., 2024).

History education in high school (SMA) faces various challenges, including a decrease in students' interest in learning due to monotonous learning approaches, such as using textbooks or slide-based presentations with minimal interactivity. This approach often makes students less active and bored quickly, leading to low learning outcomes (Prakasa, 2023; Mulya, 2023). (Rivasintha Marjito and Hidayat 2024)

The development of interactive multimedia-based learning media has proven to be effective in increasing student motivation and learning outcomes. This media is able to present a more interesting learning experience through a combination of text, audio, visual, and animation elements. Another advantage of interactive multimedia is its flexibility, allowing students to learn independently anywhere and anytime (Antoro, 2023; Izzatillah, 2023).

In the context of learning history, especially the development of Hindu-Buddhist religion and culture in Indonesia, the use of interactive multimedia is relevant. This material not only requires an understanding of historical facts, but also the active involvement of students to understand the development of this culture in the context of today's times (Mulya, 2023). (Syahroni, Nurhasanah, and Putra 2023)

In a preliminary study conducted at SMA Negeri 1 Lubuk Keliat, the needs analysis showed a lack of actual teaching materials in the subject of History Education. An interview with a history teacher, Mrs. Lia Niswati, S.Pd, revealed that the absence of adequate teaching materials makes it difficult for students to get the latest information in history learning. In addition, the character analysis of students in classes X Science and X Social Sciences showed that the majority of students were more motivated and interested when using technology such as the internet in history learning. Based on interviews with 27 students, 25 of them expressed a preference for learning to use technology for memorized subjects such as history. Environmental analysis identifies the support of facilities such as computers, projectors, and adequate internet access in schools.

Alessi and Trollip's (2001) development model is the ideal approach in designing this interactive multimedia because it emphasizes three main stages: planning, design, and development. This stage allows the development of valid, practical, and effective multimedia in improving student learning outcomes (Suryani et al., 2020; Fitriyani et al., 2022). Well-designed interactive multimedia can support competency-based learning and encourage deeper student engagement (Daryanto, 2017).

II. Research Methods

The research was conducted at SMA Negeri 1 Lubuk Keliat in the even semester of the 2017/2018 school year. Class X was chosen as a subject because the relevant material was in accordance with the 2013 curriculum. The location was chosen because this school has implemented the curriculum. The approach used is Research and Development (R&D). The main goal is to develop interactive multimedia that is valid, practical, and effective as a history learning medium. Validation is carried out through alpha test (by material and media experts) and beta test (involving students and teachers).

This research refers to the development model of Alessi and Trollip. The use of a development model, because this model is indeed devoted to developing learning multimedia. The complete process of multimedia development according to Alessi and Trollip is as seen in Figure 1.

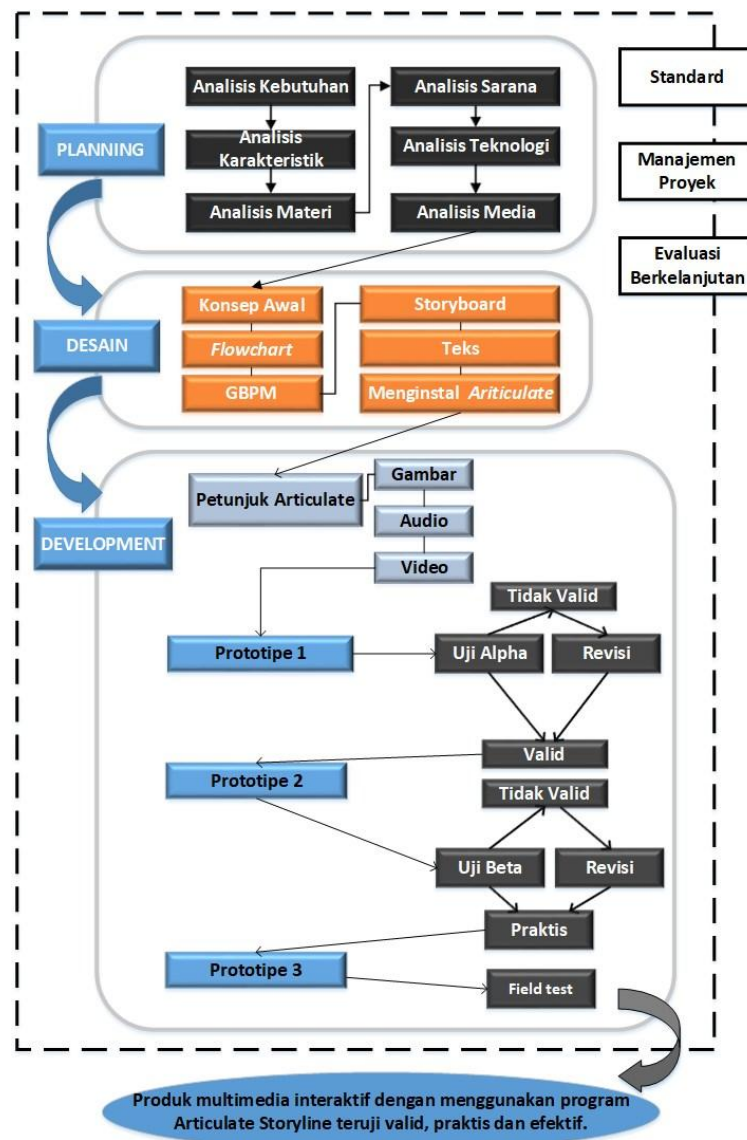


Figure 1. Alessi and Trollip Modify Aliro Diagram Development Research

Data is collected through:

1. Guide: Validate the expert using the evaluation sheet.
2. Interviews: Conducted with teachers and students to identify the needs and practicality of the product.
3. Questionnaire: Used to measure the practicality of multimedia based on student responses.
4. Test: Measure the effectiveness of the product through pretest and posttest, analyzed using N-gain scores.

The results of validation, interviews, questionnaires, and tests are analyzed quantitatively and descriptively. The multimedia eligibility criteria are based on the Likert scale and the N-gain validity, practicality, and effectiveness categories. This research produces interactive multimedia that can improve student motivation and learning outcomes by providing a more engaging learning experience through visual, audio, and animation elements.

III. Results and Discussion

Research on the development of the Interactive Multimedia Basic Competency Theory The Development Process of Hindu Buddhist Religion and Culture in Indonesia grade XI in high school has gone through all stages of procedures through the development of the Interactive Multimedia Basic Competency Theory The Development Process of Hindu Buddhist Religion and Culture in Indonesia is expected to be able to provide knowledge to students, this Interactive Multimedia is also expected to be able to maximize the learning process so that it can improve student activities and learning outcomes. The research that has been carried out is a type of research development that aims to produce learning products that are valid, have practical value and have an effective impact on student learning outcomes. Development of Interactive Multimedia Basic Competency Theory The process of the development of Hindu and Buddhist religion and culture in Indonesia uses the Alles and Trollip model through stages, 1) planning: 2) design, and 3) development.

At the planning stage, the researcher conducts Needs Analysis, Characteristic Analysis, Material Analysis, Facility Analysis, Technology Analysis, and Media Analysis. After that, it enters the design stage, namely creating a *flowchart*, GBPM, and *Storyboard*. The last stage carried out by the researcher is the development stage, where at this stage of development to measure valid, practical, and effective student learning outcomes.

At the development stage, the tester conducted an Alpha test on 3 experts, namely design, media and content. The learning design expert was carried out on one learning design expert who obtained a score of 4.08 in the Very Valid category. Media experts were conducted by media experts with a score of 3.44 in the Valid category. Materials experts were conducted on 2 material experts with an average result of 3.53 with the Valid category. Based on the assessment of each validator above, it can be concluded

that Basic Competency Theory of Interactive Multimedia in the Development Process of Hindu Buddhist Religion and Culture in Indonesia developed by a valid researcher and can be used in the next research stage.

After going through the alpha trial and validly tested, the next stage of development is a beta trial to see the level of practicality towards the development of the Interactive Multimedia Basic Competency Theory of the Development Process of Hindu and Buddhist Religion and Culture in Indonesia. *Prototype 1* generated from *the alpha test stage* will be tested for practicality in *the beta test*. The results of *the beta test* were *not* only obtained from students regarding the development of Interactive Multimedia Basic Competencies in the Theory of the Process of the Development of Hindu Buddhist Religion and Culture in Indonesia, but also obtained quantitative assessment results in the form of average student assessment results. At the beta test stage with 6 (six) students/respondents.

Respondents were asked to fill out an instrument in the form of a response questionnaire to see the practicality of the product to be developed, from here the results were obtained in the form of qualitative data, namely comments/suggestions from respondents as users to improve prototype 2 and quantitative data, namely the average of the results of the respondents' assessment to find out the practicality of the interactive multimedia developed. In quantitative assessment, there are 9 indicators that respondents assessed in the questionnaire as shown in Figure 2 below.

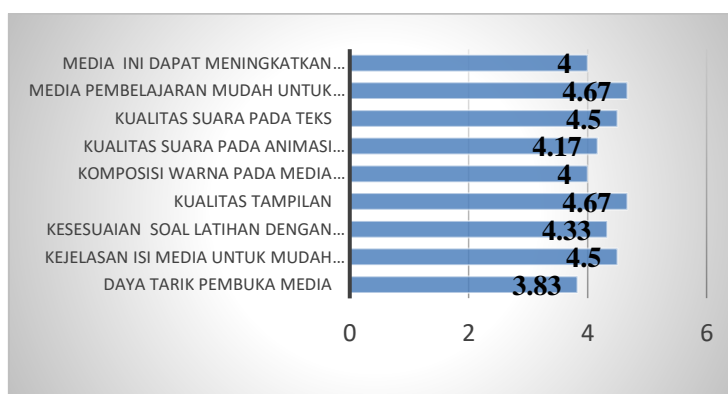


Figure 2 Results of Quantitative Data Average Indicators of Respondent Questionnaire Sheets in Beta Test

From the figure above, it is known that the average assessment of the practicality of each indicator is classified as very good or obtained an average score of > 4.0. Based on the results of the analysis, there is a qualitative assessment, namely several suggestions from respondents for product improvement that have been revised by the researcher as follows: (1) the appearance of this learning media from the material is easy to understand and understand, makes the reader interesting, which is supported by image animation and coupled with the existence of learning videos, (2) motivated in learning, because the learning media is easier to understand and the material is more concise. The disadvantage is that it can only be accessed on a computer, (3)

learning media can provide insight to students to find out how creative the creators of this Interactive Multimedia are, (4) Learning like this can advance the goals of the learning level, in current students, where the level of learning ability, (5) Its use is very interesting because it can spur people who are lazy to open books, with the ease of technology making us enthusiastic about learning, because in addition to the learning video, and (6) The appeal of this learning opener is very good and no one gets stuck in opening the video and also this computer is very good to use if anyone needs it.

The quantitative data obtained from the average assessment of 6 respondents were 4.44; 4.22; 4.22; 4.44; 4.22; and 4.22 with the category of 6 respondents stating that interactive multimedia products are very practical. Then it was found that the average assessment result of all respondents (X) was 4.30, where if the value of $X > 4.20$ or $4.30 > 4.20$, it can be concluded that the Interactive Multimedia product Basic Competency of the Theory of the Process of Development of Hindu and Buddhist Religion and Culture in Indonesia is stated to be very practical and tested for practicality. Then the results of this beta test product are then called prototype 3 and to see its effectiveness, the product is again tested for the validity of the program at the research site.

The Basic Competency Theory of Interactive Multimedia The Development Process of Hindu Buddhism and Culture in Indonesia was held at SMA Negeri 1 Lubuk Keliat. The data collection technique used is a test, the researcher gives questions to students in the form of multiple-choice questions that aim to find out the effectiveness of interactive multimedia that has been developed, by providing a pretest first before starting learning and a posttest obtained after learning is completed to see and measure the values obtained. At this stage of testing, the learning process is actually carried out in the classroom, with the same students and still using educators in the same class, while the researcher plays the role of an observer. The learning process referred to by the researcher in this study is a learning process designed by the researcher in accordance with the learning plan and using learning media that has been developed by the researcher.

This is done to determine the value obtained before and after learning by using the Basic Interactive Multimedia Competency Theory of the Development Process of Hindu Buddhism and Culture in Indonesia or used to measure the effectiveness before and after using the Interactive Multimedia Basic Competency Theory of the Development Process of Hindu Buddhist Religion and Culture in Indonesia. The average pretest result obtained by students is 50 with a medium score category.

In learning activities, teachers provide perception and motivation to students. In this case, the learning activity uses the Interactive Multimedia Basic Competency Theory of the Development Process of Hindu Buddhism and Culture in Indonesia. And do a little discussion about the material on the Development of Hinduism and Buddhism. After explaining a little about the Development of Hinduism and Buddhism, the teacher showed the Basic Competency Theory of Interactive Multimedia of the Development Process of Buddhism and Hindu Culture in Indonesia. Students observe

how to use Interactive Multimedia, then students directly use the Basic Competency Theory of Interactive Multimedia in the Development Process of Hindu-Buddhist Religion and Culture in Indonesia.

At the end of the activity, teachers and students together conclude the subject matter. Next, students work on *posttest questions*. This *posttest* aims to test students' mastery of teaching materials after learning using electronic-based information and communication technology teaching materials. The average *posttest* result was 81.54 with the highest score of 100. Based on the data, the results of *the pretest* and *posttest* showed an increase of 31.54 and an *N-gain* score of 0.64, which means that the effectiveness of the Interactive Multimedia Basic Competency Theory for the Development Process of Hindu and Buddhist Religion and Culture in Indonesia has been well developed. This is based on the *N-gain score classification table* which states that the acquisition of a score of $0.7 > Ngain \geq 0.3$ is categorized as moderate. This means that the effect of the use of the Interactive Multimedia Basic Competency Theory of the Development Process of Hindu and Buddhist Religion and Culture in Indonesia on the improvement of moderate learning outcomes.

The *pretest and posttest scores and n-Gain* were taken from all students in grade X of SMA Negeri 1 Lubuk Keliat with different categories, including the categories of high, medium, and low ability students. The *n-Gain score* in the High category was 11 people out of 26 students with a percentage of 42%. The *n-Gain score* in the medium category was 12 people out of 26 students with a percentage of 46%. Meanwhile, the *n-Gain score* in the low category was 3 people out of 26 students with a percentage of 12%. Judging from the percentage obtained, it means that the use of the Interactive Multimedia Basic Competency Theory in the Development Process of Hindu and Buddhist Religion and Culture in Indonesia is very good, its influence on the increase in the grades of moderately capable students.

The factor that affects the high *posttest score* compared to *the pretest* is that students are more enthusiastic about using the Interactive Multimedia Basic Competency Theory of the Development Process of Hindu-Buddhist Religion and Culture in Indonesia because for them the existence of this media can help increase their motivation to learn.

This is in line with what was conveyed by Miarso (2007) that as part of the learning system, media has practical value in the form of abilities or skills, arouses motivation to learn, gives the impression of individual attention to all members of the study group, presents learning messages or information in unison, overcomes space and time limitations and controls the direction and speed of student learning.

The researchers found that the use of interactive multimedia that has been developed in history learning can have a significant impact on improving learning outcomes. This is also supported by the research of Swandewi Anggarayani, (2014) who explained that Interactive Multimedia in history subjects can be used by teachers as an alternative media that can optimize the student learning process. Teachers can

make comparisons by using bridges between the past and the present by mastering historical theories and concepts as well as other social sciences with an interdisciplinary approach. In addition, strengthened by the results of the research Efi Trianingrum (2017) explained that the results of the study showed the feasibility of interactive multimedia in the media aspect 4.00, the material aspect 3.23, and the language aspect 4.11. In the limited trial, the results of the student questionnaire showed a feasibility of 4.34 and a teacher questionnaire of 4.70. Meanwhile, the results of the student questionnaire in the wide trial showed a feasibility of 4.44. Based on the results of a series of feasibility test processes, the interactive multimedia developed is suitable for use in social studies learning. In this case, Warsita (2008) has revealed that the advantages of using computer-assisted media in the learning process can improve learning outcomes.

The advantages of the Interactive Multimedia Basic Competency Theory The process of the development of Hindu and Buddhist religion and culture in Indonesia which was developed include the following:

- 1) Interactive multimedia can be used in individual or group learning.
- 2) Increasing student learning motivation
- 3) Facilitates the learning process
- 4) Students can easily, independently and interactively determine learning materials using existing navigation.

The limited ability of developers in terms of material and technical content, as well as the limited time available, so that the Interactive Multimedia Basic Competency Theory of the Development Process of Hindu Buddhism and Culture in Indonesia still has weaknesses and shortcomings, including the following.

1. Final results on an Evaluation are not saved in a file
2. It can only be used on computers and laptops only, so that students who do not have a laptop or computer at home find it difficult to learn independently by using the Interactive Multimedia Basic Competency Theory of the Development Process of Hindu Buddhism and Culture in Indonesia.

Some shortcomings in the Basic Interactive Multimedia Competency Theory of the Development Process of Hindu Buddhism and Culture in Indonesia that have been developed, it is hoped that it can be considered for other researchers or developers to produce a better Interactive Multimedia Basic Competency Theory of the Development Process of Hindu Buddhism and Culture in Indonesia.

IV. Conclusion

Based on the results of research that has been carried out regarding the development of Interactive Multimedia Basic Competencies in the Theory of the Process of Development of Hindu Buddhism and Culture in Indonesia class X at SMA Negeri 1 Lubuk Keliat, it can be concluded as follows.

1. The Basic Competency Theory of Interactive Multimedia Products The process of the development of Hindu Buddhism and Culture in Indonesia has been declared valid. The results of the alpha test that have been carried out have an average quantitative assessment of 3.68 with a valid category, so that interactive multimedia products can be tested according to the suggestions.
2. Interactive multimedia products in history subjects in high school are declared practical. The results of the beta test that have been carried out obtained a quantitative average of 4.29 respondent assessments with very practical categories, so that interactive multimedia products can be tested as recommended.
3. Interactive multimedia products in history subjects in high school are stated to have effectiveness on student learning outcomes. Based on the product trials carried out, an N-gain score of 0.64 was obtained in the Medium category, so that interactive multimedia products are known to be included in the Medium category. Then it can be concluded that the interactive multimedia developed is suitable for use in learning.

Based on the results of the study, the researcher gave the following suggestions.

1. For schools, schools must support teachers by providing facilities and infrastructure so that teachers are able to innovate in the use of the Interactive Multimedia Basic Competency Theory of the Hindu and Buddhist Religious and Cultural Development Process in Indonesia as a learning resource for History subjects.
2. For teachers, it is expected to be able to innovate and develop learning media that can be used as one of the teaching materials that facilitate the delivery of subject matter to increase student motivation and be able to improve student learning outcomes.
3. For students, this can be a new experience in learning so that their understanding of learning concepts increases.

For researchers, it is hoped that the existing Interactive Multimedia Basic Competency Theory for the Development Process of Hindu and Buddhist Religion and Culture in Indonesia can be redeveloped, and can be accessed on smartphones so that it is more practical and in addition to that, it is expected to develop teaching materials in other subjects.

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