Development of Accounting Learning Media Based on Wetland Environment for High School Students in South Kalimantan

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ABSTRACT

This study aims to develop a wetland-based accounting learning media for high school students in South Kalimantan. This study measures the feasibility of learning media developed with the validation of media experts and practitioners. The form of research and development uses model ADDIE which consists of five stages, namely analysis, design, development, implementation, and evaluation. The instruments used are validation sheets and student response questionnaires. The method used in data collection is the interview for initial research data and validation. The research step of the learning media development process starts from stage (1) Analysis; the stage is the stage of analyzing the need for developing new learning models/methods and analyzing the feasibility and requirements of developing new learning models/methods. The analysis phase includes curriculum analysis and student characteristics analysis. (2) Design, At this stage, the design of learning media development is carried out in the form of an initial design that is under the analysis that has been done previously. (3) Development, the development stage is the stage of product realization that is ready to be implemented. (4) Implementation, at this stage, the implementation is carried out in a limited manner at the designated school as the research site. (5) Evaluation, at this stage, researchers make revisions to the developed media based on criticism and suggestions obtained from the response questionnaire or field notes.

Keywords:
Media Development, Learning Media, ADDIE, Accounting Learning, Wetlands

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1. Introduction

In the era of society 5.0, technological progress is growing tremendously (Bartoloni et al., 2022; Fukuda, 2020; Huang et al., 2022). Advanced technology is accompanied by the development of science (Junius et al., 2022). The development of science also has an impact on the education sector (Orji et al., 2022; Phillips, 2021). Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and skills needed by themselves, society, nation and state (UU RI No. 20 of 2003, concerning the national education system). Furthermore, vocational education has a highly

specialized content in improving professional skills or knowledge in the curriculum specific to a particular field (Antonietti et al., 2022; Choy & Yeung, 2022; McDonald & Korber, 2023).

The learning process plays a major role in education, the learning process in the era of society 5.0 should adapt to the advancement of science and technology. With the use of technology the learning process becomes effective and efficient. Developing technology is no longer a challenge or obstacle, it is precisely with the existence of technology that the learning process can be helped.

The increasingly rapid development of technology must also be accompanied by the preservation of culture (Chen et al., 2022; Li et al., 2023), especially the culture of the people in the coastal areas of the river which are part of the wetland environment (Mkonda, 2022). In the life of the river community (wetland environment), their way of life is very dynamic, always trying to maintain their identity and life so that they can be maintained properly (Chaikumbung et al., 2019; Liu et al., 2023; Rasool et al., 2022). Under any conditions, people living in wetlands are more likely to have a habit of understanding as much as possible the natural conditions when the water will rise and fall (Let & Pal, 2023). When the water rises, the community must be able to anticipate the rising water volume so that it has the potential to inundate the yard. Meanwhile, when the water volume decreases and dries up, the yard becomes dry and usually the stilt house where they live is dry from the water under their house. Therefore, an understanding of the condition of the people of the wetland area is important to learn as a capital to include it in materials and learning.

Based on this, it can be said that education by utilizing environment-based technology that aims to introduce students to their environment needs to be built (del Brío González et al., 2022; Manolis & Manoli, 2021) in such a way as an effort to strengthen their sensitivity to the sustainable living of the wetland environment. Sustainable education centered on strengthening awareness of the wetland environment is an important thing in developing the lives of students who can live side by side with the natural surroundings so that they have become an inseparable part of the environment in which they live and build interactions. School should be a space for students to be able to develop themselves as students who have an ecological spirit.

The students who are also part of the local population also have the same local wisdom as the people who live in the river area. Rivers are a feature of the life of the people of South Kalimantan, so this provides a significant explanation that rivers serve as guidelines for the lives of residents in river areas. There will be no river life if there is no river as a space to build and shape the characteristics of the local area. Communities with river characteristics can also be formed in such a way because of the river that underlies and lies behind it. For this reason, when it is associated with the education of students who process and carry out the educational process, they will have a perspective that is oriented towards the wetland environment. One part of the community who is also a resident of the riverbank is a sasirangan craftsman. Sasirangan is part of the local wisdom of South Kalimantan which can be used as learning material for students. The life of the river coastal community, in this case the sasirangan craftsmen, can help students learn the potential of the sasirangan business as part of the wetland environment and bookkeeping materials using e which are related to high school student learning.

To achieve this goal, there are important things that must be considered to produce high-quality graduates of secondary students, namely good learning which is supported by good learning materials. Teaching materials are very effective as learning media because: learning materials can be uniformed, the learning process becomes more interesting and interactive, and positive attitudes of students towards the learning process can be improved.

In line with that, also teaching materials can be effective in supporting the achievement of competence and are meaningful for learning achievement. Teaching materials play an important role for teachers and students as vehicles to achieve competence. For students, teaching materials will affect their personality, although it is not the same between one student and another. Teaching materials serve as instrumental input in the learning process. The most important thing in designing teaching materials is that the organization of the content of teaching materials must be based on the characteristics of the structure of the content of the subjects that are in accordance with what is mandated in the applicable curriculum, so as to increase learning acquisition and retention rather than just following the order of the contents of the textbook.

Android-based learning media is one of the easy-to-use learning media because in this kind of global era, the majority of students are certain to have the sophistication of smartphones, namely Android-based. So that the use of this media is very easy because students only need to install learning media. After that, when it has been installed, students can immediately use the

media. The advantage of android-based media is that students can learn just by using their smartphone anywhere and anytime. Not only that, but with this kind of media, students can use the technology they have in a positive and efficient way.

Based on this, this research is intended to develop an android-based learning media with wetland-based accounting materials from Sasirangan craftsmen for students in South Kalimantan High School. The role of technology is inseparable from the routine tasks of accounting (Al-hattami, 2023). This needs to be done so that students' knowledge related to accounting is not only based on examples of trading or service companies, but also based on local businesses, namely sasirangan and can also function as strengthening students' understanding of ecological awareness (Botella et al., 2022; Safitri et al., 2022), namely about the wetland environment. Based on this condition, it is necessary for students in South Kalimantan to understand well how to live in a wetland environment by utilizing developed technology. This can be realized by providing students with materials related to the wetland environment. One of them is through accounting learning media at the high school level in South Kalimantan. The learning media meant in the context are media that need to be designed in such a way as to how to organize learning objectives, include the ecological values of wetlands in learning, transform the ecological values of wetlands in oral and written actions so that they become proficient in applying the material.

2. Methods

This research is a research and development (Research and Development), namely developing learning media based on the wetland environment in accounting subjects for general journal materials. The development model used in this study is ADDIE which consists of five stages, namely analysis, design, development, implementation, and evaluation. The research procedures for the ADDIE model are as follows;

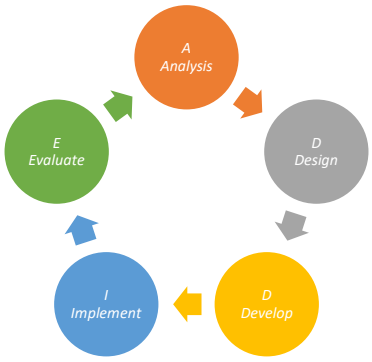

Figure 1 : ADDIE development model stages

The test subjects in this study were the 12th grade students of SMA South Kalimantan (Kalsel). The data collection technique used an open interview technique (Jayachandran et al., 2023) to teachers and grade 12 students of SMA South Kalimantan.

The types of data obtained in this study are quantitative and qualitative data (Zhou, 2019). Quantitative data obtained from material experts, media experts. Meanwhile, qualitative data were obtained from teachers and students to be analyzed as the basis for making learning media.

3. Results

The first stage of analysis is carried out on teachers and students so that learning media are made according to the teacher's wishes and the students' character. The results obtained from this analysis show that 37.5% of teachers are interested in wetland-based learning media, 94.1% of teachers want the content of wetland-based learning media is material, sample questions, simulations, exercises and videos, and 100% the teacher wants learning media in the form of audio-visual. The results of the analysis from students were 91.8% of students felt that using cellphones in learning media made learning more fun, 61.2% felt the need for wetland-based learning media, and 69.7% of students agreed in learning to use wetland-based learning media.

Second, from the ADDIE development model is design. At this stage, the design of learning media development is carried out in the form of an initial design that is in accordance with the

analysis that has been done previously. Researchers also develop instruments that will be used to assess the media that has been developed. The instrument is structured by taking into account two aspects of quality, namely validity and practicality. When designing material products, researchers determine the material sub-chapters to be based on wetlands but still in accordance with material indicators. Furthermore, researchers design media products through the design process in power point to make it easier to make applications on android-based mobile phones.

Third, the development stage is to realize the designs that have been made at the design stage to be able to produce a learning application based on wetlands. In realizing the design, the tools used to process and develop applications are power point (to design application forms), canva (to create icons for applications), ispring (to convert ppt into html), java, and website 2 apk builder. (Convert from html to an APK). The materials used in making the application are materials, icon pictures, and questions for evaluation. After the materials and tools have been prepared, the stages of developing accounting learning media based on the wetland environment are as follows: 1) create a power point with a ratio of 16:9; 2) Make the home display, menu and cover page; 3) insert learning materials & videos into power point; 4) input the questions into the power point; 5) hyperlink each icon to be linked to each slide; 6) save power point and publish using iSpring to get html format ppt; 7) open the web application 2 apk builder, input the html results from iSpring into the application so that it can be converted into an application form (APK).

Fourth, the implementation stage is testing learning media products in October 2022. The test subjects used are media experts and material experts. The trial process for learning media products is carried out within a day. In testing learning media products, the experts operate them on their respective cell phones. Researchers provide expert freedom in operating learning media intending to know whether experts can operate and understand learning media easily and clearly. During the product trial process, the researcher also observed each of the experts in the use of learning media to determine whether the experts were enthusiastic and understood in using learning media based on the researcher's perspective.

After conducting the product trial process, the researcher gave the test subject a questionnaire sheet about learning media to fill out. Questionnaire sheets were given to test subjects with the aim that researchers can find out the response and level of user satisfaction when operating learning media so that researchers can determine the feasibility of learning media. Questionnaire sheets about learning media differ between media experts and media experts, and each statement item has five alternative answers for the test subject to choose from based on their respective assessments.

The results of the questionnaire scores will be calculated for each statement item using the average general aspect formula. The results of the questionnaire by media experts are as follows:

1. Creative and innovative (new, flexible, interesting, intelligent, unique, and not random) – Very good
2. Communicative (easy to understand and use good, correct, and effective language) – Very Good
3. Superior (has advantages compared to other learning multimedia or conventional methods) – Very Good
4. Effective and efficient in the use of learning media– Good
5. Reliability (reliability) – Very Good
6. Maintainable (can be maintained or managed easily) – Very Good
7. Usability (easy to use and simple in operation) – Very good
8. Accuracy in selecting the type of application/software/tool for development – Very good
9. Compatibility (learning media can be installed and run on various existing hardware and software) – Good
10. Packaged learning media programs in an integrated manner and easy to execute – Very Good
11. Complete learning multimedia documentation includes: installation instructions (clear, concise, and complete), usage, menu display (clear, structured, and anticipatory), program design (clear, and describes the program workflow) – Very Good
12. Reusability (part or all of the learning multimedia can be reused to develop other multimedia) – Very Good
13. Communicative: visual and audio elements support teaching materials, so they are

easily digested by students – Very Good

14. Creative: Visualization is expected to be presented in a unique and not clichéd (often used), to attract attention – Very Good
15. Simple: visualization is not complicated, so as not to reduce the clarity of the content of the teaching material and easy to remember - Very Good
16. Unity: using visual and audio language that is harmonious, intact, and in line, so that the teaching material is perceived as a whole (comprehensive) – Very Good
17. Depictions of objects in the form of realistic and symbolic images are good – Very Good
18. Selection of appropriate colors, in order to support the compatibility between the creative concept and the chosen topic – Very Good
19. Typography (font and arrangement of letters), to visualize verbal language in order to support the content of the message, both in terms of readability and psychological function – Good
20. Layout: the placement and arrangement of visual elements is well controlled, in order to clarify the role and hierarchy of each of these elements – Good
21. Moving visual elements (animations and/or movies), animations can be used to simulate teaching materials and movies to illustrate real materials – Very Good
22. Familiar and consistent navigation for effective use – Very good
23. Audio elements (dialogue, monologue, narration, music illustration, and sound/special effects) are appropriate to the topic character and are used to enrich imagination – Very Good

As for suggestions and recommendations for improvement by media experts, it is necessary to pay attention to the consistency of the use of letters and their sizes. The conclusion of the assessment is feasible to use.

The percentage result of all assessments by media experts is
Percentage = Value of all aspects / Maximum value of aspects x 100%
Percentage=111/115x100% = 96.5%

The results of the questionnaire by material experts are as follows:

1. The suitability of the material with SK, KD, Indicators and Learning Objectives
   a. The suitability of the material with KI - Very Good
   b. The suitability of the material with KD - Very Good
   c. The suitability of the material with the Indicator - Very Good
   d. The suitability of the material with the Learning Objectives - Less
2. The truth of the material concept in the application – Very Good
3. The accuracy of coverage of the material contained in the application has the right coverage - Very Good
4. Submission of the material in sequence, the material contained in the application is presented systematically - Very Good
5. Compatibility of materials and media with technology development- Very Good
6. The suitability of the picture to clarify the material- Very Good
7. The suitability of the quality level with the cognitive development of class XII high school students – Very good

Material experts' suggestions and recommendations for improvement are the lack of learning objectives. Conclusion Appropriate for further use in learning in high school with revisions according to suggestions.

The percentage results of all assessments by material experts are:
Percentage = Value of all aspects / Maximum value of aspects x 100%
Percentage=49/50x100% = 98%

Fifth the evaluation stage. From the results of the percentage of media experts and material experts, it can be said that from all aspects of the observations on the test subjects the percentage value is 97.25%, which means that the test subjects in operating the learning media are very good. So from the results of the two percentages, it can be said that android-based learning media

products with wetland-based accounting materials from Sasirangan craftsmen for students in South Kalimantan High School are very suitable to be used as learning media. The results of the evaluation activities, the results of the questionnaire obtained on the learning media, the average results of all aspects indicate that the learning media is very feasible. So that the development of learning media products can be said at this stage as the final product.

4. Discussion

Based on the results of product trials that have been carried out on test subjects by media experts (Rosenberg et al., 2023) and material experts, it is said to be feasible as a learning medium (Manolis & Manoli, 2021; Rachmadtullah et al., 2023) and can assist students in studying wetland-based accounting. In accordance with the needs of students or teachers, learning media is expected to increase their sense of pleasure and enthusiasm (Zong et al., 2022) in learning accounting based on wetlands. This is evident from the results of researchers' observations on the aspect of media readiness by material experts and media experts showing results of 97.25% or very feasible. In addition, learning media can channel messages, stimulate thoughts, arouse the enthusiasm and attention of students to carry out learning activities (Engelmann et al., 2022; Hai & Linh, 2022) and learning media can stimulate students to carry out learning activities.

The use of learning media in addition to stimulating the mind, arouse enthusiasm and attention. In addition, learning media (Sarfo et al., 2022) can also increase students' understanding of learning, the presence of learning media in the learning process can attract students to learn and can make learning easier for students to understand because learning materials have a clearer meaning. So that a learning media was developed with the aim of manipulating concrete objects to resemble their original form and students could easily understand wetland-based accounting materials. This is evidenced from the results of the questionnaire sheet on the aspect of the image used clearly which obtained a very good score, which means that the image used in the learning media is clear.

Learning media (Sujarwo et al., 2022) designed to make it easier for students to learn accounting based on wetlands. In addition, learning media is designed so that students besides playing can also carry out learning activities in it so that children can think creatively and can stimulate thinking power and train concentration. This is evidenced from the observation sheet on the aspect of paying attention to each explanation in the content of the material which obtained a percentage result of 95%, which means that almost all students pay attention to the explanation in the material through a tutorial and video with focus and concentration. The benefits of learning media can increase students' attention to understand the material in the learning process (Atin et al., 2022).

5. Conclusion

Based on the results of research and discussion on Development of Wetland Environment-Based Accounting Learning Media for High School Students in South Kalimantan, the following conclusions can be drawn: 1) Development of wetland environment-based accounting learning media using the ADDIE development model, consisting of: First, the analysis phase, the teachers and studens needs learning media based wet land; Second, the design stage is designing material products and designing media products in the form of flowcharts and storyboards; Third, the development stage, namely realizing the design design in the form of accounting learning media based on the wetland environment; Fourth, the implementation stage is testing the product to media experts and material experts; Fifth, the evaluation stage is to pay attention to suggestions and improvements given by media experts and material experts which eventually become improvements. Based on the questionnaire results, the test subjects received an average percentage rating of 97.25%, supported by the results of media experts getting a percentage assessment of 96.5%. The percentage value by material experts was 98%. So that the accounting learning media based on the wetland environment is very suitable to be used as a learning medium.

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