

[Research Article]

DEVELOPMENT OF PHOTONOVELA PHYSICS LEARNING MEDIA BASED ON THE CANVA APPLICATION FOR DEAF CHILDREN AT SLB NEGERI 1 MAKASSAR

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DOI: <http://dx.doi.org/10.15575/jotalp.v8i2.24082>

Received: 11 February 2023; Accepted: 31 Agustus 2023; Published: 31 Agustus 2023

ABSTRACT

This writing is development research or R&D (research and development) carried out with the aim of knowing the steps for developing photonovel physics learning media based on the Canva application. The photonovela physics learning media development model was developed based on the DDD-E (decide, design, develop, and evaluate) development model. The test subjects in this study were deaf children at SLB Negeri 1 Makassar. The results of this study indicate that the validity value obtained for the media is 0.67. This value is in the valid category. This shows that the media is valid or feasible to use. The level of practicality of the media is based on the results of the teacher's response. The results showed that the photonovel physics learning media based on the Canva application to the teacher's response by 100% was in the practical category to use. The level of effectiveness of learning media is based on the results of student learning tests, with a presentation of 85% of students obtaining mastery of learning above the passing grade.

Keywords: *Learning Media, Photonovela physics, deaf children*

How to cite: Komariyah, U. & Nurlaela, A. (2023) Development of Photonovela Physics Learning Media Based on the Canva Application for Deaf Children at SLB Negeri 1 Makassar, *Journal of Teaching and Learning Physics* 8 (2), 63-70. DOI: <http://dx.doi.org/10.15575/jotalp.v8i2.24082>



1. INTRODUCTION

Progress sector Education from something nation will determine progress in other sectors of the nation. Therefore, education must be quality and along with the development era (Widodo 2015). Education is an effort to prepare the new generation young in welcome and face the development era era global (Nurrita 2018). Constitution 1945, CHAPTER XA about Right Fundamental Man, in chapter 28 C paragraph 1 states that every person is entitled to develop self through fulfilment need basically, entitled to get education and benefit from science and technology, art, And culture, by increase quality his life And by well-being humanity (Widodo, 2018).

The prevalent issue in the realm of education is often attributed to a deficient learning process. In the course of teaching and learning activities, students tend to focus more on theoretical aspects (Nurrita 2018). Ideally, educators should demonstrate heightened creativity in the planning and execution of learning experiences, including the selection of engaging learning media to captivate participants. This is crucial because interest plays a pivotal role in conceptual transformation (Rahayu, Sutikno, & Masturi 2015).

Learning media serves as a teaching aid, providing essential support for teaching methods employed by educators (Nurrita 2018). According to the National Education Association (NEA), media encompasses all forms and channels used for the delivery of messages (Silverblatt, 2014).

The photovela, a type of physics media, possesses a distinctive advantage in its ease of use for teaching and learning activities. It can be applied across various subjects and educational levels, facilitating the sharing of

disciplinary knowledge and the transformation of abstract concepts into a realistic format (Sudjana & Rivai, 2010).

A photovela is a form of media that resembles comics or illustrated stories, utilizing photographs instead of illustrations. It is also recognized as a packaging method for combining photo media with a novel or story format. Unlike a photo label, where photos explain individual materials, the photos in a photovela contribute to the overall plot (Khoiruddin et al., 2023).

A deaf child experiences hearing impairment, ranging from mild to severe levels, leading to a lack of hearing ability (Hernawati, 2007). Deaf children, like their counterparts in other countries, are entitled to education, as stated in Article 31, paragraph 1 of the 1945 Constitution. This article emphasizes the right to education for every Indonesian citizen, regardless of physical limitations (Wahid, 2020).

It is imperative to recognize that children, as creatures of Allah SWT, inherently possess the right to acknowledge their humanity and receive support for their well-being. Providing guidance is essential to help them feel secure and capable of adapting to their environment. Children with special needs are entitled to education just like their typically developing peers. Fundamentally, all individuals are born with equal rights and obligations to pursue knowledge.

Furthermore, the Qur'an emphasizes the acceptance of differences in language and skin color among humans as a positive and divinely ordained reality, highlighting the manifestation of God's power in Surah Al-Rum verse 22:

وَمِنْ آيَاتِهِ خَلْقُ السَّمَوَاتِ وَالْأَرْضِ وَالاخْتِلَافُ

الْأَسْمَانِ وَالْأَرْضِ وَاللُّغَمِينَ
الَّذِينَ فِي ذَلِكَ آيَاتٍ لِلْعَالَمِينَ

Meaning: And among the signs of His power is creating the sky and the earth and your different languages and the colour of your skin, really on the one that truly is found signs for people who know (Department RI 2010).

In recognizing the diversity created by God among individuals, it becomes apparent that each person is unique, and thus, there is a mutual need for one another. Inclusive education represents a shared ideology that we aim to embrace. However, the practical implementation may vary across different regions due to the understanding that inclusive education is an ideology and an ideal, not merely a resource or capital (Leonardo, 2003; Livingstone, 2012). Consequently, diversity in its execution is observed, differing from one area to another.

An observation conducted at SLB Negeri 1 Makassar reveals that the school program follows a driving curriculum, utilizing visual aids as learning tools. The current student count in the school is seven individuals. In discussions with the teaching staff, it was disclosed that nearly half of the educators graduated from this special education institution.

Interviews with the educators at SLB Negeri 1 Makassar also indicate that the school employs a learning media format in the form of packaged books. In response, the researcher proposes to enhance instructional media for deaf children by introducing the use of physics photonovela based on the Canva application. Research conducted by Ermawati et al. (2020) supports this approach, affirming the significant utility of physics photonovela for visual learners, particularly deaf children.

Given the insights gathered, our research will focus on the development of a learning

media titled 'Development of Physics Photonovela-Based Application Using Canva for Deaf Children at SLB Negeri 1 Makassar.

2. METHOD

The type of research used is development research with the research model, namely DDD-E (Decide, Design, Develop, and Evaluate) (Fatah et al., 2019). The time of research was carried out at SLB Negeri 1 Makassar on 28 November-03 December 2022. The research subjects taken were class IX deaf children at SLB Negeri 1 Makassar.

The research method used must be written according to a scientific way, namely rational, empirical and systematic. The time and place of the research should be clearly stated, along with the data as well as the tools and materials used in the research. The Flowchart in this study is seen in Figure 1.

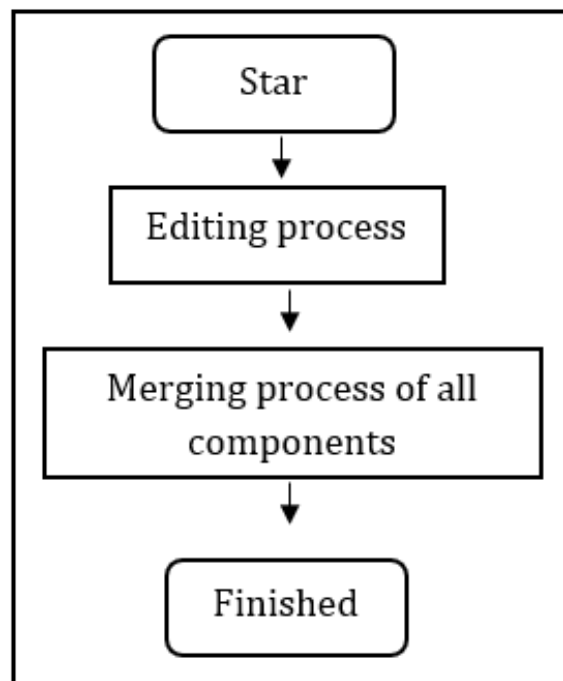


Figure 1. Flowchart

3. RESULT AND DISCUSSION

3.1 The process of developing learning media

3.1.1 Decide Stage

The initial stage, known as the decision phase, involves analyzing media needs before development. This analysis encompasses determining goals for the developed learning media, involving a series of activities such as initial observations regarding the use of physics learning media, specifically photonovel. The developmental purpose is to transform the existing learning media, originally designed for normal children, into a format tailored specifically for deaf children.

In the second phase of needs analysis, attention is given to the theme and scope of multimedia. The developed product revolves around the theme of magnets, with a focus on the magnetic properties of matter. This choice was validated during the initial observation, revealing that in physics learning for deaf children, the primary emphasis is on the special properties of magnets.

The third needs analysis involves enhancing prerequisite capabilities to ensure that participants in the study can undergo trial testing without constraints in the research process. The decision stage is evaluated in determining goals, themes, and room scope for multimedia, as well as specifying prerequisite abilities, as follows: 1) Determining objectives: There are no obstacles in this stage, as learning objectives do not necessarily have to align with the design of the learning implementation.; 2) Determining the theme and room scope for multimedia: No constraints exist at this stage, as the theme is already predetermined based on the physics material intended for teaching deaf

children; and 3) Specifying prerequisite abilities: No obstacles are encountered at this stage, as participating students are well-prepared for trials. They have readied a pen for recording important information and have also prepared to answer the provided question sheet.

3.1.2 Design

The second stage is the design phase, which consists of several steps, including determining the theme and title, creating a storyboard, taking photos or pictures, and designing the learning media.

In this second stage, the focus is on designing views and storyboards. Designing involves planning the product to be reviewed and modified, ensuring the creation of a refined end product. Storyboards serve as a visual representation of the story, outlining the roles of characters in the learning media. They facilitate the researcher's ability to convey ideas about the design and presentation of the learning media.

In the design phase, evaluation is conducted during the creation of storyboards and the design of the learning media, incorporating the following steps: 1) Storyboards are crafted to determine the narrative structure in the physics photonovel learning media. They elucidate the roles of characters to be featured in the learning media, and 2) The appearance of the learning media is shaped by combining the storyboard's narrative with images created in alignment with the material. This meticulous design process results in the production of a physics photonovel learning media product based on the Canva app, complete with a cover design, as depicted in Figure 2.



Figure 2. Instructional Media

3.1.3 Develop (Merge)

The third stage is development. In this stage, the researcher incorporates all product components, which include storyboards and drawings or photos from the surrounding environment, to create a physics learning media photonovel based on the Canva app for deaf children. The product development process undergoes validation by two validators. The researcher designs the initial product, which is then presented to the supervisor for review and modification, ultimately resulting in the creation of Prototype I (initial prototype stage). After undergoing several changes, the preliminary design evolves into Prototype I, which goes through validation stages for language, display, and content/material aspects. This process aims to enhance the development of the learning media. The suggestions and inputs provided by the validator team serve as material for refining, modifying, and further developing the physics photonovel learning media. The validator team consists of two individuals. The validation stages are conducted multiple times until Prototype II (final prototype stage) is achieved for testing.

Based on the validity analysis, it was determined that the learning media developed in the initial validation stage falls into the less valid category, with a score of 0.30 requiring revisions in all aspects. This

serves as the basis for the second planning phase. The results of the second design validation analysis, conducted during the final validation stage, demonstrate that the product falls into the valid category, with an Aiken V index of 0.67, without any corrections needed in any validated aspects. Based on these findings, the overall product is considered valid.

In the development stage, an evaluation is carried out, referring to both the decision and design evaluation stages, focusing on several components, namely pictures/photos and storyboards. These components are then combined to create the physics photonovel learning media. However, the merged media is not directly utilized as it must undergo additional stages and revisions.

3.1.4 Evaluate

Stage final from development media learning based application canvas for deaf children and the overall evaluation. Learning media that has developed and has worthy according to the second validator and evaluated with do test try to subject study For know level practicality And effectiveness from media learning Which developed. Test try practicality. This was done by giving a response questionnaire to class IX teachers at SLB Negeri 1 Macassar. Meanwhile, the effectiveness trial was carried out by conducting a result test Study towards students.

3.1.4.1 Validity Level

The learning media product, Physics Phototonovela, based on the Canva app for deaf children, is deemed valid after undergoing multiple stages of enhancement or revisions known as Prototype I and Prototype II. During Prototype I, the validator provided suggestions for improving the learning media, resulting in a

validation score of 0.30, falling into the "not valid" category. Moving forward to Prototype II, the validator assigned a score of 0.67, categorizing it as valid and suitable for use. Despite all modules and data collection instruments reaching validity conditions, there are specific components requiring refinement for the learning modules and instruments. Once these modules and instruments achieve a high level of validity, they can proceed to the testing phase.

The use of physics photonovel learning media for deaf children is considered valid if the second validator's evaluation demonstrates that the development of the learning media aligns with sound theory and maintains internal consistency, particularly the cohesion within the developed learning media.

A media product is regarded as valid if the average score from the second validator meets the minimum criterion of "Good." The validator's ratings indicate that all components evaluated in the physics photonovel learning media, based on the Canva app for deaf children, fall into the "Good" category, with an average value (V) of 0.67.

Analyzing the validation results of the physics photonovel learning media based on the Canva app for deaf children, using the Aiken V index in the final assessment (Prototype II), an average rating of $V=0.67$ is obtained for all aspects. This signifies that the product falls into the valid category. In conclusion, both validators assert that the physics photonovel learning media for deaf children is valid and can be effectively utilized in the learning process at any given time.

3.1.4.2 Practicality Level

The practicality level of the physics photonovel learning media based on the Canva application for deaf children is assessed through the teacher's response questionnaire regarding the use of this learning media. According to the research findings from the teacher response questionnaire, educators stated that the components of the learning process were executed effectively when utilizing the learning media.

The respondents responded with scores ranging from 34 to 42, within the range of 1 to 4, as calculated by the class IX SLB teacher at State 1 Makassar. This indicates that 100% of respondents found the application-based physics photonovel learning media on Canva practical for deaf children. This outcome demonstrates that the Canva app-based physics photonovel learning media for deaf children has achieved practicality principles.

Practicality is determined by the user's response to the learning media, as obtained from the response questionnaire completed by the class IX SLB teacher at State 1 Makassar. The practicality of learning media is crucial because one of the requirements for effective learning media is the ease of use by the user. An essential factor from the analysis of user needs is that the media, in the form of devices, must be user-friendly.

Based on the explanation provided, the reinforcement from the research results aligns with established theories, affirming that the physics photonovel learning media based on the Canva application for deaf children falls into the practical category, as detailed in Table 1.

Table 1. The practical category

No	range	F	%	Classification
1	$x > 42$	0	0	Very good
2	$34 < x \leq 42$	1	100	Good
3	$26 < x \leq 34$	0	0	Pretty good
4	$18 < x \leq 26$	0	0	Not good
5	$x \leq 18$	0	0	Not good

3.1.4.3 Effectiveness Level

Effectiveness refers to the success of learning, measured by the attainment of goals after the learning process. If the learning objectives are achieved, the learning is considered effective. Efficiency is also a factor. If the objectives are accomplished using minimal time and resources, the learning is deemed efficient. Media that is both effective and efficient can significantly contribute to achieving learning goals.

The effectiveness level of the Canva application-based physics photonovel learning media for deaf children can be assessed through the results of a post-learning test. The test, comprising ten multiple-choice questions, yielded student scores indicating that six students achieved a complete score, while one student did not meet the criteria for completeness. The effectiveness of the learning media in producing study results is demonstrated by the test outcomes, with 85% of participants achieving complete grades and 15% falling short.

The final score results are deemed good if students achieve classical completeness, meaning at least 80% of the class participants meet the minimum criteria for completeness. A class is considered complete if $\geq 80\%$ of students have successfully passed the learning phase.

Media can be considered effective if its use aligns with the mission and learning objectives. The role of media as a tool or learning aid is essential in helping students comprehend the learning material effectively.

In conclusion, based on the analysis and theoretical framework, the physics photonovel learning media based on the Canva application for deaf children is deemed effective for use, as illustrated in Table 2.

Table 2. Effectiveness of Media

No	intervals	F	%	Category
1	$X \geq 70$	6	85	complete
2	$X < 70$	1	15	Not Completed

4. CONCLUSION

The results showed that the photonovel physics learning media based on the Canva application for deaf children at SLB Negeri 1 Makassar was included in the valid category after going through several stages of media validation carried out by two validators with a value of 0.67. The practicality level of the media showed a value of 100%, and the media was said to be practical to use through the results of the teacher's response, which the SLB Negeri 1 Makassar teacher filled in. Moreover, the level of effectiveness of the media generated from the learning outcomes test, which is filled in by students who show a value of 85%, so that the media is effective to use.

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