JURNAL
Pendidikan, Sains, Sosial dan Agama
SEKOLAH TINGGI AGAMA BUDDHA NEGERI RADEN WIJAYA WONOGIRI

Development Of Uno Card Learning Media For Class Xi Physics Learning

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Article History:
Received: 9 October 2024 *Revised: 1 May 2025* *Published: 17 August 2025*

Abstract

This study aims to develop a physics learning media in the form of UNO Cards to enhance students' learning motivation in physics learning, particularly on the topic of heat for Grade XI high school students. The research employed the Research and Development (R&D) method using the ADDIE development model, which includes the stages of analysis, design, development, implementation, and evaluation. The research subjects consisted of five students in the small group trial and 19 Grade XI students from SMA Swasta Methodist 7 Medan in the field trial. The developed learning media was validated by content and media experts and was declared highly feasible, with an average feasibility score of 90% by content experts and 90.5% by media experts. The small group trial achieved an average feasibility score of 94%, while the field trial showed an average of 91%. In addition, the use of UNO Physics Cards was proven to increase students' learning motivation from the "moderate" category (65.18%) to the "very high" category (89%). The results indicate that the UNO Physics Card media is effective, feasible, and capable of increasing students' motivation in learning physics. Therefore, this media can serve as an innovative alternative in classroom learning processes.

Keywords: *Learning Media, UNO Physics Card, Learning Motivation*

INTRODUCTION

Learning is crucial and cannot be ignored in the educational process, which aims to foster growth and progress. According to Herawati (2018), learning is a process of behavioral change that occurs internally within an individual through the pursuit of new knowledge, skills, and attitudes. Each individual's ability to learn can provide various benefits both for themselves and for society as a whole (Ardilasari, 2020).

The learning process is an activity between teachers and students to achieve learning objectives (Larasati & Prihatnani, 2022). Learning can be defined as an effort aimed at exploring and developing one's potential and shaping character through a series of experiences and exercises carried out continuously over a certain period of time. The learning process is not merely limited to acquiring information but also involves profound changes in the individual. These changes occur as a result of the individual's interaction with their environment and are continuous, active, and directed, enabling students to develop optimally in various aspects of life.

Education is a learning process undertaken by each individual to help them understand, comprehend, and mature. Education refers to all forms of understanding acquired

throughout life, wherever and in whatever situation, which positively influences each individual's development. According to (Ulfah et al., 2021), education enables each individual to develop their intelligence and abilities, thus forming an independent character. Education can be a crucial investment in creating quality human resources (Abd Rahman et al., 2022).

Professional teachers are qualified educators who are able to create a conducive learning environment, guide students, and optimally improve their academic achievement. According to, a teacher's task is not only to teach, but also to design learning, choose effective methods, and evaluate learning outcomes. Teacher professionalism is not only limited to the ability to provide learning to students, but also to manage information and the environment to facilitate learning activities, one of which is by enriching learning resources and learning media. This explanation is in accordance with the statement that teachers must at least have the competence to use communication and information technology functionally.

From this explanation, it can be concluded that teachers play a crucial role in creating more engaging learning. By utilizing a variety of appropriate resources and methods, initially difficult-to-understand material canbe presented in a more enjoyable and accessible way for students (Khairunisa, 2022).

Physics learning is a learning process that systematically applies scientific studies related to concepts, laws, and logical calculations. Understanding physics is abstract, requiring high concentration and seriousness, often requiring a long time, with many symbols that are sometimes difficult to understand. Due to its abstract nature, physics learning requires supporting media to facilitate student understanding of the concepts taught (Prayoga et al., 2023). Physics itself is a discipline that focuses on natural phenomena and quantitative analysis, requiring precision in its understanding and application. Student understanding of the learning material is the primary goal of the learning process. Therefore, the use of learning media is needed as an innovation in learning media that can encourage student motivation. Motivation plays a crucial role in the learning process because it can encourage students to strive to achieve their academic goals with greater enthusiasm and enthusiasm (Lalita et al., 2023). Motivation in learning can be said to be the driving force within a person to achieve success by engaging in an activity. Students who lack motivation will be more lazy in learning and listening to their teacher's explanations.

Based on interviews and observations with a physics teacher at Methodist 7 Private High School in Medan, it was discovered that each student has different abilities and learning styles. These differences present a challenge for teachers in effectively delivering subject matter so that all students can understand it. Furthermore, limited facilities and learning resources available at the school also influence the learning process. Teachers often face difficulties in adapting teaching methods to the different needs of students. Some students understand concepts more easily through verbal explanations, while others require visual illustrations or hands-on experiments to grasp concepts effectively. The lack of a variety of interactive learning media also makes some students less motivated to participate in Physics lessons, which can ultimately impact their learning outcomes (AISYAH et al., 2023). Therefore, innovative teaching strategies and the use of more engaging learning media, such as educational games or relevant teaching aids, are needed. With a more flexible and interactive approach, teachers can create a more dynamic learning environment, increase student engagement, and help them understand Physics concepts more deeply and enjoyably (TD Yunimuninggar & Fardhani, 2024).

The UNO card game is an innovative alternative media that educators can utilize to create more engaging and enjoyable learning interactions. By integrating exciting game elements and actively engaging students, UNO cards can be tailored to learning materials. Technological advancements also allow UNO to be developed digitally for more flexible learning. UNO is a card game specifically designed to be played. In the Big Indonesian Dictionary, the word "UNO" means "ONE." This card game is played by matching the numbers and colors on each card. In this game, each player attempts to match the color, symbol, or number on the card played by the previous player, and the winner is the player who finishes their cards the fastest (Nadiya et al., 2022). Furthermore, the use of card games in learning can improve the quality of student learning and attract their interest and attention to actively participate in the learning process while playing (Aulia, 2024). The UNO card game not only provides a fun playing experience but also indirectly encourages students to be actively involved in learning. With a more relaxed and interactive atmosphere, students can understand the material without feeling overwhelmed, thus increasing the overall effectiveness of learning (Halimatusyaâ et al., 2021). UNO Cards contain action cards that have special rules when played, adding challenges and strategies to the game. By combining elements of strategy and social interaction, the UNO Card game can create a learning experience that is not only engaging but also effective in improving conceptual understanding (Tessalonika Diahayu Yunimuninggar, 2023).

Based on the description above, and considering the benefits of the media aspect, the researcher is interested in conducting research with the title "Development of UNO Card Learning Media for Physics Learning in Grade XI." The use of UNO Cards as a learning medium is based on the character of students who generally enjoy the game. With this approach, it is hoped that students will feel more relaxed while learning and avoid boredom or saturation. The UNO Card game is played in groups, where each card has been modified to contain material or questions designed by the researcher. Therefore, this game can be used by educators as an aid in the learning process to make the classroom atmosphere more interesting and interactive

METHOD

Research location

This research was conducted at Methodist 7 Medan Private High School, a high school located at JL. Madong Lubis No. 7, East Medan District, Medan City, North Sumatra.

Research Time

This research was conducted in the even semester of the 2024/2025 academic year.

Types of research

The type of research is research and development (R&D). Sugiyono, (HB Uno, 2023) stated that the research and development method is an approach used to produce a particular product and test the effectiveness of the product. Meanwhile, according to Nana Syaodih, (Hasan et al., 2020) research and development is a process that aims to create new products or improve existing products so that they can be accounted for. In line with that, according to Endang (WA Uno, 2021) explains that the main objective of research and development is to produce new products through systematic development stages. Based on the opinions of these experts, it can be concluded that research and development is a method used to create

or improve a product with a structured and accountable approach. Research and development products in the field of education can cover various aspects, such as learning models, educational media, equipment, textbooks, evaluation tools, and other learning devices, including curriculum and school policies. In this study, the product developed is the UNO Physics Card Learning Media, which is designed as an innovative tool to improve students' understanding of physics concepts in a more interactive and enjoyable way (Yanala et al., 2021).

Subjects and Objects of Research

The subjects in this study were divided into two groups, namely the small group tryout group and the field tryout group. The small group tryout involved five students from the Physics Education Study Program at HKBP Nommensen University, Medan, who were tasked with assessing the feasibility of the UNO Physics Card learning media before proceeding to the field trial stage. Meanwhile, the field trial involved 19 11th grade students from Methodist 7 Private High School, Medan as participants to test the effectiveness of using learning media in a real classroom context.

Research object

The object of this research is the quality of the UNO Physics Card learning media, which will be assessed in terms of its suitability. This assessment covers learning aspects, media design or engineering aspects, and visual communication aspects. It also examines the media's influence on increasing student learning motivation.

Research Procedures

This research applies a development procedure using the ADDIE model. The ADDIE model was developed by Robert Maribe Branch and consists of five main stages: Analysis, Design, Development, Implementation, and Evaluation (Dudung, 2018).

RESULT AND DISCUSSION

Research result

1. Description of the development of Uno card learning media

This research and development resulted in a product in the form of Uno card learning media for 11th-grade physics. This learning media was developed to address the problem of low student motivation in learning physics. This learning media was piloted on five second-semester physics students and was approved and declared suitable by media expert validators and material expert validators.

2. Media Product Validation

The initial product will be validated by experts. The results will be used to refine the physics Uno card learning media until it is ready and suitable for testing.

a. Validation by material experts

The feasibility of the material was validated by two individuals considered experts in physics, particularly heat. The first validator is a lecturer in the Physics Education Study Program at HKBP Nommensen University, who has a deep academic and scientific

background. The second validator is a physics teacher at Methodist 7 Private High School, Medan, who has practical experience in teaching physics at the secondary school level. Both were selected as material experts to ensure that the content in the developed learning media is in accordance with scientific standards and learning needs in the field (Fitri & Handhika, 2019).

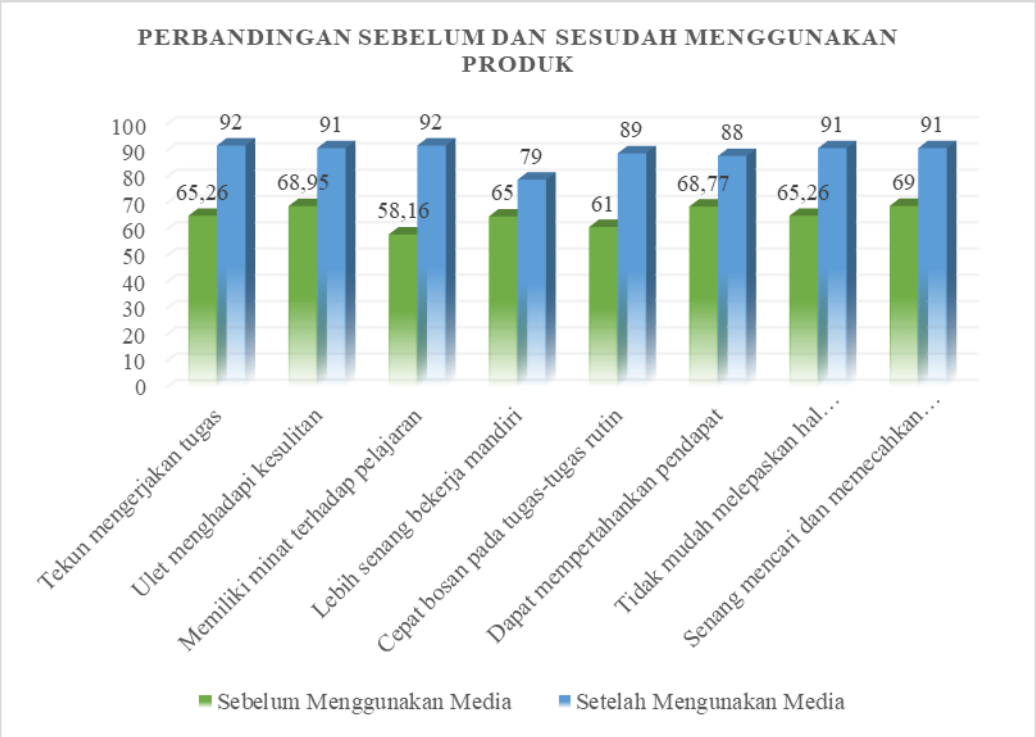

Figure 1. Comparison diagram of student learning motivation before and after using the product

Based on the results presented above, it is known that before the use of learning media, the average student learning motivation was in the moderate category, with a percentage of 65.18%. Almost all motivation indicators showed suboptimal results. Students tended to be only moderately diligent in completing assignments (65.26%), were quite able to overcome difficulties (68.95%), and had a moderate level of interest in the lesson (58.16%). Furthermore, some students still showed signs of a lack of enthusiasm for independent learning and easily became bored with routine tasks (Wulandari et al., 2021) . This condition indicates that previous learning methods were not able to maximize student motivation (Agustin et al., 2019).

After using the UNO Physics card learning media, there was a significant increase in all aspects of student learning motivation. As seen in Table 4.6, the average learning motivation increased to 89.5%, which is included in the very high category. Students showed improvements in various indicators, such as being more diligent in completing assignments (92%), more confident in facing difficulties (91%), and having a higher interest in learning (92%). In addition, students also became more enthusiastic about independent learning, active in group assignments, and more interested in solving the problems given.

B. Discussion of Research Results

This study aims to develop and test the feasibility of educational game-based learning media, namely UNO Physics cards, as a solution to increase student learning motivation in physics subjects, especially heat material. The results of the study were analyzed based on

expert validation stages, small group trials, field group trials, and evaluation of student learning motivation before and after the use of the learning media.

1. Media Suitability Based on Expert Validation

The UNO Physics card media has been validated by two material experts and two media experts. Based on the validation results from the material experts, an average score of 89.5% was obtained, which is included in the very appropriate category. This indicates that the content of the material developed in this media is in accordance with the competency standards and objectives of physics learning at the high school level. The material presented is also considered accurate, in accordance with the curriculum, and able to support conceptual understanding in an interesting way (Sukma et al., 2017).

Meanwhile, validation from media experts showed an overall average score of 90.5%, which is also categorized as very appropriate. The assessment covered two aspects: media engineering and visual communication. The media engineering aspect received an average score of 90%, reflecting structural suitability, presentation consistency, and ease of use. The visual communication aspect received an average score of 91%, indicating that the media is visually appealing, easy to read, and able to convey learning messages clearly.

Thus, the research results show that the UNO Physics card media has met the eligibility requirements both from an academic and technical perspective, and can be used in the learning process.

2. Results of Small Group Trials

A small group trial was conducted on five second-semester Physics Education students. Three aspects were assessed: media engineering, visual communication, and learning aspects. The results at this stage showed that the media achieved an average score of 94%, which is considered very appropriate. The media was assessed for its appearance and technical aspects, as well as the clarity of the content. The trial participants also provided constructive feedback for improving the media before its wider implementation (Harefa, 2021) .

3. Results of Field Group Trials

A field trial was conducted on 19 students at Methodist 7 Medan Private High School. The assessment showed that the learning media obtained an average score of 91%, categorized as very feasible. The results of this study indicate that the UNO Physics card media is not only technically and visually feasible, but also effective in increasing student engagement and understanding. Students felt more interested and involved in learning physics, and considered this media helped them understand the material more easily (Astutik et al., 2019).

4. Increasing Student Learning Motivation

One of the main focuses of this study was to determine the effect of media use on student learning motivation. Based on questionnaire data distributed before and after learning, the results showed that the average student motivation before using the media was in the moderate category, namely 65.18%, and increased to 89% after using the media, with a very high category (Mustakim et al., 2020). All motivation indicators, such as perseverance, interest in the lesson, enthusiasm for independent learning, and the ability to face challenges, experienced an increase. These results indicate that the developed media is able to create more interesting, enjoyable learning, and encourage active student involvement (Hayati et al., 2017).

5. Relevance of Research Results to Objectives

Based on all the results obtained from the validation, trial and evaluation stages of learning motivation, it can be said that this research has succeeded in achieving its objective, namely developing appropriate and effective learning media to increase students' learning motivation.

CONCLUSION

Based on the results of the research and discussions that have been carried out, the following conclusions can be drawn:

1) The UNO Physics card learning media developed was declared highly suitable for use in physics teaching on heat. This was demonstrated through validation by material and media experts, with feasibility scores of 89.5% and 90.5%, respectively.
2) A small group trial of five students yielded an average score of 94%, categorized as very appropriate. The media was deemed engaging, practical, and easy to use.
3) A field trial conducted with 19 high school students also yielded positive results, with an average score of 91%. The media was deemed effective in capturing student attention, increasing engagement, and facilitating comprehension.
4) Based on the learning motivation questionnaire, there was a significant increase from the moderate category (65.18%) to very high (89%) after using the media. All motivation indicators increased.
5) The results of this study indicate that the UNO Physics cards are effective in improving the quality of physics learning. This media provides a fun, interactive learning alternative that encourages active participation and student motivation.

Suggestion

1) For teachers, this media can be used as an alternative in teaching physics, especially to increase student interest and involvement.
2) For students, the use of this media is expected to increase enthusiasm for learning and help them understand the material in a more enjoyable way.
3) For future researchers, it is recommended to develop similar media on other materials or subjects, and to conduct trials with a larger number of respondents so that the results are more representative.
4) For schools, it is hoped that they can support the use of innovative learning media as part of a strategy to improve the quality of learning

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