INTEGRATION OF ARTIFICIAL INTELLIGENT IN CANVA PLATFORM AS INNOVATIVE MEDIA FOR PHYSICS LEARNING

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ABSTRACT

Digital transformation in education presents various innovations, one of which is the use of Artificial Intelligence in learning media. Physics, as a subject full of abstract concepts and complex visualizations, requires a creative and interactive approach to be better understood by students. This study aims to examine the effectiveness of the integration of AI features in the Canva platform as an innovative media for learning physics. The method used is quantitative descriptive, involving 36 physics education students as respondents who have used AI-based Canva in the teaching and learning process. The data collection instrument was a questionnaire consisting of demographic items, intensity of use of AI features, and obstacles faced during utilization. The results show that features such as Magic Write, Text-to-Image, Design Suggestions, and AI Animation are able to help students visualize abstract concepts, increase the efficiency of open material design, and maximize the creativity of content quantity. However, obstacles are still found in the form of limited internet networks (22.2%), low digital literacy (22.2%), and AI features that do not fully support the context of physics science (13.9%). The success of this technology integration is greatly influenced by the readiness of the infrastructure and user competence. Canva AI is a potential and affordable solution for visual-based physics learning, but it needs to be supported by digital literacy training, equal access to technology, and the development of features that are more specific to the needs of science education.

Keywords : *Physics Learning, Artificial Intelligence, Canva, Education, and Technology*

INTRODUCTION

The development of information and communication technology has a major impact on many aspects of life, including in the field of education. The existence of innovation, especially in the field of educational technology, has driven changes in the learning process into a more interactive, flexible and student-oriented model. According to Jamil et al., (2024) the integration of technology for education not only improves understanding of complex concepts, but also motivates students through more authentic and relevant learning experiences to the real world. Technology is not only a tool, but also an important part of preparing modern learning strategies. Therefore, optimal use of technology is needed to achieve adaptive education in accordance with the requirements of the digital era.

Amid these challenges, artificial intelligence (AI) or commonly abbreviated as AI is present as a potential solution to support the learning process. Artificial Intelligence (AI) is a term from Industrial Society 4.0 and Society 5.0 which is a "computer program, machine learning, hardware and software". The science used to build intelligence uses hardware and software solutions inspired by the reverse engineering of the neutron patterns that work in the human brain. This Industry 4.0 product is widely used in various industries, including education, for its development and daily life applications Zahara et al., (2023). AI itself offers various capabilities, such as automatic data processing, learning pattern analysis, and content development based on individual needs. One of the relevant implementations of AI in the context of education is its integration into graphic design platforms such as Canva.

Canva is a very popular design platform today. Canva is a design application that uses drag and drop techniques and can access several existing features such as fonts, images, and shapes during the creation process (Isnaini et al., 2021). Canva has a blank page that can help creators create designs about the desired learning process. Not only can you create designs from scratch, for beginners who are not familiar with designing, Canva provides a variety of finished designs without having to start from a blank page. The available tools can facilitate the design and animation process. Another advantage of Canva is that it can be used directly in a web browser without having to install the application (Citradevi, 2023).

The Canva platform has evolved along with technological developments so that it has many feature updates in it. These updates are in the form of various AI-based features, including Magic Write for automatic text generation, to generate automatic text, Text-to-Image for concept visualization based on text commands, and Design Suggestions and AI Animation that support content compilation for concept visualization based on text commands, and Design Suggestions and AI Animation that support the compilation of interactive and aesthetic visual content.

The use of AI features in Canva itself has become an increasingly popular trend among educators and students. This platform is considered capable of facilitating the preparation of learning materials, including physics materials, more efficiently and interestingly. Based on research conducted by Wijaya et al (2025), 89% of participants stated that the AI features in Canva were easy to understand and use, 81% of participants stated that the AI features in Canva were beneficial and relevant to the needs of participants, namely to create learning media, and 97% of participants stated that they would further utilize the AI features in Canva, especially in creating learning media. Therefore, this scientific study was compiled to determine the extent to which the effectiveness of the Canva AI feature in supporting physics learning is still limited. On the other

hand, eliminating challenges and obstacles in the use of this technology also needs to be considered so that its use can be more optimal.

METHOD

This study uses a quantitative descriptive approach that aims to obtain an empirical picture of the use of artificial intelligence (AI) features on the Canva platform in supporting the physics learning process. The subjects of the study consisted of physics education study program students who had used Canva, especially for the use of AI-based features, in the context of physics teaching and learning activities. The sampling technique was carried out using purposive sampling by considering the involvement of respondents in using Canva as a learning medium. The instrument used was a questionnaire consisting of three main parts, namely demographic data, data on the use of Canva's AI features in physics learning, and the challenges or obstacles faced. This questionnaire contains multiple-choice items, Likert scales, and open-ended questions to collect information quantitatively and qualitatively. The data obtained were analyzed descriptively using simple statistical techniques, such as percentages and frequencies, to identify patterns of use and user perceptions of the effectiveness of AI-based Canva in the context of physics learning. The results of the analysis are presented in narrative and visual form (tables or diagrams) to strengthen the interpretation of the phenomena being studied.

RESULTS AND DISCUSSIONS

The results of distributing questionnaires to 36 physics education student respondents showed that the majority of them had utilized Artificial Intelligence (AI)-based features in Canva to support the learning process. In particular, AI features such as Magic Write, Text-to-Image, Design Suggestions, and AI Animation offer the ability to simplify the development of learning materials, visualize complex physics concepts, and create interactive and engaging visual content. This finding is important because it addresses a major challenge in physics education: the difficulty in visualizing abstract concepts. AI features in Canva provide a means to create more accessible and engaging representations of these concepts.

The use of the Canva AI platform can be seen in terms of its effectiveness based on the results of the questionnaire distribution which can be seen in the diagram below.

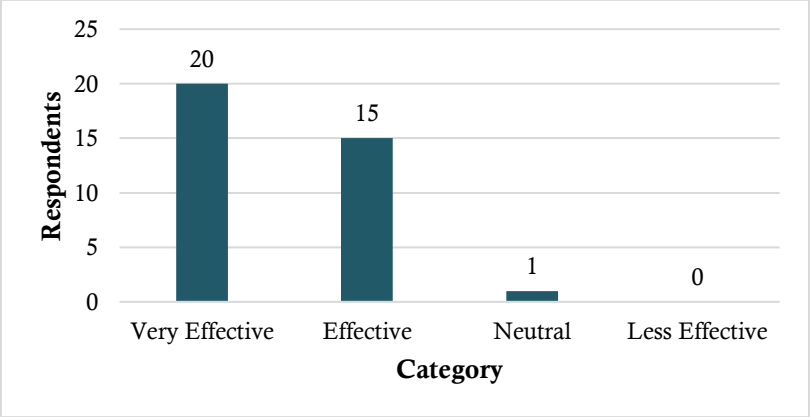


Figure 1. Canva AI Usage Effectiveness Diagram (resource : research data)

Based on the diagram above, it can be obtained information that the effectiveness of using Canva AI in physics learning is 20 people choosing very effective and 15 people choosing effective and the rest choosing neutral from a total of 36 respondents. This can be said that the use of Canva AI is very effective.

The effectiveness of using Canva AI can be explained theoretically through multimedia learning theory according to (Nurannisaa, 2017) that with visual learning, new concepts are more precise and easier to understand when associated with previous knowledge. In this case, Canva AI provides various features that support multimedia learning, such as automatic infographic creation, visualization of physics concepts through text-based images (text-to-image), and Magic Write which can help explain material in simpler language. This integration has the potential to strengthen students' understanding of physics materials that tend to be abstract and difficult to understand verbally alone. In addition to the features mentioned earlier, Canva still has many AI supporting features, even more than 20 features available. However, access to these AI features is not all free, but requires a Professional account to access all of these features. Here is a display of Canva's AI-based features.

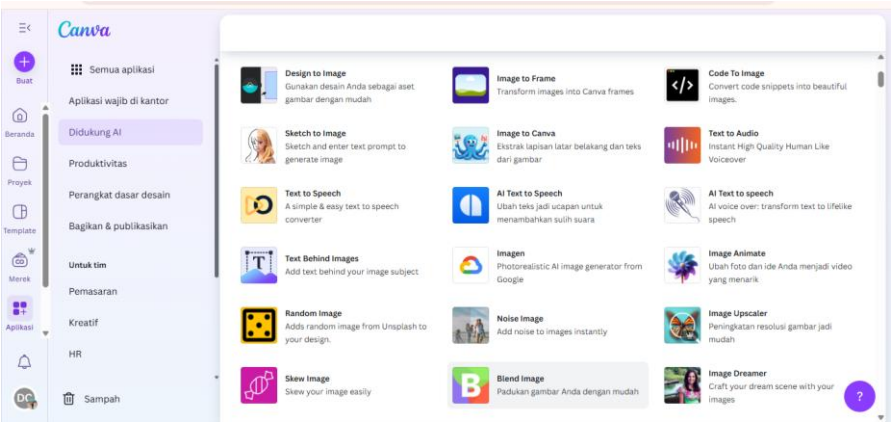


Figure 2. Canva AI Platform
(resource: author's Canva account)

In addition, Canva AI also has advantages in terms of efficiency and creativity. Students feel helped in compiling presentation materials, creating educational posters, to designing sheets and aesthetics with just simple text instructions. This feature will certainly make it easier for students to convey physics concepts, such as Newton's laws, friction, or the concept of energy, in the form of visuals that are easily understood by other audiences, including school students. With the help of this technology, students can present experiments, natural phenomena, or laws of physics in the form of more interesting and communicative visual narratives, even in a relatively short time. The speed in producing informative and accurate designs makes Canva AI a practical solution in creating project-based learning media and independent student assignments.

The use of Canva AI in physics learning provides new opportunities in developing interesting, interactive, and easy-to-understand learning media. Canva AI is able to help users produce visual designs, infographics, and simple animations that can explain abstract physics concepts. However, survey results show that not all users can utilize this feature optimally. Major challenges arise from the technical and non-technical aspects that are interconnected in the process of using it.

Table 1. Percentage of challenges using Canva AI

Challenge Category	f	%
No challenge	10	27,8
Internet connection problems	8	22,2
Limited skills or knowledge	8	22,2
Limitations of AI features	5	13,9
Combination	5	13,9
Total	**36**	**100**

One of the most dominant obstacles is the internet connection problem experienced by 22.2% of respondents. Canva AI is a cloud-based platform, so access to its features is highly dependent on network stability and speed. In practice, an unstable connection can hinder the design process, slow down access to AI features, and even cause data loss during the work process. This obstacle is in line with research conducted by Resmini et al., (2021) Canva which cannot be used offline, so users need a data package to use the Canva application. In the context of physics, this disruption can reduce the effectiveness of using digital media, especially when used for a limited time such as during presentations or presentations of learning in class.

Another equally big challenge is the limited skills or knowledge in operating Canva AI, which is also experienced by 22.2% of respondents. Many users, especially in educational settings, do not yet have a thorough understanding of how AI works in Canva and how to maximize its functions to compile physics learning materials. This has an impact on reduced creativity in design and difficulty in conveying scientific concepts visually. In fact, physics materials such as Newton's laws, electric fields, or optics require proper visualization so that students can conceptually understand the relationship between variables.

In addition, the limitations of AI features felt by 13.9% of respondents indicate that not all user needs in the context of science learning can be accommodated by this platform. AI in Canva tends to produce general content, so that it is sometimes not in accordance with a specific scientific context. For example, illustrations of force vectors or parabolic trajectories in two-dimensional motion require scientific understanding that cannot be generated automatically by AI. Therefore, users still need to master the concept of physics and have manual editing skills to perfect the design results.

There are also 13.9% of respondents who experience several combinations of challenges at once, such as limited connections, skills, and features. This shows that the challenges in using Canva AI are multidimensional and cannot be solved with a single approach. This complexity requires more systematic intervention, either through improving digital infrastructure, user training, or developing AI features that are more adaptive to the needs of the science education sector.

On the other hand, 27.8% of respondents stated that they did not experience any significant challenges in using Canva AI. This reflects that some users already have adequate access and sufficient skills to optimize AI features in learning activities. This group is proof that with the right support, Canva AI can act as an innovative medium in delivering physics material effectively. Therefore, it is important for educational institutions to provide equal access and training, so that the use of this technology can be felt evenly by all educators and students.

CONCLUSIONS

The results of this study indicate that the integration of artificial intelligence (AI) features in the Canva platform provides a significant contribution to the effectiveness of physics learning. Features such as Magic Write, Text-to-Image, Design Suggestions, and AI Animation have been proven to support the transformation of abstract physics material into more concrete, interactive, and easy-to-understand visual representations. In addition, the use of AI in Canva also increases students' efficiency and creativity in designing learning media.

However, this study also identified a number of challenges that need to be considered, including limited internet connectivity, lack of digital user literacy, and the suboptimal AI features in meeting the specific needs of science learning. These findings indicate that the success of implementing AI technology in education is highly dependent on the readiness of infrastructure and user competence. Therefore, strategic interventions are needed in the form of structured digital training and the development of AI features that are more adaptive to the scientific context. Overall, Canva AI has the potential to be an innovative and affordable medium in supporting more contextual and meaningful physics learning in the digital era.

ACKNOWLEDGMENTS

Thank you to all parties who have supported the research entitled "Integration of Artificial Intelligence in the Canva Platform as an Innovative Media for Physics Learning". Our special appreciation goes to Mr. Jules Nurhatmi, M.Pd. as a lecturer in charge of the Multimedia Design course who has provided valuable guidance in developing learning media. We also thank our colleagues in the Physics Education Study Program for their contributions in data collection and scientific discussions that enrich this research.

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