

UTILIZATION OF CHATGPT–OPENAI AS AN INNOVATIVE LEARNING MEDIUM FOR PROSPECTIVE MI/SD TEACHERS

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Abstract

The development of artificial intelligence (AI) technology brings great opportunities for innovation in learning media in higher education. ChatGPT–OpenAI, as one of the AI-based applications, can be utilized by prospective MI/SD teachers to create more interactive and creative learning experiences. This study aims to analyze the use of ChatGPT as an AI-based learning media innovation in improving the quality of student learning. The research method used is descriptive qualitative through observation and interviews with students who use ChatGPT in their learning activities. The results of the study show that the forms of innovation developed include: (1) the use of ChatGPT as a text-based virtual learning assistant, (2) conversation simulations through role play and storytelling, (3) the creation of automatic infographics to support concept understanding, and (4) application in the Project Based Learning (PBL) model. These innovations help students understand the material in depth, foster creativity, and increase learning motivation. Thus, ChatGPT–OpenAI has proven to be an effective and relevant AI-based learning medium for prospective MI/SD teachers.

Keywords: ChatGPT–OpenAI; learning media innovation; artificial intelligence (AI); prospective MI/SD teachers; Project Based Learning (PBL)

INTRODUCTION

The rapid development of digital technology has brought significant changes in various aspects of life, including education. One technological innovation that is currently in the spotlight is artificial intelligence (AI) (Fikriya dkk., 2025). The presence of AI offers great opportunities for improving the quality of learning through the use of interactive, adaptive, and efficient technology-based media. In the context of higher education, especially for prospective Madrasah Ibtidaiyah (MI) or Elementary School (SD) teachers, the ability to adapt to technological developments is one of the important competencies that must be possessed in order to be able to create a learning process that is relevant to the needs of the times (Husna dkk., 2023).

One form of AI-based innovation that is widely used in education is ChatGPT–OpenAI. ChatGPT is an AI-based language model that can generate text, answer questions, provide explanations, and interact contextually like a virtual assistant. In education, ChatGPT can serve as an innovative learning medium because it supports critical thinking, creativity, and students' digital literacy skills (SAYUTI dkk., 2025). Through the integration of ChatGPT into learning activities, prospective MI/SD

teachers not only act as technology users, but also as innovators who utilize technology to create more meaningful learning experiences.

Several previous studies have highlighted the role of AI in education. For example, research by (Isnain, 2025) shows that the use of AI in learning can improve teaching effectiveness through personalized materials and automated feedback. In addition, research conducted by (Tasya & Dwinta, 2025) emphasizes that the integration of ChatGPT in language and literacy learning can improve students' analytical thinking skills. However, studies that specifically examine the use of ChatGPT–OpenAI as an innovative learning medium for prospective MI/SD teachers are still very limited. This is the research gap in this study.

This study attempts to fill this gap by analyzing how ChatGPT–OpenAI is utilized by prospective MI/SD teachers as an AI-based learning media innovation. The main focus of this study is to identify the forms of innovation developed, the benefits perceived by students, and its relevance to improving the quality of learning. (Widyastuti, 2024) Thus, this study is expected to contribute scientifically to the development of innovative learning models in the digital age, while enriching the literature on the use of AI in basic education and teaching.

METHOD

This study uses a qualitative descriptive approach that focuses on a deep understanding of the phenomenon of ChatGPT–OpenAI utilization as an innovative learning medium among prospective MI/SD teacher students. This approach was chosen because it allows researchers to explore students' experiences, perceptions, and strategies in integrating artificial intelligence technology into learning activities.

Research Design

This research design is descriptive in nature, with the aim of describing in detail how ChatGPT–OpenAI is used as a learning medium. The researcher did not manipulate the variables, but focused on observing and analyzing student learning activities involving the use of ChatGPT. This design is relevant because it provides a realistic picture of the application of AI in learning and the innovations that arise naturally from prospective teacher students.

Research Subject

The subjects in this study were students of the Madrasah Ibtidaiyah Teacher Education Study Program (PGMI) at the Teungku Dirundeng Meulaboh Islamic College, West Aceh. A total of 20 fifth-semester female students were selected purposively because they had actively used ChatGPT in completing academic assignments, designing learning media, and participating in Project-Based Learning (PBL) activities. Purposive selection of subjects was carried out so that the data obtained was relevant and in line with the research objectives.

Data Source

The main data sources in this study came from direct observations of student learning activities and in-depth interviews to obtain information about their experiences

using ChatGPT. In addition, the researchers also documented student work, such as learning media designs, automated infographics, and PBL projects developed with the help of ChatGPT. Data collection was carried out over a period of one month, covering classroom activities, discussions, and field practice.

Data Analysis

The data were analyzed using the Miles and Huberman (1994) model, which consists of three stages: data reduction, data presentation, and drawing conclusions (Juanda, 2019). In the reduction stage, researchers select data that is relevant to the research focus. The data is then presented in the form of descriptive narratives to reveal patterns of ChatGPT utilization in learning. The final stage is drawing conclusions by verifying the findings against previous theories and research. The validity of the data is strengthened through triangulation of sources and techniques, namely by comparing the results of interviews, observations, and documentation.

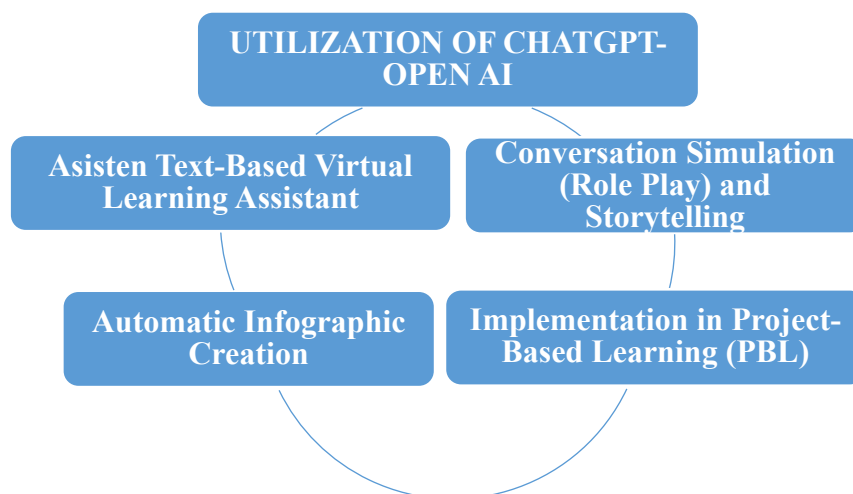
FINDINGS

A. Learning Media Innovations in the Use of ChatGPT–OpenAI

The development of artificial intelligence technology has provided new opportunities in the world of education, including in the learning of prospective MI/SD teachers. Based on the results of observations and interviews with PGMI STAIN Teungku Dirundeng Meulaboh students, various forms of learning media innovations were found to have emerged through the use of ChatGPT–OpenAI. Students not only use ChatGPT as a tool to search for information, but also develop it into creative, interactive, and contextual learning media. These innovations are clear evidence that ChatGPT can serve as a digital learning partner that helps students in the process of critical thinking, problem solving, and modern and effective learning design.

This form of innovation can be illustrated through the following diagram:

Diagram 1. The Use of ChatGPT–OpenAI as an Innovative Learning Medium



Based on the diagram above, the forms of ChatGPT–OpenAI utilization in the learning process of prospective MI/SD teachers can be described as follows

1. Asisten Text-Based Virtual Learning Assistant

Students utilize ChatGPT as a virtual assistant that helps them understand material, find references, and compile academic assignments. ChatGPT is used to explain complex concepts such as learning theory, PBL approaches, and teaching strategies in elementary schools. In addition, students also use ChatGPT to create sample lesson plans, question outlines, and concept comprehension exercises (Paat dkk., 2024). This utilization makes students more independent in learning and able to think critically about the information they obtain. ChatGPT also provides quick feedback, making the learning process more efficient.

2. Conversation Simulation (Role Play) and Storytelling

The second form of innovation is the use of ChatGPT for interactive conversation simulations. In this case, students practice being teachers, while ChatGPT acts as the student. Through contextual conversation features, students practice their pedagogical communication skills and the use of polite, friendly, and educational language (Widowati dkk., 2024). In addition, ChatGPT is also used in storytelling to develop students' ability to compose learning narratives. Students can ask ChatGPT to create educational stories that are relevant to the learning themes in MI/SD, such as the values of honesty, responsibility, and cooperation. As a result, students become more creative in creating a fun and inspiring learning atmosphere (Yaldi, 2025).

3. Automatic Infographic Creation

The use of ChatGPT is also evident in students' ability to create automated infographics that support their understanding of learning concepts. ChatGPT is used to help organize ideas, determine key points, and provide visualization suggestions, which are then processed using design applications such as Canva or PowerPoint. For example, when students create learning media about the "Water Cycle" or "Indonesian Cultural Diversity," ChatGPT provides text and narrative structures that are then translated into visual infographics. The results are learning media that are interesting and easy for elementary school students to understand.

The following image shows an example of an activity carried out by prospective MI/elementary school teachers when utilizing ChatGPT–OpenAI in the project-based learning process. In this activity, students use ChatGPT to produce digital learning media designs with the theme "Thematic Learning Based on the Natural Environment." This image shows how ChatGPT is used to help design ideas, create text descriptions, and compile integrated learning steps.



Figure 1. Prospective MI/SD teachers using ChatGPT–OpenAI in designing interactive learning media

This activity illustrates ChatGPT's role as a virtual assistant in facilitating students' creative thinking processes. Based on observations, interactions between students and ChatGPT not only increase work efficiency but also enrich innovative ideas in the development of learning media. This is in line with the findings (Anggraini dkk., 2025) (Najichah dkk., 2025) which states that the use of AI in learning can encourage the formation of higher order thinking skills.

4. Implementation in Project-Based Learning (PBL)

The latest innovation discovered is the use of ChatGPT in the Project Based Learning (PBL) model. Students utilize ChatGPT to assist in every stage of the project, from planning, searching for data sources, compiling reports, to reflecting on the results of the activities. With the help of ChatGPT, students can develop research-based and collaborative learning projects. For example, in projects such as “Creating Digital Pop-Up Books” or “Interactive Educational Videos,” ChatGPT provides conceptual ideas, steps for implementation, and assistance in preparing presentation scripts. This innovation has been proven to improve students' critical thinking, responsibility, and creativity in designing authentic learning activities (Al Azzis & Kurnia, 2024).

B. Opportunities and Challenges of ChatGPT–OpenAI in Learning for Prospective MI/SD Teachers

The use of ChatGPT–OpenAI in education provides great opportunities for developing the competencies of prospective MI/SD teachers. This technology not only serves as a learning aid, but also opens up space for innovation and renewal in educational practices. Through the integration of ChatGPT into learning activities, students can develop critical thinking skills, digital literacy, and technology-based pedagogical skills needed in the era of the 5.0 industrial revolution.

1. Opportunities for Utilizing ChatGPT–OpenAI

Research results show that ChatGPT provides various positive opportunities in the learning process for prospective MI/SD teachers.

a. Improving learning effectiveness and efficiency

The use of ChatGPT helps students obtain information, ideas, and solutions quickly and relevantly. This technology makes it easier for students to complete academic assignments and develop learning media. These findings are in line with research by (Sakti dkk., 2024) which confirms that ChatGPT can accelerate the research learning process through real-time feedback and contextual ideas.

b. Encouraging creativity and innovation in learning design

ChatGPT enables PGMI students to produce more varied learning media, such as interactive videos, thematic stories, and digital simulations. This is in line with research (Rhomadoni dkk., 2025) and (Hasniyati dkk., 2024) which states that generative AI can enhance teachers' creativity in designing contextual and engaging learning experiences for elementary school students.

c. Strengthening collaborative and reflective skills

In project-based learning, ChatGPT is used as a discussion tool for brainstorming ideas, drafting scripts, and evaluating group work. These findings are supported by research (AM dkk., 2025) which shows that the use of AI can improve the collaborative and reflective abilities of prospective teacher students.

d. Improving digital literacy and teacher professional readiness

Students who are accustomed to using ChatGPT demonstrate an adaptive attitude toward technological developments and are able to integrate AI into their learning strategies. This is in line with research (Rahmawati dkk., 2025) which confirms that teachers with good digital literacy tend to be more creative and ethical in utilizing technology in the classroom.

2. Challenges in Using ChatGPT–OpenAI

Despite its many benefits, the study also found a number of challenges in using ChatGPT as a learning medium for prospective MI/SD teachers.

a. Dependence on Technology

Based on the findings of this study, some prospective MI/SD teachers showed a tendency to rely on ChatGPT outputs without double-checking them. This condition weakens critical thinking because students only receive information instantly. This finding is consistent with research according to (Dulay, 2024) which refers to this phenomenon as the AI dependency effect, a situation where users place too much trust in AI system results without verifying the information.

b. Validity and Accuracy of Information

The results of this study also show that some students found information from ChatGPT that was not in line with the MI/SD curriculum context. This requires

students to have digital literacy in assessing and filtering information. This finding is in line with research (Anggraini et al., 2025) which states that information literacy skills are very important for students to be able to distinguish between accurate and inaccurate information when using digital technology.

c. Ethics and Academic Integrity

From the results of the study, students still face challenges in maintaining academic integrity when using ChatGPT. Some students tend to copy answers without developing their own ideas. This is reinforced by Research (Ayeni dkk., 2024) emphasizes that the use of generative AI must be balanced with an understanding of digital ethics, so that students do not fall into plagiarism and remain capable of independent thinking. (Nurhayati dkk., 2025) highlights the importance of training and mentoring for lecturers so that they are able to integrate AI technology into the lecture curriculum in a constructive manner.

3. Synthesis of Opportunities and Challenges

Based on the results of research and literature review, it can be concluded that ChatGPT–OpenAI has great potential to improve the quality of learning in MI/SD teacher education environments. However, its successful utilization greatly depends on the balance between technological innovation and ethical awareness. Students need to be encouraged to use ChatGPT creatively, not passively; reflectively, not instantaneously.

With guidance from lecturers and the strengthening of digital literacy, ChatGPT can function as an AI-based learning medium that fosters critical, innovative, and character-building thinking skills. Conversely, without supervision and academic ethics, this technology can lead to dependence and a decline in the quality of learning.

C. Advantages and Disadvantages of Using ChatGPT–OpenAI in the Learning of Prospective MI/SD Teachers

a. Increasing efficiency in the preparation of learning media

The use of ChatGPT makes the process of preparing worksheets, infographics, and storytelling materials faster and more structured. Students no longer have to start from scratch, as ChatGPT can provide an initial outline, format options, and sample materials that can be directly adapted to the needs of MI/SD students. Thus, the time usually spent searching for references can be redirected to deepening content or enriching learning strategies. This is in line with the findings (Ali dkk., 2024) which states that generative AI can accelerate the process of creating learning content while supporting differentiation in teaching.

b. Encouraging creativity and variety in learning ideas

Prospective teachers feel more assisted in finding new ideas when using ChatGPT. This technology not only provides sample materials, but also offers a variety of learning models, classroom activity strategies, and creative ideas that may not have been previously considered. This process helps students to be more exploratory and daring in trying new approaches to MI/elementary school learning. These findings are reinforced by (Gasaymeh dkk., 2025) which shows that ChatGPT can stimulate student creativity through interaction and the emergence of alternative ideas.

c. Improving the digital literacy of prospective teachers

The use of ChatGPT makes students more familiar with digital technology, especially in assessing information, utilizing AI features, and understanding how automated systems work. This skill is very important for prospective MI/SD teachers, given the demands of modern education that increasingly emphasize the integration of technology in learning. Research (Ali dkk., 2024) also emphasizes that the application of AI in academic activities can strengthen students' digital readiness in facing the technology-based learning revolution.

d. Developing critical and evaluative thinking skills

When ChatGPT is used correctly—for example, by testing arguments, asking for additional explanations, or comparing several versions of answers—students become more trained to think critically. They learn to evaluate answers, identify shortcomings, and ensure that the material is appropriate for MI/elementary school students. This is in line with research (Abbas dkk., 2024) which states that active interaction with ChatGPT can improve students' analytical and reflective skills.

2. Disadvantages of Using ChatGPT–OpenAI

a. Risk of technological dependence in completing tasks

One of the biggest challenges is the tendency for students to rely on ChatGPT to complete tasks instantly. This dependence can weaken independent thinking skills, as students tend to accept answers without further analysis or development. If left unchecked, this condition can hinder the development of creativity and pedagogical skills in prospective teachers (Bengueddach & Boudia, 2024) also highlights that the use of AI without reflection can have a negative impact on the formation of student learning independence

b. Limitations in the accuracy and relevance of information to the local context

Although ChatGPT is capable of generating comprehensive answers, it does not always provide information that is accurate or relevant to the MI/SD curriculum in Indonesia, especially regarding Islamic educational values or student character. Because ChatGPT does not have a deep understanding of the local context, students need to conduct additional verification through scientific literature.(Maita dkk., 2024) Generative AI models do have limitations in terms of information validity, so users must remain cautious when using them.

c. Challenges related to ethics and originality in academic work

Some students still use ChatGPT to generate text directly without understanding the content or adapting it to the appropriate academic style. This practice risks undermining academic integrity as it is considered a form of generative plagiarism. (Fajt & Schiller, 2025) highlight that although many students see the benefits of ChatGPT, there are real concerns about potential misuse and plagiarism. In addition, (Ortiz-Bonnin & Blahopoulou, 2025) found that perceptions of the risk of plagiarism and academic dishonesty are associated with a reduction in the intention to use ChatGPT among students. In the ethical realm, research (Pérez-Portabella dkk., 2025) states that unethical use of AI (e.g., submitting AI-generated text as one's own work without modification) violates academic contracts and can damage institutional integrity. From a policy perspective, a literature review (Khalida dkk., 2025) emphasizes that many institutions do not yet have strong AI guidelines and need to strengthen digital literacy and academic integrity policies to prevent misuse. Therefore, it is important to instill digital ethics and oversight mechanisms in the use of ChatGPT so that students not only copy but also process information independently and responsibly.

Overall, the use of ChatGPT–OpenAI has considerable advantages, especially in helping students to be more efficient, creative, and skilled in using digital technology to develop various learning media. This technology can also encourage new ideas and improve the critical thinking skills of prospective MI/SD teachers. However, despite its advantages, there are several drawbacks that need to be considered, such as the risk of technological dependence, the potential for inaccurate information, and academic ethical challenges that can affect the originality of students' work. Therefore, the use of ChatGPT must be balanced with source verification, in-depth understanding, and ethical attitudes in the academic process.

Findings Sub-section

Interviews conducted with students participating in the study provided a deeper insight into how they use ChatGPT as an innovative learning tool. Most students admitted that ChatGPT helped them understand the material and find new ideas for teaching. The following is an excerpt from an interview with one of the participants who actively uses ChatGPT in their college assignments:

Researcher: How does ChatGPT help you in designing learning media for elementary school children?

Student: ChatGPT is very helpful, sir. When I was confused about determining the theme and content of learning activities, I asked ChatGPT, and it gave me ideas that were in line with the curriculum and the characteristics of elementary school students.

Researcher: Do you just use the answers, or do you modify them?

Student: I modify them, sir. So I use ChatGPT as an initial reference. I change the language to suit the students' characteristics and the Islamic values we learn at the university.

Researcher: What do you feel most from using ChatGPT in learning?

Student: More motivated, sis. Because I can create interesting learning media without having to think too long about the concept from scratch.

This interview shows that students do not rely entirely on ChatGPT, but rather use it as a thinking tool to develop creative ideas. This experience also demonstrates an increase in students' digital literacy and adaptability to new technologies in the context of basic education. These qualitative findings reinforce the observational results that ChatGPT functions effectively as a support for innovation-based learning. Its use helps students become more independent in their learning, more confident in exploring ideas, and better prepared to face the challenges of the teaching profession in the future, which demands mastery of AI-based learning technology.

DISCUSSION

The results of the study indicate that the use of ChatGPT–OpenAI encourages prospective MI/SD teachers to produce various forms of innovative learning media. These findings indicate that ChatGPT not only functions as a tool for completing assignments but also as a catalyst that strengthens creativity, independent learning, and the ability to design learning media that is relevant to students' needs.

This interpretation is in line with the research objective, which is to understand how artificial intelligence can improve students' pedagogical competence. Through the use of ChatGPT, students acquire new mechanisms for developing ideas, compiling learning scenarios, and designing more interesting teaching materials.

The findings of this study are consistent with the results of a study (Munaye dkk., 2025) which showed that ChatGPT improves the learning effectiveness and creativity of students. Students' ability to use ChatGPT for storytelling, text assistance, and infographics reinforces the evidence that AI technology can support project-based and collaborative learning. Similar to the findings (Asad dkk., 2024) this study also shows an increase in academic efficiency and critical thinking skills, although some students still need guidance so they don't rely too much on technology. The study (Ismadi & Fauzi, 2024) further reinforces these findings by showing that teachers feel more efficient when using ChatGPT in the learning process. Meanwhile, research (Mai dkk., 2024) mentions that ChatGPT has advantages in terms of accessibility and flexibility, but still requires strong digital literacy to avoid misinformation and maintain academic integrity.

Unlike previous studies that focused on teachers or students in general, this study makes a specific contribution to the context of prospective MI/SD teachers. The results show that ChatGPT plays a direct role in helping students develop their skills in:

1. designing AI-based learning media,
2. integrating technology into PBL learning,
3. storytelling and pedagogical communication,
4. and producing educational infographics.

The use of ChatGPT has positive implications for the development of prospective teachers' competencies, especially in terms of developing innovative learning media that are relevant to the characteristics of MI/SD students. ChatGPT helps students develop ideas, accelerate the learning design process, and provide alternative media that are interesting. This is important for strengthening creative learning in elementary schools, which requires visual, contextual, and communicative approaches. In addition, students' ability to modify ChatGPT's answers demonstrates the emergence of critical awareness and reflective attitudes, which are core competencies in the teaching profession in the digital age.

Although it has a positive impact, the use of ChatGPT is not without challenges. Some students still tend to accept AI answers at face value without further verification or revision. In addition, the risk of misinformation and weak digital literacy skills can affect the quality of the learning media produced. Therefore, the role of lecturer guidance and the strengthening of the digital literacy curriculum for prospective MI/SD teachers is needed.

Overall, the use of ChatGPT–OpenAI has proven to have a positive impact on the learning process of prospective MI/SD teachers. These findings reinforce the evidence that the integration of artificial intelligence can enhance students' creativity, independence in learning, and pedagogical abilities. On the other hand, the results of this study emphasize the need for academic guidance to ensure that the use of AI technology remains ethical, accurate, and relevant to the needs of basic education.

CONCLUSION

Based on the results of this study, the use of ChatGPT–OpenAI has been proven to contribute significantly to the development of innovative learning media for prospective MI/SD teachers by strengthening creativity, digital literacy, and pedagogical skills relevant to the demands of modern education. This technology not only functions as a virtual assistant but also acts as a catalyst for learning through simulations, infographic creation, and support for the Project Based Learning model. These findings advance knowledge in the field of teacher education by showing that artificial intelligence can be effectively integrated into the learning design process at the elementary level. The practical implication is the need for academic assistance and strengthening digital literacy so that the use of ChatGPT remains critical, valid, and ethical. Further research could explore the effectiveness of AI use in direct teaching practices in MI classrooms as a further development of this study.

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