LEARNING IMPLEMENTATION USING CHATGPT MEDIA AT SMA NEGERI 1 SUKABUMI

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ABSTRACT

This paper describes the use of ChatGPT in learning. The research is a qualitative descriptive study with a case study at SMA Negeri 1 Sukabumi in West Java Province Indonesia. The research begins with a survey, which involves the distribution of questionnaires to 13 learning subject teachers in grade 10 and 69 tenth-grade students who were selected randomly. The questionnaire results were analyzed as a basis for further research, including in-depth interviews, observations, and document studies. Classroom observations were carried out on two teachers who have implemented learning using ChatGPT. To deepen the results of the observations, interviews were distributed to the two teachers and three students who were randomly selected from the observed classes. The research findings indicate that learning using ChatGPT can assist teachers in preparing and directing students in the teaching and learning process. With teacher guidance, students are expected to gain knowledge more comprehensively and deeply by asking specific questions that align with learning objectives. The teacher's competence to guide students in the use of ChatGPT in terms of n achieving learning objectives determines the achievement of learning outcomes from each student. ChatGPT, as one of the Artificial Intelligence (AI) technologies, offers new challenges in the field of education. The research in this paper provides insights into how this AI technology can be utilized in classroom learning

***Keywords**: chatGPT, senior high school teacher and student, AI (artificial intelligence)*

IMPLEMENTASI PEMBELAJARAN DENGAN MENGGUNAKAN MEDIA CHATGPT DI SMA NEGERI 1 KOTA SUKABUMI

ABSTRAK

Artikel ini menggambarkan penggunaan *ChatGPT* dalam pembelajaran. Penelitian merupakan studi deskriptif kualitatif, dengan studi kasus di SMA Negeri 1 Kota Sukabumi, Provinsi Jawa Barat, Indonesia. Penelitian pendahuluan dimulai dengan survei, yang melibatkan penyebaran kuesioner kepada 13 guru mata pelajaran yang mengajar di kelas 10, dan kepada 69 siswa kelas 10 yang dipilih secara acak. Hasil kuesioner dianalisis sebagai dasar penelitian lebih lanjut, termasuk wawancara mendalam, observasi, dan studi dokumen. Observasi kelas dilakukan kepada dua guru yang pernah menerapkan pembelajaran menggunakan *ChatGPT*. Untuk memperdalam hasil dari observasi, maka dilakukan wawancara kepada kedua guru tersebut, serta kepada tiga siswa yang dipilih secara acak dari kelas yang diobservasi. Temuan penelitian menunjukkan bahwa pembelajaran menggunakan *ChatGPT* dapat membantu guru dalam mempersiapkan dan mengarahkan proses pengajaran dan pembelajaran. Dengan bimbingan guru, diharapkan siswa dapat memperoleh pengetahuan secara lebih cepat dan mendalam dengan diberikan pertanyaan-pertanyaan spesifik yang sejalan dengan tujuan pembelajaran. Kemampuan guru dalam membimbing siswa dengan penggunaan *ChatGPT* dalam mencapai tujuan pembelajaran menentukan pencapaian hasil belajar setiap siswa. *ChatGPT* sebagai salah satu teknologi Kecerdasan Buatan (AI), menawarkan tantangan baru dalam bidang pendidikan. Penelitian dalam artikel ini memberikan wawasan tentang bagaimana teknologi AI ini dapat dimanfaatkan dalam pembelajaran di kelas.

Kata Kunci: *chatGPT*, siswa dan guru sekolah menengah atas, AI (kecerdasan buatan)

INTRODUCTION

One of the demands of change and the challenges of the times in education is the rapid development of technology. Therefore, educational management must keep up with technological advancements to ensure that education is integrated into students' daily lives.

The development of technology is happening at a rapid pace, making it a concern for all parties, including the education sector, Afandi (2018).

The proliferation of educational applications at every level of education should assist teachers and students in conducting meaningful and enjoyable learning. These applications can take the form of educational content, such as instructional videos, practice exercises, and interactive games to enhance students' understanding of the subject matter. Examples of such applications include Quizizz, Kahoot!, Google Classroom, Quipper School, Brainly, Zenius, Duolingo, and others.

Digital-based learning in senior high schools (SMA) is crucial in the current digital era. Technology has influenced the way teaching and learning take place in schools, and digital-based learning has become an effective alternative in the learning process. However, according to Nikolopoulou (2016), the challenges of using ICT in the learning process consist of three aspects: lack of support, lack of confidence, and lack of equipment. The use of digital media in learning can increase students' motivation to learn, making them more enthusiastic in the learning process. This is in line with the findings of a study conducted by Setiawan et al. (2015), which stated that digital learning using interactive multimedia can improve students' achievement and activity, with 90.63% of students meeting the criteria of being actively engaged.

With the development of smartphones among the general population, particularly among students in Indonesia, the use of smartphones in learning has become a necessity. Although some may still doubt its effectiveness in learning, there is ample evidence to show that the use of smartphones in learning can bring significant benefits. However, the use of smartphones in learning also has the potential to disrupt the learning process if not used appropriately. Therefore, teachers and students must ensure that smartphones are used wisely and solely for learning purposes. Based on the research conducted by Mulyana et al. (2022), 99.8% of students in schools have smartphones, but their usage for learning purposes is not yet effective. The study revealed that approximately 46% of

students use their smartphones for learning, while the rest is used for purposes unrelated to learning. Thus, only a few students in schools do not have smartphones, making it highly feasible to condition the learning process using smartphones.

Digitalization is rapidly advancing, and in the past two years, technology development has focused on artificial intelligence (AI), known as AI technology, which now plays a significant role in human life. The increasing popularity of AI in today's life is because this technology can provide effective and efficient solutions to answer and solve various informational needs of users. One type of AI is ChatGPT (Chat Generative Pre-trained Transformer). ChatGPT is an AI technology that functions as a search engine to assist users in answering various questions. According to Hadian (2023), ChatGPT has the ability to answer all user questions related to general knowledge, practical knowledge, technology, education, translation, and more. Another advantage is that ChatGPT can be used by educators to create teaching materials, questions, and explore knowledge. Another supporting opinion regarding the role of ChatGPT in education is the benefit it provides to teachers in preparing their teaching tools, including lesson plans, syllabi, and teaching models (Ikhwan, 2023).

In the context of ChatGPT, this application can provide relevant and accurate answers to user questions. The artificial intelligence in ChatGPT is based on natural language processing and artificial neural networks, enabling the application to understand human language and respond accordingly to user requests. The use of ChatGPT has the potential to significantly impact learning in the classroom. Although AI technologies like ChatGPT can assist in the learning process, the role of teachers as educators remains crucial in schools and cannot be replaced by any technology. Therefore, the paradigm of learning must truly change. Teacher-centered learning should be abandoned, and teachers should act as motivators and facilitators, which are highly necessary in the current era (Hadian, 2023).

LITERATURE REVIEW

Research on the use of ChatGPT in education is still minimal, and there are ongoing debates and controversies surrounding its implementation in the field of education. Some concerns regarding the use of ChatGPT in education include the potential for bias and discrimination due to its reliance on natural language processing, privacy issues as search data and queries can be stored and used for unintended purposes, concerns about job displacement (replacing instructors and academic writers), lack of creativity and critical thinking, as well as inaccuracies and plagiarism (Atlas, 2023).

ChatGPT can be a valuable resource in higher education for enhancing writing skills as it can generate text, summarize information, and elaborate to save time and improve the quality of work (Halaweh, 2023). Additionally, ChatGPT can detect grammar and style errors, making written content easier to understand (Atlas, 2023).

Rudolph et al. (2023) mention several advantages of ChatGPT. Like any new technology, especially when knowledge or skill evaluation is mediated by technology, there are concerns about its implementation and use. Instructors are increasingly worried that students can use ChatGPT to generate their written assignments, as it has been shown to produce reports in a matter of seconds without being detected by plagiarism detectors. However, Atlas (2023) argues that it is a myth that disclosing the use of GPT-3 (a language model created by OpenAI) would be considered plagiarism and suggests that plagiarism actually refers to presenting someone else's ideas as your own without giving proper credit to the source.

Khalil and Er (2023) conducted an experiment to determine whether plagiarism detection tools can detect essays written using ChatGPT. They found that out of the 50 essays tested, 40 essays had similarity scores of 20% or less, indicating a high level of originality. Similarly, Susnjak (2022) used ChatGPT in an experiment to assess its ability to engage in critical thinking rather than mere information retrieval, and the results were highly accurate, precise, and logically coherent.

METHOD

This is a qualitative descriptive research method, which involves an approach to investigate and comprehend the significance of individuals or groups regarding social issues. It is used to interpret, explore, or gain a deeper understanding of specific aspects related to beliefs, attitudes, or human behavior (Wijaya, 2020). Various techniques are used for data collection in this study, including interviews, observation, and documentation. These three techniques are employed to obtain data and information that complement and support each other. The interview method is a way for someone to obtain oral information or opinions from an informant by speaking and interacting with others, serving a specific purpose (Sugiyono, 2005).

In this study, the respondents for the interviews are two teachers, one teaching science (chemistry) and the other teaching social studies (geography). The selection of respondents is based on choosing representatives from the science and social studies teachers who have implemented teaching using ChatGPT. The stages of the interview conducted by the researcher include: creating an interview question guide so that the questions align with the purpose of the interview, determining interviewees, determining the location and time of the interview, conducting the interview process, documentation, ensuring that the interview results correspond to the information needed by the researcher, and summarizing the interview results.

Observation is conducted to observe the actual occurrences in the research object. The observer is present in various activities conducted by the object and makes observations. In this study, the observer is present in the classroom to observe the teaching and learning process conducted by the teachers.

Documentation is a method used to obtain data and information in the form of books, archives, documents, numerical and graphical records, as well as supporting research reports and explanations. In this study, the documents examined are the Lesson Implementation Plans.

RESULTS AND DISCUSSION

ChatGPT is one of the Artificial Intelligence (AI) technologies that is currently being widely discussed. With its advanced intelligence capabilities, this technology is speculated to replace many existing professions in the present era, leading some people to perceive ChatGPT as a threat to their lives and professions.

This concern extends to the field of education, where there are worries about the use of ChatGPT affecting students' mental well-being while working on assignments and taking tests. There is also concern that their critical thinking skills will deteriorate. As a result, in some cases in certain schools, ChatGPT is blocked and students are prohibited from using it, as there is a fear that students may use it to automatically complete assignments or other coursework with ChatGPT (Ropek, 2023).

Imagine the convenience and excellent language proficiency of ChatGPT, enabling it to answer users' questions. For example, if a high school teacher assigns homework to their students by providing them with 10 essay questions, with ChatGPT, students only need to copy the questions, and within seconds, the tasks given by the teacher are already completed by ChatGPT, and students only need to copy the answers. Then, how can the objective of assigning practice exercises be achieved if students solely rely on ChatGPT to complete them? Therefore, teachers should be more aware of technological advancements compared to their students in the classroom.

However, these concerns are later refuted, as technology cannot be reversed or avoided. Efforts to prevent or prohibit the use of ChatGPT will not be effective (García-Peñalvo, 2023). On the contrary, ChatGPT is expected to become an integral part of the writing process, similar to how calculators and computers have revolutionized mathematics and science (McMurtrie, 2022).

In this study, a preliminary study was conducted to provide an overview of the introduction of ChatGPT in schools, specifically at SMAN 1 Sukabumi, which serves as the research object. Based on the preliminary research, the respondents were teachers and 10th-grade students who provided information on the use of ChatGPT in schools as follows:

Table 1. Preliminary Study on the Use of ChatGPT by Teachers

Preliminary Data Results for Teachers	Description
Teachers who are familiar with ChatGPT	100%
Teachers who have ever used ChatGPT	76,9%
Teachers who have ever used ChatGPT in teaching	30,7%

A total of 13 teacher respondents representing each subject stated that they were already familiar with ChatGPT, either through news or from other teachers. Among these 13 teachers, 76.9% or approximately 10 individuals have tried using ChatGPT. However, some of them mentioned that they only used it out of curiosity. Furthermore, around 30.7% or approximately 4 teachers out of the 13 have used ChatGPT or introduced it to their students.

Table 2. Preliminary Study on ChatGPT Usage by Students

Preliminary Data Results for Students:	Description
Students who are already familiar with ChatGPT.	91,5 %
Students who have already or ever used ChatGPT.	84,7%
Students who have already or ever used ChatGPT in their learning.	71,2%
Students perceive ChatGPT as a helpful tool in their learning.	91,5%
Students believe that teachers are still necessary despite the presence of ChatGPT technology.	94,9 %

The student respondents consisted of 69 students from Grade 10, randomly sampled with approximately 5-6 students per class. Around 91.5% of students are already familiar with ChatGPT, while approximately 9.5% of students are unaware of it. Furthermore, 84.7% of students stated that they have either tried or witnessed how ChatGPT works, whereas about 15.7% of students have never seen or tried using ChatGPT at all.

Among the students, 71.2% have used ChatGPT for learning purposes, while approximately 28.8% have not used it at all, whether for asking questions about the subject matter or completing assignments given by teachers. Due to the convenience provided by

ChatGPT, 91.5% of students mentioned that they are assisted by this technology. In response to the last question given to the students, they believe that the presence of teachers is still necessary, even though technological advancements surpass ChatGPT in their learning. Around 94.9% of students stated that they still require the guidance and presence of teachers in conducting classroom learning.

To describe the learning activities involving ChatGPT at SMAN 1 Sukabumi, the research was conducted through documentary study, classroom observation, and in-depth interviews. The research findings are presented in the following table:

Table 3. Research Results on Learning Activities

Learning Activities	Description
Preparation	Teacher A: The use of ChatGPT is clearly written in the lesson plan under the core activities section.
Implementation	Teacher B: The use of ChatGPT is clearly written in the lesson plan under the closing activities section.
Evaluation	Teacher A: Students are encouraged to use ChatGPT to understand the subject matter by providing structured questions from general to specific.
	Teacher B: Students are advised to search for solutions to given problems, present data and facts using Google search.
	Reinforcement of the material is done together between the teacher and students.

Implementation in Learning Preparation Stage Teacher A (Science teacher)

In this stage, the teacher creates a lesson plan using ChatGPT on the topic of nanotechnology. In the lesson plan, the teacher specifies the use of internet-based learning media (Google and ChatGPT). The plan includes

activities for the introduction, core activities, and conclusion. The use of ChatGPT begins in the core activities, where the teacher provides structured questions related to nanotechnology. In the conclusion, students are assigned tasks and guided to create popular articles about the use of nanotechnology in various fields.

Teacher B (Social Studies teacher)

In this stage, the teacher develops a lesson plan on the topic of floods. The use of ChatGPT is evident in the discussion and conclusion sections of the lesson plan. Students are encouraged to utilize ChatGPT in finding innovative solutions for handling floods. In the core activities, students are directed to use the Google search engine to gather data and facts about floods.

The lesson plans created by both teachers demonstrate the incorporation of ChatGPT into their teaching practices. The instructional scenarios show the teacher's role in guiding, providing feedback, and evaluating the learning process.

Implementation Stage

During this stage, the researcher conducts direct observations of the classroom activities, aiming not to disrupt the learning process. The researcher takes notes and records the learning activities from the back of the classroom.

Teacher A (Science teacher)

In the implementation of the lesson, students are already equipped with their respective gadgets, and all students in the class have internet-connected devices. In the introduction phase, the teacher provides a stimulus by asking students to watch a 6-minute video about nanotechnology. The teacher monitors the activities by moving around the class. After watching the video, the teacher asks students to share their perspectives on the video. In the core activities, the teacher allows students to use ChatGPT to find answers to any questions they have about nanotechnology. The enthusiasm of the students can be seen through their engagement with this new technology. The teacher guides the search process, starting from definitions, examples of usage, advancements in renewable nanotechnology, and the utilization of nanotechnology in Indonesia. In addition to using ChatGPT, the teacher also encourages students to use references from Google as a comparison to the search results obtained from ChatGPT. Students are asked to present their findings to the class.

Teacher B (Social Studies teacher)

Unlike the Science teacher, the Social Studies teacher starts with an introduction, discussing how to create a well-structured article and search for literature when writing an article. In the implementation phase, students are guided to create an article about floods. Each paragraph created by students is accompanied by guidance from the teacher to collectively search for relevant literature using the Google search engine. When exploring alternative solutions for floods, the teacher allows students to use ChatGPT. Students are given various keywords to discuss with ChatGPT, and then the discussions are presented in front of the class.

ChatGPT can answer the questions posed by students, depending on the clarity of the questions asked. Sometimes, when the direction of a question is unclear, ChatGPT provides general responses. The ability of students to formulate specific questions is crucial. If students ask deeper and more focused questions related to the issue, the results obtained are more accurate. The teacher's role in guiding students to construct gradual and targeted questions that align with the desired learning objectives is essential.

Evaluation Stage

Table 4. Article Links from Student Work

Student Name	Article Link
Rindi Nuraeni	https://www.kompasiana.com/rindinuraeni/6464dc475479c30e014dddc2/nanoteknologi-bisa-membantu-kita-keluar-dari-masalah-peningkatan-emisi-gas-rumah-kaca-apa-sih-sebenarnya-nanoteknologi-itu
Quinnidi Rifqi Aiman	https://quinnidi.blogspot.com/2023/05/nano-teknologi-ada-dalam-tabir-surya.html
Nasya Geaninda Supriono	https://nasyagea.blogspot.com/2023/05/pemanfaatan-nanoteknologi-dalam.html
Mochamad Rizki Fadillah Syabah	https://pelajarcerdas78.blogspot.com/2023/05/kenapa-banyak-yang-suka-rokok.html
Risma Dwi	https://rismadwim.blogspot.com/2023/05/mengenal-nanoteknologi-menjadi.html

For the closing activity, the teacher, together with the students, discusses the results of their research and summarizes the topics they have learned. For Teacher A, the activity concludes with assigning the students to create an article on one of the applications of nanotechnology. The articles are uploaded to their personal blogs or shared in the media. On the other hand, for Teacher B, the learning activity concludes with collecting the articles created by the students in PDF format and submitting them to Google Drive.

Concerns about the use of ChatGPT not reflecting 21st-century skills, as expressed by Dilekci and Karatay (2023), stating that learning focusing on technological advancements in the information era requires students to have 21st-century skills such as critical thinking, problem-solving, creative thinking, cooperative work skills, and technological skills, including digital and information literacy. However, in reality, students with the guidance of teachers can apply reverse searching with the help of tools like ChatGPT, which is faster and more efficient.

In Teacher A's teaching approach, as recommended by Halaweh (2023), reverse searching with a new concept is applied. Through ChatGPT, students try to use the output generated by ChatGPT and then search and find evidence and supporting references for the generated output, either using ChatGPT or other references. In this learning approach using ChatGPT, students should be equipped with skills to select appropriate questions and keywords, evaluate and compare results, and search for references. With these skills, concerns about a decline in students' critical thinking abilities can be countered.

Both deductive and inductive learning can be conducted with ChatGPT, albeit with different approaches. Deductive learning involves applying general rules or existing knowledge to specific cases. In deductive learning, we use premises or known rules to reach specific conclusions. On the other hand, inductive learning involves drawing general conclusions from specific data or examples. In inductive learning, we observe patterns or trends in data to make generalizations or hypotheses about concepts or topics in general.

In the case of Teacher A's teaching, it employs a deductive approach to confirm or test hypotheses or known rules. This involves applying existing rules to specific situations to see if the drawn conclusions align with those rules. Meanwhile, Teacher B's teaching approach is inductive, where it generates new knowledge or concepts that were previously unknown. This allows for exploring previously unfamiliar domains.

In terms of evaluating learning without using written tests, it is one way to avoid relying on ChatGPT during assessments. Although it is possible to use written tests with Higher Order Thinking Skills (HOTS) questions, including visuals, graphs, and analytical questions, strict test supervision must be implemented. Creating articles as the final product of learning can train students in literacy, learning to write, and contribute positive content in the online world.

The readiness of teachers to implement learning using ChatGPT becomes a determining factor in the success of the learning process itself. Well-prepared learning scenarios result in focused and directed learning. ChatGPT is just a tool, and the mastery of this technology for its proper use in learning lies in the hands of the teachers.

CONCLUSIONS AND RECOMMENDATION

The use of Artificial Intelligence (AI) technology like ChatGPT can assist teachers and students in the learning process, although there are still concerns about potential negative impacts. The use of ChatGPT can help teachers in preparing teaching materials, enhancing students' digital literacy, and creating new patterns in learning.

Learning with ChatGPT can be conducted using both inductive and deductive learning approaches while still emphasizing the crucial role of teachers in shaping the classroom learning environment. The inclusion of additional references as comparisons and ensuring the accuracy of information presented from ChatGPT's output is necessary. This ensures that the learning process, which prioritizes 21st-century skills, continues without doubts and can

expedite information processing and exploration for learning purposes.

The need for AI-based learning models like ChatGPT is evident as it can serve as a reference for educators in implementing classroom learning. This technology can become a companion for teachers and students, enabling faster, easier, and skill-enhancing opportunities for students in literacy, writing, and preparing themselves for the 4.0 era.

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