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Transformation Of Learner Learning: Improving Reasoning Skills Through Artificial Intelligence (AI)

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ABSTRACT

The research aims to explore the potential of artificial intelligence (AI) in the context of Learning as a solution to the challenges in developing thinking skills. Through the use of AI technology, the study focuses on finding out the relationship between AI and students' ability to argue. The approach used in this research is quantitative with correlational methods. Research results show that AI in learning can be a significant catalyst for the development of critical and analytical thinking skills. Students engaged in learning environments using AI showed an improvement in problem-solving, information-analysis, and critical thinking skills so that their ability to argue improved. In addition, learning efficiency, and motivates the learners to reach their maximum potential. This research contributes to an understanding of how AI in education can have a positive impact on the development of argumentation skills. The practical implications of these findings can open the door to the development of more effective and personalized learning strategies in the future, creating a responsive and adaptive educational environment.

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Introduction

In an era where artificial intelligence (AI) is increasingly becoming an integral part of everyday life, there is an opportunity to explore the potential and challenges associated with technology in the context of learning. Educator-centered learning is expected with the help of AI to provide opportunities to make learners the center of learning.

AI has had a far-reaching impact on both society and individuals. Its ability to quickly process and analyze data and provide predictions and recommendations has changed the paradigm in many areas, from economics to healthcare and education. As the foundation of shaping future generations, we cannot avoid this change. In the realm of education, reasoning and critical thinking are recognized as core skills that learners must master. In

this context, the question that arises is how we can strengthen and improve critical thinking skills amidst the increasingly complex and rapidly changing demands of society (saraswati & Agustika, 2020). This research tries to capture the essence of this change by asking the critical question: Can the use of AI support the development of students' thinking skills?

The education process consists of several components, one of which is the teacher. The teacher is a component that plays a very important role in the education process. Teachers are one of the human components in the teaching and learning process, which plays a role in efforts to form potential human resources in the field of development. Teachers are professionals in the field of education who understand philosophical and conceptual matters; they also know technical matters (Nahdi et al., 2020; Nuryani & Handayani, 2020)

Learning activities will be more effective if there is a reciprocal relationship. The communication pattern of teachers and students in class learning will affect the activities of students in learning. One-way communication patterns will make the learning process a place to deliver information where the teacher is more active while the learners are passive. Two-way communication patterns allow for dialog between teachers and learners, either in the form of teacher-to-learner or learner-to-teacher communication.

Students in the Buddhist learning environment tend to be shy about expressing their opinions or responses to the material presented by the teacher. So that the expected reciprocity is not achieved. Learners who tend to be silent and passive find it very difficult to measure the extent to which learning can be accepted and absorbed as a whole. Silence can indeed mean understanding or even not understanding at all, so the teacher has difficulty measuring the absorption of material delivered orally.

The lack of courage to express opinions held by students can also result in a less than optimal teaching and learning process. The lack of courage to express opinions held by students can also result in a less than optimal teaching and learning process. This happens because students also lack good critical thinking skills, so the reciprocal relationship is not achieved (Triandini & Wayan Gunada, 2021; Yulianti & Gunawan, 2019).

When it comes to learning, it not only takes into account the cognitive, affective, and psychomotor aspects of learners but also their daily behavior or habits. The challenge of improving learners' reasoning ability lies in a number of factors, including limited resources, a curriculum that sometimes feels rigid, and teaching methods that may no longer be relevant to the needs of the new generation. Meanwhile, the development of AI cannot be underestimated, with AI technology becoming increasingly sophisticated, opening up new opportunities for a more dynamic and personalized approach to learning (Setiyadi et al., n.d.; Tamsir et al., 2023).

This research rests on the idea that the integration of AI in education could be a solution to this challenge. By providing real-time feedback, analyzing learners' individual needs, and offering customized learning materials, this technology has the potential to be a catalyst for the development of critical and analytical thinking skills. AI has also been used in translation, for example (Ruhmadi et al., 2023).

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The use of AI, such as GPT chat and other models, began to be used by students in completing tasks and supporting the emergence of ideas and concepts in the learning process. Use that is relatively easy and can be accessed through gadgets is carried out by Buddhist students at the high school level. Data downloaded from https://data.goodstats.id/ shows that:

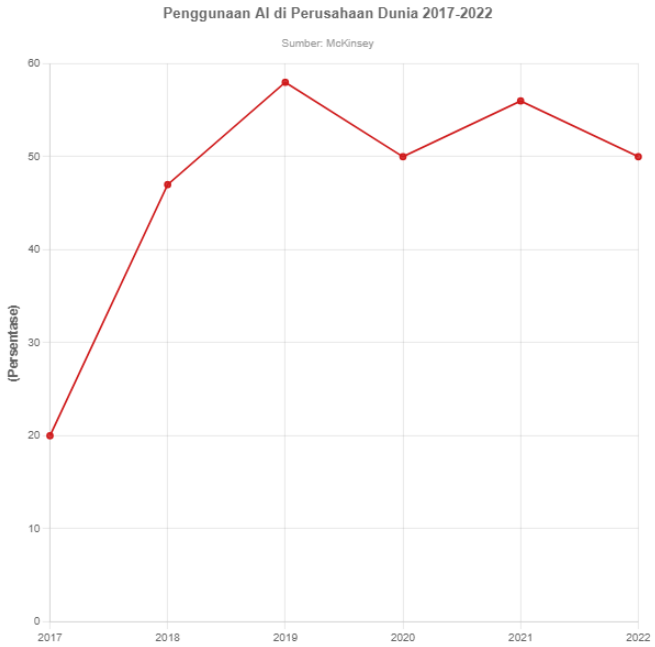

Figure 1.1 *Trends in AI Usage*

Figure 1.1 shows that in the last 5 years, the percentage of AI adoption in companies has continued to increase. According to a McKinsey report, in 2017, only 20% of global companies used AI in their business. This value increases 2.5 times in 2022, where there are 50% of world companies that have now implemented AI technology. Meanwhile, 2021 and 2022 experienced a decline (Serdianus & Saputra, 2023). Of course, with this opportunity for use, education must also take steps toward using AI, even though there is potential for misuse in the process (Amala et al., n.d.). In this context, this research aims to delve deeper and provide a critical view on the extent to which we have bridged the gap between the rapid development of AI and the urgent need for learners to develop skills that enable them to not only survive but also become active actors in a challenging future.

Method

The research method is a scientific approach used to obtain data with specific purposes and uses (Sugiyono, 2018). This study was conducted with a descriptive-quantitative approach. The procedure for obtaining data has a crucial role in the entire research design and implementation. The type of research adopted is correlational research, which aims to explore the relationship between two or more variables as well as determine the extent of the correlation (Arikunto, 2010). While the approach used is quantitative research.

In this study, researchers want to know the extent to which artificial intelligence has an impact on students' ability to argue. The variables in this study are artificial intelligence as

a variable (X), while the dependent variable (Y) is the skill of opinion. The relationship between variables used in this study is an asymmetrical relationship.

Data were obtained from the population and samples of the study, with 15 respondents. The samples taken in this study were Buddhist students at the high school level in Poncokresno village. Data collection is a systematic and standardized procedure for obtaining the necessary data. There is a relationship between the method of collecting data and the research problem to be solved; the problem gives direction and influences the data collection method (Sutrisno, 2001) Data collection in this study used a structured questionnaire with the steps taken by researchers in data collection, namely: 1) researchers made a research model; 2) they made a lattice of instruments; 3) they compiled instruments; 4) they tested instruments; 5) they analyzed the results of instrument trials; 6) they revised instruments; 7) they distributed research questionnaires; 8) they processed data; 9) they analyzed results; and 10) they drew conclusions (Sugiyono, 2015).

Credibility in research is very important. Validity is a measure that shows the level of validity of an instrument (Creswell, 2007). The validity test technique for determining the validity of the items using product moment correlation An instrument is considered valid if it is able to measure what is desired or should be measured. In compiling a valid instrument (content validity, construct validity) (Arikunto, 2010), to test the validity of the instrument The validity test technique used is the product-moment correlation.

To determine the reliability of the instrument in this study using the Alpha formula. Researchers used this formula because the instrument used was a questionnaire with a multilevel scale score. For questionnaires with a multilevel scale tested using the Alpha formula (Sugiyono, 2016, 2018).

After the data is obtained, the data is then analyzed with parametric statistical analysis, namely the analysis used to test population parameters through sample data with interval data types and data analysis techniques using simple linear regression with the following formula:

$$Y = a + bX$$

Y = Predicted value
a = Constant or if the value of X = 0
b = Regression coefficient
X = Value of independent variable (Sugiyono, 2018)

Findings

This study aims to explore how AI can deepen the learning experience in an educational setting, thereby enhancing learners' opinion skills. The results of the validity test of this research instrument with the AI instrument were 35 items and the ability to argue as many as 64 items. The item has passed the validity test with a total score of 99. Furthermore, the reliability test results were obtained:

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https://ejournal.stiab-jinarakkhita.ac.id/index.php/joeri

Table 1.1 *Reliability of AI Instrument*

Reliability Statistics	
Cronbach's Alpha	N of Items
.966	35

Source: SPSS

Table 1.1 shows the results: the Cronbach's alpha value is 0.966, so it is declared to have passed the reliability test.

Table1.2 *Reliability of Opinion Instrument*

Reliability Statistics	
Cronbach's Alpha	*N of Items*
.994	64

Source: SPSS 23

The reliability test results in Table 1.2 for the learning activeness instrument seen in the table above can be interpreted as indicating that the instrument with a Cronbach Alpha of 0.994 has passed the reliability test because it is above 0.899.

The results of the normality test using the non-parametric One Sample Kolmogorov-Smirnov test from AI on 15 respondents had an average (mean) value of 127.93, an absolute D value of 0.161, and a Kolmogorov-Smirnov z value of 0.623. This z value gives an Asymp. Sig. value of 0.832, which is far above the α = 0.05 value. This proves that the data on AI obtained from the distribution of instruments (questionnaires) has a normal distribution. Furthermore, the opinion ability instrument has an average value (mean) of 238.53 and an absolute D value of 0.154 with a Kolmogorov-Smirnov z value of 0.597. This z value gives an Asymp. Sig. value of 0.868, which is far above the value of α = 0.05. This proves that the data regarding the ability to argue is normally distributed.

Description of AI and Opinion Ability Analysis

Hypothesis testing with simple linear regression assisted by SPSS software obtained the following results:

Table 1.3 *Variables entered/removed*

Model	Variables entered	Variable removed	Method
1	AI	.	Enter

a. All requested variables entered.
b. Dependent variable: The ability to argue

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https://ejournal.stiab-jinarakkhita.ac.id/index.php/joeri

Table 1.4 *Model Summary*

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.869[a]	.756	.737	28.730

a. Predictors: (Constant), AI

b. Dependent Variable: The ability to argue

Table 1.3 shows that the magnitude of R (correlation) is 0.869, which means that AI and Buddhist learners' opinion skills have a strong relationship. This is in accordance with the assumption that the more the R value approaches 1, the stronger the relationship (Priyatno, 2008: 78). The coefficient of determination (R square) is 0.756, thus meaning that 75.6% of students' learning activeness is influenced by audiovisual media, while the remaining 24.4% is influenced by other factors not included in the regression equation.

Other factors that can affect students' learning activity include school conditions and environment, facilities and infrastructure, community environment, association of the learners themselves, and others. To determine the significance of the linear regression model, the F test is used with the following hypothesis:

H_o: The Regression Model cannot be used
H_a: The Regression Model can be used
Hypothesis testing criteria using Alpha 5%, namely Ho is rejected if Sig. ≤ 0,05.

Table 1.5 *Anova*

ANOVA[b]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	33227.576	1	33227.576	40.256	.000[a]
	Residual	10730.157	13	825.397		
	Total	43957.733	14			

a. Predictors: (Constant), AI

b. Dependent Variable: The ability to argue

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https://ejournal.stiab-jinarakkhita.ac.id/index.php/joeri

The results of the analysis of the F test obtained by the magnitude of the F count are 40.256, with a significant level of 0.000. It is assumed that if Sig. > 0.05, then Ho is accepted, while if Sig. <0.05, then Ho is rejected. The sig. value in this calculation is 0.000, which is smaller than 0.05, so the regression can be used to predict the effect of AI on students' ability to argue.

The coefficient of the linear regression line must know its significance; therefore, to determine the significance of the coefficient of the linear regression line, testing with the following hypothesis can be used:

Ho: β = 0 (there is no effect of AI on students' arguing ability)

Ha: β ≠ 0 (there is a significant influence between AI on students' arguing ability)

Hypothesis testing criteria using Alpha 5%, namely Ho is rejected if Sig. ≤ 0,05.

Table 1.6 *Coefficientsa*

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-40.065	44.532		-.900	.385
	AI	2.060	.325	.869	6.345	.000

a. Dependent Variable: The ability to argue

The t test is to test the significance of constants and audiovisual media variables (X) and learning activeness (Y). Based on table 4.27 Coeffisient above shows the amount of tcount AI 6.345 with Sig. 0.000 ≥ 0.05 then ho is rejected. This assumes that AI media has a significant effect on students' opinion skills.

Table 4.21 (Coeffisient Table) shows that the research data has a significant 0.000, so the regression formula can be used to analyze this research data. This illustrates the regression equation between X (AI, and Y (opinion skills).

The constant in table 4.21 regression coefficient on the audiovisual media variable (X) is 2.060, meaning that if the value of AI media increases or develops 1, then the ability to argue of students (Y) will increase or increase by 2.060. The linear regression calculation obtained from these calculations is as follows:

Y = 40,065 + 2,060 X

The regression equation above is a regression equation in this study that states that the effect of audiovisual media on learning activeness has a positive effect, so it uses a (+) sign, which means that the higher the results obtained from AI, the higher the ability to argue with students. If students have high levels of activeness, it will help in learning. Activeness is also an important element needed for students to build knowledge.

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Volume 1 Number 2 december 2023, page 37-46
https://ejournal.stiab-jinarakkhita.ac.id/index.php/joeri

Discussion

Knowledge Building With AI

Learning using AI makes it easier for learners to build knowledge through learning. Learners often ask questions if there are points that are not understood, learn what has been learned, and often exchange knowledge with friends; thus, learners will more easily build knowledge through learning. Learning using AI makes it easier for students to understand learning; thus, this is very helpful in the learning process, especially in conditioning students to learn. Learners more easily build knowledge through learning. Learners often ask questions if there are points that are not understood, repeat lessons that have been learned, and often exchange knowledge with friends and look for concepts that are not understood with AI. Thus, learners will more easily build knowledge in learning.

The use of AI in learning also helps create a pleasant classroom atmosphere, and learning will take place on time. Learners are active in class, happy to participate in learning, and have a high desire to continue learning. This can condition the critical thinking ability of students and bring out their ability to argue.

Negative opinion skills in learners will contribute to low learner achievement later, resulting in learners lacking courage in public speaking, enthusiasm for learning, and a lack of experience and knowledge. The ability to argue obtained by students is not only influenced by the ability of the teacher but also by facilities and infrastructure, conditions and the school environment, parents, self-confidence, the community environment, and the use of AI.

Freedom of expression can be established within the family. There are indications. Factors that influence a person's lack of ability to express their opinions are: thinking that expressing one's opinion in public is stressful. trying to convey too much information in such a short time. having a blank mind and not knowing what to say. Fear of not being able to speak. having the wrong goal. fear of getting a negative impression from others. trying to control behavior. knowing there are friends who know more than the speaker.

Conclusion

There is a significant influence of AI on the level of students' ability to argue, which includes tools that build conditions, Students are able to gain knowledge, Students are able to gain skills, learning materials are more effective and efficient. Attracting students' interest in further learning, learning through physical activity, building knowledge, curiosity, own attention, own observation, applying what is learned, learning through physical activity, building knowledge, curiosity, own attention, own observation, and applying what is learned.

The results of the research and discussion can be concluded that there is an influence of AI on the ability to argue students, namely with the regression coefficient value of 0.859, which has a strong enough relationship between the variables studied and shows a coefficient of determination of 0.756, or 75.6%. This

means that the ability to argue of students is 75.6% influenced by AI, and 24.4% is influenced by factors outside of measurement. There is an indication that 24.4% of other factors that influence the ability to express opinions are facilities and infrastructure, school conditions and environment, parents, self-confidence, and community environment, as well as the use of AI.

There is a significant influence of the use of AI on the ability of students to argue, which includes their level of confidence, vocabulary, good intonation, mastery of material, suitability of time, voice variation, correct speech, reasoned speech, and useful speech. means that if the value of the use of AI increases or the development of one value increases, the ability to argue will increase by 0.756. This results in the ability to argue that students are experiencing an increase in the influence of the use of AI. Thus, teachers and parents of students are expected to be able to interact with the school. There is a positive interaction, such as parents of students consulting with the school regarding the development of their children's learning at school, especially in the use of AI.

References

Arikunto, S. (2010). *Prosedur Penelitian (suatu Pendekatan Praktik*. Rineka Cipta.

Creswell, J. W. (2007). *Qualitative inquiry & research design: choosing among five approaches* (2nd ed.). SAGE Publications, Inc.

Nahdi, D. S., Rasyid, A., & Cahyaningsih, U. (2020). MENINGKATKAN KOMPETENSI PROFESIONAL GURU MELALUI PENGEMBANGAN MEDIA PEMBELAJARAN BERBASIS TEKNOLOGI INFORMASI. *BERNAS: Jurnal Pengabdian Kepada Masyarakat*, *1*(2). https://doi.org/10.31949/jb.v1i2.234

Nuryani, D., & Handayani, I. (2020). Kompetensi Guru Di Era 4.0 Dalam Meningkatkan Mutu Pendidikan. *Prosiding Seminar Nasional Pendidikan Program Pascasarjana Universitas Pgri Palembang 10 Januari 2020*, 224–237.

Ruhmadi, A., Zaka, M., & Farisi, A. (2023). *Analisis Kesalahan Morfologi Penerjemahan Arab-Indonesia pada ChatGPT*. *4*. https://doi.org/10.37680/aphorisme.v4i1.3148

saraswati, putu manik sugiarti, & Agustika, gusti ngurah sastra. (2020). Kemampuan Berpikir Tingkat TinggiDalam Menyelesaikan Soal HOTSMata Pelajaran Matematika. *Jurnal Ilmiah Sekolah Dasar*, *4*(2), 257–269.

Serdianus, S., & Saputra, T. (2023). PERAN ARTIFICIAL INTELLIGENCE CHATGPT DALAM PERENCANAAN PEMBELAJARAN DI ERA REVOLUSI INDUSTRI 4.0. *Masokan: Ilmu Sosial Dan Pendidikan*, *3*(1), 1–18. https://doi.org/10.34307/misp.v3i1.100

Setiyadi, Y., Reza Nursalam, F., Riska Amalia, A., Wijayanti, A., Elman Sudri, A., Imam Fachrizal, M., Irvanto, D., & Raihansyah, T. (n.d.). *Workshop Penggunaan Ai pada Sektor Pendidikan di SMK Negeri 8 Kabupaten Tangerang*. https://jurnalmahasiswa.com/index.php/appa

Sugiyono. (2015). Metode Penelitian Pendidikan. Bandung. In *Metode Penelitian Pendidikan (Pendekatan Kuantitatif, Kualitatif, dan R&D)*.

Sugiyono. (2016). *Metode Penelitian Pendidikan: Pendekatan Kuantitatif Kualitati. dan R&D.* alfabeta.

Sugiyono. (2018). *Metode Penelitian Kuantitatif Kualitatif Dan R & D*. CV. Alfabeta.

Sutrisno, H. (2001). *Metodologi Research Jilid III* (III). Andi Offset.

Tamsir, N., Rauf, A., Syahlan Natsir, M., & Syam, A. (2023). LITERASI DIGITAL DALAM PENGEMBANGAN MEDIA PEMBELAJARAN GURU SMKN 1 GOWA BERBASIS AI. *Community Development Journal*, *4*(2), 4636–4643.

Triandini, W., & Wayan Gunada, I. (2021). *PENGEMBANGAN MODUL FISIKA BERBASIS GUIDED INQUIRY UNTUK MENINGKATKAN KEMAMPUAN BERPIKIR KRITIS PESERTA DIDIK*. *7*(1).

Yulianti, E., & Gunawan, I. (2019). Model Pembelajaran Problem Based Learning (PBL): Efeknya Terhadap Pemahaman Konsep dan Berpikir Kritis. *Indonesian Journal of Science and Mathematics Education*, *2*(3), 399–408. https://doi.org/10.24042/ijsme.v2i3.4366