Perceptions of the Value of Artificial Intelligence (AI) in Education

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ABSTRACT

This study aims to explore the perceived value of artificial intelligence (AI) in the field of education, with a particular focus on the differences in attitudes between students and educators. Through a questionnaire survey, data were collected from 267 respondents with diverse ages, genders, educational backgrounds, and professional identities. The results show that over 90% of respondents believe that schools should teach AI skills and generally support using AI as an auxiliary tool rather than directly replacing manual tasks. Educators generally view AI as a means to enhance teaching efficiency and effectiveness, while students exhibit a certain degree of caution. This study provides a cognitive perspective for understanding the application value of AI in the education sector, offering valuable insights for policymakers and educational practitioners to conduct scientific evaluations and rational planning when promoting and implementing AI. It contributes to the organic integration of educational quality and technological innovation.

Keywords
Artificial Intelligence (AI); Education; Perceptions of Value; AI Literacy; Educational Innovation

Introduction

Nowadays, artificial intelligence (AI) is developing rapidly. AI technology is being used in various fields, including the education sector, such as customer service, gaming, and so on. At the same time, the potential and role of AI in education have been recognized by various sectors, especially in areas such as personalized learning and instructional optimization (Baker & Smith, 2019). The performance of AI technology in educational platforms, such as intelligent tutoring systems, adaptive learning platforms, and automated scoring systems. AI has great potential in the field of education, but of course there are various challenges on the other side. Of course, as AI continues to be integrated into the educational environment, it is becoming increasingly important to educate people to try to understand its value. However, stakeholder perceptions of the use and value of AI in education vary widely, raising questions about the current role of AI and its actual effectiveness and prospects.

On account of the multiple applications of AI in education, different groups of people will form completely different perceptions. Some people are unfamiliar with the role of AI in education and may not even know the nature or operation mechanism of AI, nor can they effectively distinguish between traditional computer-assisted teaching and intelligent learning systems based on algorithm optimization (Zawacki-Richter et al., 2019). Others have a relatively systematic AI knowledge base and a clearer understanding of how AI can support personalized learning, intelligent evaluation, and instructional decisions. Some students or teachers may simply equate AI with "robots" or "highly automated systems," ignoring more common forms of AI such as data mining, natural language processing, or adaptive learning algorithms (Zawacki-Richter et al., 2019). This lack of knowledge often leads to two different attitudes: one is fear of AI and fear of machines replacing teachers. The second is the idealization of AI, which mistakenly believes that simply introducing some software tools can automatically improve the quality of education. It is worth noting that teachers' cognition of AI also affects their teaching design and application intention. At the same time, policymakers without a correct understanding of the core functions and limitations of AI are prone to blind spots in the investment of educational resources. Therefore, a better understanding of the nature and function of AI at the cognitive level is a prerequisite for the deep integration of AI technology and educational practice, and it is also related to the ability of

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the education ecosystem to continue to absorb and utilize the innovative opportunities brought by AI. So the study raises the following questions:
RQ1: What are the general public's perceptions of the value of AI in education?
RQ2: How do students and educators perceive the value of AI differently?

This study is significant because it provides an in-depth understanding of the current perceptions of AI's value in education, which will serve as a reference for future technology adoption and policy development. By understanding the frequency of AI usage and differences in perceptions, educators, administrators, and policymakers will be better positioned to identify and address challenges hindering AI's effective integration.

Literature Review

Examining existing literature allows this study to bridge the current gap so that insight can be effective in integrating AI productively and ethically. This study will focus only on the perception of the value of AI within education. Studying students is critical as they use AI tools for education and in their future work, namely as teachers in schools (Strzelecki, 2023). Therefore, three articles have been chosen to provide insight to inform this study's direction.

Firstly, "Exploring Students' Perceptions of AI Integration in (Foreign) Language Instruction" (Dolenc & Brumen, 2024). They focused on two groups of students, namely Social Science and Computer Science, on their perception and utilization of AI. The study found that males and students of computer sciences were more likely to use AI for education. Conversely, Social Science students and females were less likely to do the same. They do, however, see AI as useful but have concerns about the replacement of human teachers by AI. The findings underscore the variance in convictions on the benefits of AI tools. Their study revealed concerns about the replacement of educators by AI. It highlighted that educators and policymakers needed to work together to execute complete AI training programs and ethical guidelines so that AI usage is both responsible and beneficial.

The second article is "Students' perceptions of generative AI: Perceived benefits, challenges, and implications in higher education" (Chan & Hu, 2023). They focused on the potential and challenges of Generative Artificial Intelligence (GenAI) technologies. The findings showed that many carry a positive attitude. GenAI's ability to speed up research, enhance reviews, and offer suggestions for analysis and hypotheses means the students were able to do more, allowing them to focus on their core academic and research goals. However, there were concerns over GenAI's accuracy of information, privacy lapses, ethical challenges, and creative ownership. Interestingly, educators were apprehensive. They voiced concerns about abuse and misuse, increased plagiarism, and the fairness and effectiveness of assessments that they work on. This proves the need for a balanced approach when GenAI is introduced and integrated into education. Both the students' learning needs and the educators' concerns and objectives need to be addressed to attain success.

Finally, the third article is "Investigating teachers' perceptions of artificial intelligence tools in education: Potential and difficulties. Education and information technologies" (Alwaqdani, 2024). Alwaqdani explored the perceptions of 1,101 Saudi teachers on the integration of Artificial Intelligence Educational Tools (AIED). They were receptive to AI tools in their profession, namely in saving time, enriching learning, and personalizing learning. Many of them believe that AIED can be effective, allowing them to shift their focus and energy on student interaction and research. They expressed concerns over training needs, job security, and ethical and privacy issues. Therefore, educational institutions, policymakers, and technology developers need to work hand in hand to ensure that AI tools are integrated effectively and ethically.

The above articles show clearly that there remain gaps. AI is evolving, perceptions are shifting, and the value of AI is developing. Therefore, this paper aims to bridge the gap, namely in public perception and the perception of the value of AI in education by both educators and students.

Methods

Survey research is the primary methodology used in this study since it has a larger output reach. It is a quantitative research technique that offers a rapid and effective means of gathering data from numerous samples, particularly

relevant to social science research (Mohajan, 2020). The survey in this research was created by the researchers to understand the perceptions about the value of AI in education by asking about its implications and benefits that perceive AI will give to them. Convenience sampling will be used to carry out the study, which is defined by Golzar et al. (2022) as an effective approach that collects data effectively in a shorter amount of time and is also cost-effective. The general public, representing a range of backgrounds including those from China, the US, Canada, Asia, etc., is the sample used in this. The researchers obtained 267 respondents who acknowledged the use of AI in society; the main purpose of this study will be their perspectives regarding the value of AI in education specifically. The researcher also considers the perceptions of students and educators about the value of AI to fulfil the second research objective. Additionally, there were 22 questions in the survey, which were organized into six items: Demographic Background, Artificial Intelligence I, Artificial Intelligence II, AI Usage, AI Value, and AI in Education.

Data Collection Procedures:

1) The first procedure involves selecting the target sample which is the
2) The target sample which was the general population was selected to gather the perspectives about the value of AI in education so that it can be analysed for statistical interpretation which will be represented in the findings using charts and tables
3) The creation of a survey questionnaire consisting of 22 multiple-choice and Likert-scale questions.
4) Dissemination of the survey through the researcher's social network via Facebook, WhatsApp, and WeChat.
5) The collected data will next be exported and transcribed into Excel.
6) The same procedure will be used to gather perspectives about the value of AI in education and represent them in tables and charts to examine the patterns.
7) The final step is to compare and contrast the perceptions of students and educators.

To report frequencies and common identities among the respondents, descriptive statistics are used in the Excel spreadsheet to examine all of the collected data. The researchers begin by addressing the first research question about respondents' perspectives of AI in education by determining the respondents' most significant response frequency. After that, the data will be examined and converted into tables or charts to provide a visual depiction of the responses' distribution. To conduct a comparison analysis and answer the second research question, the data will next be classified into two groups: students and educators. The perceptions of instructors and students will be compared by the researchers using statistical tables. Lastly, the findings will be discussed and reported as a narrative interpretation of the frequency results, explaining what the numbers mean in terms of perceptions of AI in education between the students and educators. All data collected in this research is confidential, and the questionnaire respondents' identities are anonymous. The main objective of the research, the researchers, and the guarantee of anonymity were also explained to the participants.

Results and Discussion

The study gathered responses from a total of 267 participants, all of whom reported being familiar with AI and using it in various settings. This dataset provides a diverse and representative sample, encompassing a wide range of demographics—age, gender, education level, and professional status. The findings are described and analysed in the results and discussion sections, with a focus on providing a comprehensive understanding of the perceptions of AI in education. Additionally, the analysis draws on relatedness to past studies, ensuring a rich contextual comparison. This diversity among respondents shall reflect a broad spectrum of experiences and viewpoints that align with the research objectives, whilst enhancing the reliability and depth of the research.

Table 1. Respondents' Age

Age	Percentage (%)
18 and below	3
19-30 years old	11.2
31-45 years old	42.7
46-60 years old	36
60 and above	6.7

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The majority of respondents (42.7%) fell within the 31–45 age group, followed by the 46–60 age group, which accounted for 36% of the sample (see Table 1). Respondents aged 19–30 made up 11.2%, while those aged 61 and above constituted the smallest group at 6.7%. Additionally, 3% of respondents were aged 18 and below. This distribution indicates a predominantly middle-aged respondent base.

Table 2. Respondents' Gender

Gender	Percentage (%)
Male	31.5
Female	68.5

A majority of the respondents were female, comprising 68.5% (183 individuals) of the sample, while males made up 31.5% (84 individuals) (see Table 2). This gender distribution indicates a higher representation of female participants in the survey. Therefore, this demographic skew could influence the survey results, as the experiences and viewpoints of female and male respondents may differ.

Table 3. Respondents' Educational Level

Educational Level	Percentage (%)
Primary	1.9
Secondary	5.6
A-Levels	4.5
Diploma	11.6
Degree	44.9
Postgraduate Degree	31.5

The educational qualifications of the respondents showcased significant variation, reflecting a well-distributed range of academic achievements. This reflects that 44.9% of the sample represented individuals with a bachelor's degree, making it the largest category of the total sample in which implies a large concentration of well-educated individuals. Additionally, 31.5% of respondents had obtained postgraduate qualifications, including master's degrees or equivalent, further highlighting a substantial number of academically advanced participants. (see Table 3) Moreover, the sample comprised 11.6% of those with diplomas. A smaller yet notable segment of the population has completed secondary education (5.6%), while 4.5% of the respondents reported having attained A-level education. Lastly, a minority group with 1.9% of the sample has primary education. This diverse educational background ensures a wide range of perspectives, encompassing participants from varied levels of academic exposure.

Table 4. Respondents' Professional Status

Professional Status	Percentage (%)
Corporate employee	23.2
Teacher/Educator	23.2
Business owner	18.7
Stay-home parent	16.9
Student	9.4
Retired	6
Unemployed	2.6

Research respondents represented a variety of professional roles. Respondents included 23.2% who identified themselves as teachers or educators. The representation shows a significant reflection on education perspectives that align with the research objectives. Corporate employees followed at 23.2%, illustrating the relevance of AI in professional and organizational settings. Students made up 9.4% of the sample, providing insights into the younger demographic and their engagement with AI (see Table 4). Business owners accounted for 18.7%, bringing in viewpoints from entrepreneurial and managerial contexts. Additionally, stay-at-home parents comprised 16.9%, retirees 6%, and unemployed individuals 2.6%. The inclusion of these groups ensures a comprehensive understanding of AI's perceived value across various life and work situations, creating a well-rounded analysis of professional and non-professional perspectives.

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In total, this research collected 267 responses covering the whole spectrum of professional levels and educational backgrounds to achieve a diverse perspective on how professionals view AI in education. The largest number of participants (42.7% of the sample) fell in the age range of 31 to 45 years, which suggests that a significant majority of participants are probably at the height of their professional or academic careers. However, this gender distribution skewed strongly towards women, with a total of 68.5%, which could imply that this study was in favour of women. To achieve the second objective, the largest group from a professional point of view was educators and teachers, followed by students, who made up 9.4% of the sample. This mix gives us insight from both the teachers' and learners' perspectives into the educational sector. Moreover, the majority of respondents qualified at least at a degree level, with 44.6% of the respondents having at least a bachelor's degree. This shows a relatively educated sample base.

Table 5. General Respondents' Perception Statistics

Question	Most Frequent Response	Frequency of Most Frequent Response (n/267)	Percentage (%)
Do you feel AI has been helpful in your life?	Helpful	125	46.8
Do you think AI in Education has impacted students' cognitive skills?	Agree	134	50.2
Does AI have a place in Education?	Yes	139	52.1
Should students be allowed to use AI for assignments?	Yes. As a helping tool only but not to write assignments.	171	64
Do you think Education will integrate more AI in the future?	Yes	259	97
Should schools teach the use of AI?	Yes	241	90.3
Should teachers be allowed to use AI for teaching and preparing?	Yes	238	89.1

This section exhibits the public perceptions of the respondents, where all participants indicated that they were aware of the clinical benefits of AI. Moreover, all the participants indicated that they were using AI. In-depth exposure of 92.5% (247 respondents) reported that they used AI in the past. The high level of exposure and engagement with AI by the respondents in this exercise lays bare the fact that their insights are from direct interaction with the technology. Participants generally were positive in their views about AI, with nearly half (46.8%) rating AI as 'Helpful' in both their personal and professional lives, reflecting the utility and advantages of AI (see Table 5). Concerning positive influences, 50.2% of respondents agreed that AI has a positive impact on students' cognitive skills, though in reality, students will spend more time analysing and processing data than on critical thinking and problem-solving. Respondents were asked if AI were to have a place in education. A slight majority of 139 participants (52.1%) responded "Yes" to believing that AI is relevant to education.

The question of whether students should be allowed to use AI for assignments also garnered cautious responses. The most common response was "Yes, as a helping tool only," selected by 171 respondents (64.0%), indicating broad support for the restricted use of AI by students. In the future of AI in education, all (97%) of the participants believe that AI will continue to pervade the education sector and someday take on a major role in education. The majority of participants expressed strong agreement that schools should teach students how to use AI. The response "Yes" emerged as the most common choice, selected by 241 participants (90.3%). This overwhelming consensus underscores the recognized importance of fostering AI literacy among students. The findings conclude that the use of AI by educators was further supported by a strong majority (89.1%) who felt that AI could serve to enhance teaching efficiency and

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effectiveness. With a very strong endorsement of AI, all across the board, it speaks to the great hope in the ability of AI to complement conventional teaching methods and make the educational experience that much better.

Table 6. Perceptions of AI Between Students and Educators

	Students (n=25)	**Teachers/Educators (n=62)**
Most Frequent Response (Helpfulness)	Helpful	Helpful
Frequency (Helpfulness)	10	33
Percentage (Helpfulness)	40%	53.2%
Most Frequent Response (Cognitive Skills)	Agree	Agree
Frequency (Cognitive Skills)	13	27
Percentage (Cognitive Skills)	52%	43.5%
Most Frequent Response (Support for AI)	Depends on situation	Yes
Frequency (Support for AI)	12	35
Percentage (Support for AI)	48%	56.5%

According to Table 6, educators appear to have a more favourable impression of AI than students. The most chosen response for both groups was AI is “Helpful”, where educators picked this the most at 53.2%, and students were 40%. In this regard, disparities imply that educators are more inclined to have a stronger consensus on AI benefits in their personal and professional lives, perhaps alluding to the ease of educational tasks and teaching efficiency. In terms of the effects of AI on cognitive skills, educators again gave a more positive judgment of AI than students. Albeit that, both groups most frequently agreed that AI positively affects cognitive skills. Out of 25 students, 52.0% chose “Agree” and showed an understanding that AI assists in the development of mental skills. Likewise, 43.5% agreed on the part of educators as well, enhancing the perception of AI as a benefit or use of cognitive enhancement. The data derived shows that educators are slightly more positive, while students are a little more cautiously or conditionally supportive.

The gap between educators and students becomes even more apparent when examining their support for AI's role in education. However, 56.5% of teachers said “Yes” when asked if they strongly support the integration of AI in education, yet only 48% responded to the same question with “Depends on the situation". Henceforth, it shall highlight that educators have more confidence in AI’s capacity to achieve positive educational outcomes. Possibly because they are likely to have already experienced AI in teaching. Conversely, students express the idea of avoidance in reliance on AI or to prevent the downside, which is supported by their responses.

This study aims to understand the general perception of the value of AI in education while also considering the variables of students and educators. The results of this study confirm existing literature related to AI in education regarding perceived utility and future potential. Previous research has consistently highlighted the transformative role of AI in enhancing educational outcomes by personalizing learning and optimizing teaching processes (Holmes et al., 2019). This research’s findings mirror Luckin et al.'s (2016) study, wherein the scholars believe that AI will be beneficial for students' cognitive skills, such as critical thinking and problem-solving. Likewise, 46.8% of the respondents strongly support the integration of AI in education, which aligns with the agreement in regards to AI’s integration, as Roll and Wylie (2016) predicted—AI's adoption is inevitable as digital tools become more embedded in educational systems. This study also highlights nuanced differences in the perception of AI between students and educators to underscore the critical role of context in shaping perceptions of AI. Students are gradually accepting AI, together with a concern that aligns with Selwyn (2019), where overreliance on AI systems may erode traditional learning skills such as critical thinking and creativity. However, this hesitancy is part of a bigger fear by students about

the introduction of AI in educational settings, especially the risk of undermining their ability to engage deeply with material and develop independent problem-solving skills.

While educators were more optimistic about how AI could improve teaching, 56.5% of respondents showed favouritism toward AI. As per findings by Roschelle et al. (2020), AI-driven tools can help teachers spend more time on human learning interactions, such as interactive teaching, as well as creative teaching methods that enhance students' engagement, resulting in a meaningful learning environment. These signs suggest that educators are very conversant with AI's potential as a complementary tool rather than a replacement to improve teaching practice. On the other side of the view, Williamson (2017) found that unregulated AI in educational contexts is at risk of inequity, bias, and misuse. Without clear frameworks in place, the great potential benefits of AI could be overshadowed by unintended negative consequences like disparities in access or even the risk of a privacy breach. Therefore, policymakers and educational institutions need to ensure that they develop strong frameworks. It could address students' concerns, including strategies for making these frameworks accountable for issues of equity, transparency, and accountability rather than diminishing the quality of education. By doing this, it can put AI on a path for transformative possibilities, which is well-regulated and ethically guided.

On the other hand, the majority of students, at a rate of 64%, agreed that the integration of AI in educational learning should be limited as a tool, as it should not interfere with learning development. In line with that, Holmes et al (2019) stated that education functions to mature students and prepare them for financial independence by using AI to smooth the process of expertise and support learning, yet it should not be used to teach them more efficiently. Without proper moderation of AI assistance, students run the risk of technology dependency that harms their critical thinking and cognitive development. That being said, Kinshuk et al. (2016) established that smart learning environments benefit students by providing customized learning environments targeted for monitoring and continuous progress feedback. There is a clear distinction between student AI indulgence and effective smart education that shapes their learning system. Consequently, educators should critically assess AI integration in learning by using adaptive teaching that connects smart learning with educational outcomes. Balancing technological education among students can be improved by installing digital literacy within educational assessments that allow them to prepare for mitigating responsible AI implementation.

Further analysing the results of this study from the perspective of social constructivist learning theory, we can find that there are many similarities and challenges between the role of AI in education and this theory. In this study, although most respondents recognize the value of AI in education, how to effectively integrate AI into social interaction and collaborative learning still needs to be discussed in depth. For example, AI can be used as a tool to promote exchanges and cooperation between students and between students and teachers, but this integration is not sufficient in practice. For example, Chen and Looi (2021) pointed out in their research that the application of AI technology in education needs to be combined with the learning principles of social constructivism to better play to its potential. In the current education scene, although AI can provide personalized learning resources and feedback, it may ignore the social interaction of learning to a certain extent. For example, a personalized learning system that relies too much on AI may lead students to reduce interactions with peers and teachers, thus affecting the social construction process of knowledge. This is consistent with the student's concern that AI may weaken the interpersonal learning experience found in this study. In addition, starting from the concept of an educational innovation ecosystem, the results of this study also provide a new direction for us to understand the position of AI in educational innovation. The education innovation ecosystem emphasizes that education innovation is a complex process involving the interaction of multiple stakeholders, including students, teachers, educational institutions, and technology developers (Li & Lalani, 2022). In the process of integrating AI into education, the cooperation of various parties is crucial.

The different cognitions of educators and students on AI in this study reflect the differences in the needs and expectations of different roles in this innovation ecosystem. Educators are more concerned about how AI can improve teaching efficiency and quality, while students are more concerned about its impact on their own learning experience and ability development. This requires all parties in the education innovation ecosystem to strengthen communication and cooperation and jointly explore how to optimize the application mode of AI in education. For example, technology developers need to constantly improve the design of AI products according to the feedback of educators and students to better meet the actual needs of education and teaching. Educational institutions also need to provide corresponding training and support to help educators and students better adapt to and use AI technology.

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Conclusion

A survey of 267 participants from diverse backgrounds (age, gender, education, occupation) found that most recognized AI's helpfulness in life. Comparing students' and educators' views, educators were more positive about AI's value, but both agreed on its positive cognitive impact. Students were more cautious, fearing overreliance. This study offers a cognitive view for the public and educators on AI in education, filling a research gap and guiding future research and policy. By highlighting cognitive differences, educational institutions can better design AI education strategies, optimize teaching, and boost efficiency and quality. The results stress the need to balance interests and concerns when integrating AI into education, driving its development to unlock AI's full educational potential. One of the key insights deciphered from this study is the necessity to provide data support for education decision-makers to help them formulate more ethical AI education policies, such as planning courses and standardizing educational applications. This will promote the logical integration of AI in education and avoid blindly following the trend or overreliance.

Moreover, this paper highlights key recommendations to boost AI adoption and understanding. Firstly, initiatives should be launched to bridge the adoption gap, ensuring equitable access to AI resources for people of all backgrounds. Secondly, educational institutions ought to provide AI-focused digital literacy programs. These can assist in tailoring teaching activities based on students' attitudes towards AI and guide them to use it correctly. For example, by conducting AI-assisted learning projects, nurturing students' autonomous learning and research capabilities with AI, while emphasizing critical thinking and creativity to avoid overreliance. This will also draw public attention to AI education, enhance public awareness, foster correct public opinion, and drive educational innovation and reform.

The sample might be biased due to convenient sampling, unable to fully represent the whole population, thus limiting the universality of the results. For instance, a relatively high proportion of women and concentration of specific age and occupation groups in the sample could skew results towards these groups' views, failing to accurately reflect the cognition of uncovered groups. Moreover, relying on participants' self-reported data may introduce subjective bias. Differences in respondents' understanding of AI can affect question-answering accuracy and objectivity, compromising data reliability and conclusion accuracy.

Conflict of Interest

The author(s) declare(s) that there is no conflict of interest regarding the publication of this paper.

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