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Students' Attitudes on The Role of Artificial Intelligence (Ai) In Personalized Learning

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Abstract: Educational institutions are increasingly incorporating new technologies into their classrooms, such as artificial intelligence (AI), enabling more innovative teaching methods and learning experiences. Unlike traditional teaching methods, where lecturers adapt their lectures to the needs of the average student, AI-powered educational platforms are more dynamic and productive, as they can be adapted to the preferences, learning styles and pace of each student, enabling personalized learning. The aim of this study is to gather information that will help educators, legislators, and AI developers optimize AI's role in education for increased student achievement by examining students' attitudes toward the implementation of AI in personalized learning. The findings of this study may have an immense effect on how AI is used in educational settings in the future, because they may provide better understanding that would enable students to receive more individualized instruction and autonomy while also increasing pedagogical opportunities and reducing an excessive amount of administrative work for educators. 219 students of Megatrend University in Belgrade participated in the research (all three study levels), to whom the questionnaire was sent by e-mail. The results indicate that students believe that: a) If the application of AI makes learning personalized, the greater the possibility for students to identify their abilities and creativity; b) If lecturers apply the most effective teaching methods using AI, they can significantly automate the monitoring of student progress; c) If innovative and interesting learning opportunities are applied in classes, the greater the interactivity of students in the teaching process; d) AI can examine past student performance to identify areas of difficulty and provide tailored assistance in those areas.

Keywords: *Artificial Intelligence (AI), Personalized Learning, Students, Machine Learning (ML), Intelligent Learning Systems*

Introduction

It is impossible to imagine functioning in today's society without access to Internet-based technologies. Digital interactions affect all aspects of society (Baltezarević, 2022), and they are becoming increasingly important in the education system as well. They improve students' motivation, their academic achievement, and most importantly, make learning enjoyable. They also facilitate communication, distance learning and group project collaboration (Baltezarević and Baltezarević, 2024). Around the world, educational institutions are integrating digital technology at different rates, and many developed nations continue to place a high priority on raising educational standards (Fahimirad and Kotamjani, 2018).

Among the new technologies, artificial intelligence (AI) certainly stands out, which represents the ability of machines or computers to think and act like humans. It shows the efforts of computerized systems to imitate the human mind and actions (Wartman and Combs, 2018). AI software is anticipated to soon outperform human intelligence (Baltezarević, 2022). AI finds use in nearly every sector, including robots, trade, economics, law enforcement, and health care. Additionally, because there is now a shortage

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of qualified personnel in several educational fields, AI technology has an impact on the creation of new approaches to deliver improved teaching methods (Tuomi, 2018). AI has improved education since it has made it possible to build and apply more sophisticated pedagogical tools for online and web-based learning platforms (Mikropoulos and Natsis, 2011). AI in education refers to the use of artificial intelligence technologies, such as machine learning (ML) and natural language processing (NLP), to enhance the learning experience. This technology has the potential to revolutionize the way learning and teaching is done, making it more engaging and effective (Alneyadi et al., 2023). The growing number of students from various locations enrolling in online courses is one of the biggest arguments for the usage of AI in education (Popenici and Kerr, 2017). Even while it seems that active human participation is required for successful education, AI envisions improving education and quality at all levels (Grosz and Stone, 2018).

AI-powered personalized learning platforms are quickly emerging as crucial elements of the current educational revolution. These platforms provide tailored assessments and information by evaluating students' skills using ML algorithms. As students engage with the platform, the AI continuously enhances its understanding of their strengths and weaknesses, ensuring a personalized learning experience that evolves with time (Zohuri and Mossavar-Rahmani, 2024). Intelligent learning systems have a lot to offer instructors of distant learning courses. Digital tools have compelled the learning system to drastically change from in-person to remote delivery. AI in education can facilitate collaborative learning by allowing online group interactions, streamlining arguments, and enabling adaptive groupings based on student profiles (Zawacki-Richter et al., 2019). The ability to cater to different learning styles and individual requirements is one of the amazing features of AI-based personalized learning. Individualized AI-driven learning platforms can offer many learning modalities, including kinesthetic, auditory, and visual methods, because students learn and process information differently. The adaptability of the material allows students to engage with it in a way that best fits their preferred learning style, resulting in a more inclusive and effective learning experience as a whole (Luan and Tsai, 2021). Intelligent tutoring systems, chatbots, and automated grading and evaluation can increase efficiency, save time for instructors, and provide more accurate and consistent feedback. However, there are several drawbacks to adopting AI in the classroom. Privacy and security concerns, lack of trust, cost and potential bias are among the issues that must be addressed in the near future (Jarrah et al., 2022). To ensure that every student receives a personalized learning experience that optimizes their potential, AI algorithms can analyze individual student data, such as learning pace, strengths, and weaknesses, to customize educational content and activities. Global accessibility, increased efficiency, and the creation of cutting-edge instructional resources are unquestionably among the benefits of artificial intelligence in education. In contrast, obstacles encompass worries over data confidentiality, possible prejudices in artificial intelligence algorithms, and the possibility of educators losing their jobs. Maybe, the biggest drawback is that AI is devoid of real emotions, making it unable to truly comprehend and react to human feelings. Providing each student with personalized tutoring would be extremely expensive without AI. In the not-too-distant future, personalized learning experiences can be customized through the use of AI, improving academic achievement and easily meeting a range of learning requirements (Milberg, 2024).

Artificial intelligence (AI) and the education sector

Artificial intelligence (AI) relies on algorithms, which are sets of rules and instructions that computers follow to solve problems and do tasks. ML is based on statistical learning techniques and employs data and algorithms to carry out tasks that frequently call for human intelligence. ML algorithms first analyze the data to look for patterns, and then they build models that are used to predict values into the future (Akgun and Greenhow, 2022). ML based on artificial neural network is known as deep learning (DL). DL models outperform shallow ML models and conventional data analysis techniques in many applications (Janiesch et al., 2021).

AI is increasingly being integrated into teaching, learning and administration in the field of education (Chassignol et al., 2018) and can improve data analysis, allowing lecturers to make more appropriate decisions. It can also increase student participation by offering interactive and engaging learning opportunities (Wardat et al., 2022). AI may adjust the level of difficulty of learning exercises, suggest areas for development, and provide pertinent learning resources. One of the main advantages of personalized learning is that it guarantees that every student gets the support and instruction necessary

to realize their full potential. It also enables advanced students to be challenged at their own level while enabling lower-achieving students to catch up (Gningue et al., 2022). Also, AI can examine past student performance to identify areas of difficulty and provide tailored assistance in those areas (Alarabi and Wardat, 2021). However, given recent data breaches and cyberattacks, there are security and privacy issues regarding the acquisition and use of student data by AI-based systems (Pedro, F., Subosa et al., 2019). Cyberattacks on educational institutions put students' safety in danger in addition to causing disruptions and financial losses. In order to stop cyber security dangers from happening, schools and universities need to recognize them and put defenses in place (Colaco, 2024).

The multi-billion-dollar e-Learning sector is expanding globally. AI technology is one of the main drivers of this market. The education AI market is predicted to reach a whopping $80 billion by 2032, with the generative AI market growing at a projected annual rate of nearly 77% (Ames, 2023). The number of people using various AI tools, such as text, generative imaging, and more fundamental ML tools, will increase significantly over the next few years. There are currently just over 250 million users of AI tools, and that figure is predicted to triple to over 700 million by 2030 (Thormundsson, 2023). Less than half of the 1,000 students surveyed by BestColleges admitted to using AI for their studies. About half of those who have used AI report that they use it not only to gather information, but also to complete tasks or tests (Welding, 2023). In a study of more than 5,000 Swedish university students, 95% of participants indicated they had heard of artificial intelligence (AI), 56% stated they would use it in their studies, and 35% said they used it frequently. Sixty-eight percent of students who used AI reported that it improved their performance. However, almost half of instructors say they use generative AI when they plan their lessons. This entails doing pertinent research and creating engaging lesson plans (Balderson, 2023).

One of the main drawbacks of traditional education is that, despite having diverse knowledge bases, learning objectives, and needs, all students must follow the same learning sequence. Traditional educational resources suggest that students complete a set of learning procedures in order to improve their academic performance. Not every student must adhere to a predetermined course of study. One of the main goals of modern educational program designers is to create personalized learning pathways that include the needs, motivations, interests, behavior patterns, and talents of each student (Elshani and Nuçi, 2021). AI makes people aware of fresh technological options that give students choices and encourage creative methods of instruction. The development of this technology mimics human speech (speech synthesis, human-computer dialogue, machine translation, speech recognition), listening (machine translation), thinking (theorem proving), learning (machine learning, intelligent adaptive learning), and action (robotics), leading to the creation of personalized learning paths (Huang et al., 2021). AI in education will lessen lecturers' burden, tailor instruction, provide possibilities for successful learning, assist students in identifying their strengths, and foster creativity (Humble and Mozelius, 2019).

Multiple facets of education, including thinking and language abilities, can be impacted by advanced intelligence. For example: a) AI can administer continuous assessments to assess students' proficiency in different courses. These dynamic assessments provide a clear view of the progress made by the students. b) Based on assessments, AI is able to suggest or show the content that is best suited for each student. This procedure can incorporate text-based information, movies, interactive simulations, and more. c) AI is able to adjust the learning pace to the student's needs. Quick learners can advance to more challenging content, while slower learners can receive more instruction. d) By analyzing how students interact with the content, AI can identify the preferred learning style of each student (visual, auditory, kinesthetic, etc.) and adjust the content delivery to meet their needs. e) AI can give prompt feedback on homework and exams, assisting students in identifying areas for improvement by offering more details or explanation when necessary (Thinkful, 2024). Intelligent education systems can provide timely, personalized instruction and feedback to both instructors and students. Increasing the value and efficacy of learning is the goal of using a variety of computing technologies, particularly those associated with ML (Kahraman et al., 2010).

Artificial intelligence (AI) and personalized learning

Despite not being a novel concept, personalized learning is finding new applications as big data analytics and AI advance (Magomadov, 2020). By "personalization", we imply that every student receives customized instruction and evaluation. It is possible to identify appropriate content and evaluate stu-

dents' performance levels using an AI-based system. For instance, if a student struggles with a particular subject, the lesson may be repeated using a different approach to instruction (Rodrigues et al., 2019). Personalized learning systems and approaches motivate students to learn and improve academic performance (Zlatarov et al., 2021). However, calculating a personalized delivery system comes with a lot of challenges. For personalized systems to work, there must be a skilled and effective mechanism in place that allows for ongoing student assessments and the determination of their proper comprehension level. Models based on DL and ML can be used to find and match the appropriate amount of content for each learner (Panjaburee et al., 2022).

Educational institutions are quickly implementing chatbots, automated assessment systems, facial recognition software, personalized learning systems, and predictive analytics tools driven by ML algorithms to assure effective teaching. Intelligent learning systems, which provide instructors and students with access to a variety of instructional resources based on their particular learning requirements, are among the most well-liked and practical uses of AI (Akgun and Greenhow, 2022). The underlying idea of intelligent learning systems is that students use a responsive interface that adjusts learning according to the user's experience and academic standing. But the main benefit of AI-driven systems is their capacity to quickly decipher extraordinarily complex data streams. This implies that the future generation of intelligent learning systems will require user interfaces that gather historical data that can be utilized to generate student profiles and real-time behavioral patterns (European Commission et al., 2018).

With the use of state-of-the-art ML and AI technologies, Gradescope is a platform that assists educators in evaluating the progress of their students. The platform is helpful since it frees up lecturers' time that would be used to grade assignments. Through data collection, Gradescope identifies student needs and classroom trends (Skylight.science, 2023). Increased productivity and support for instructors in the classroom could come from an intelligent teaching assistant called Botty. This training application has a number of features that help, including online question answering, auto-correction, and intelligent assessment (Li et al., 2016). The educational platform Knowji is an audio-visual tool based on student development research. It arranges academic data and reflects typologies of cognitive categories. The program integrates the most effective techniques to make learning successful while maintaining enjoyment of the process by using an algorithm to create a psychological profile of each student (Web, 2023). An AI tool called Knewton Alta is designed to help instructors grade assignments and encourage learning. This educational software provides quick instructions, concise explanations, and a hands-on learning experience. Students can choose a customized path according to their individual goals and requirements. Technology monitors the development of students and responds instantly to enhance learning results (Nosenko, 2020). Lastly, AI software Cognii specializes on AI-powered evaluation instruments, particularly for assessing essays. It gives tutors fast, in-depth feedback on students' writing, enabling them to focus on particular areas that need improvement (Fullestop, 2023).

The adaptive transmission of information, which is primarily made possible by AI algorithms, is the cornerstone of personalized learning (Khonturaev, 2023). AI has revolutionized assessment procedures by going beyond traditional exam formats to more dynamic and adaptive strategies. Student performance data is analyzed by ML algorithms to uncover patterns, weaknesses, and strengths. Tests that are tailored to the individual learning paths of each student are developed using this data. Instructors may quickly and effectively address particular learning gaps and make modifications to their course plans with the help of AI-powered evaluation tools (Gardner et al., 2021). Personalized learning and student engagement go hand in hand by nature. The more personalized a lesson is, the more likely it is that a student will remain interested in it. Students are prone to disregard or pay insufficient attention to the lesson if nothing can capture their interest (Dahlberg, 2023). Personalized learning systems driven by AI have the potential to improve student performance by 30% (Solomons, 2023), on the other hand AI is capable of automating many tasks and keeping track of students' progress. It may also assist instructors in using the best teaching strategies while considering the academic performance and learning environment (Chaudhry and Kazim, 2022).

Objective of the research

This paper investigates the effects of the application of artificial intelligence on the personalized learning of students. Considering that artificial intelligence (AI) is a new concept and is not yet applied

to a sufficient extent in the education process, the aim of the research in this paper was to examine the attitudes of students on the application of new methods in learning, i.e. what are their attitudes concerning the kind of educational alterations that might occur if instructors include AI advancements in the teaching process.

In order to achieve the goal of the research, one general and three auxiliary hypotheses were formulated:

H_0: If learning is personalized through the application of AI, the possibility for students to identify their abilities and creativity is greater.

H_1: If lecturers apply the most effective teaching methods using AI, they can significantly automate the monitoring of student progress.

H_2: If innovative and interesting learning opportunities are applied in classes, the greater the interactivity of students in the teaching process.

H_3: AI can examine students' past performance to identify areas of difficulty and provide tailored help in those areas.

Materials and Methods

Pattern and procedure

The questionnaire used to examine students' attitudes was sent to the e-mail addresses of students at all three levels of study with a note that the research is being conducted exclusively for the purposes of scientific research. The sample on the basis of which the research was conducted includes 219 students of the Megatrend University in Belgrade, namely: 117 (53.4%) male and 102 (46.6%) female (M=1.47, SD=0.500), of which 142 (64.8%) undergraduate students, 55 (25.1%) master's students and 22 (10.0%) doctoral students (M=1.45, SD=0.671). The structure of respondents in relation to age shows that 149 (68.0%) students aged 18-25, 51 (23.3%) students aged 26-35 and 19 (8.7%) students participated in the research aged 36-45 (M=1.41, SD=0.645).

The questionnaire was created so that three questions were constructed with the purpose of determining the socio-democratic characteristics of the respondents: gender, age and professional education. Then, 18 statements were formulated that examined the attitudes of the participants about the use of artificial intelligence (AI) in education. Data were processed using a software package for data analysis and processing (IBM SPSS statistic). The analysis of the obtained data was processed using descriptive statistics (average value - M and standard deviation - SD) and statistical inference. To evaluate the obtained values of Spearman's rank correlation coefficient rho and Pearson's correlation r, we relied on the value scale according to which the correlation is weak when $r \geq 0.1$, moderately strong when $r \geq 0.3$ and strong when $r \geq 0.5$ (Field, 2009, p. 100).

Instruments

Out of a total of 18 variables, for further analysis of the specific research task set in this work, 8 were selected from which a subscale was composed. The reliability of the scale was measured by Cronbach's alpha coefficient, which showed that α =876. The mean values of the subscale range from 2.81 to 3.49, which shows a high value of the internal consistency of the scale (Briggs and Cheek, 1986, p.115).

Descriptive statistics, scale reliability analysis and correlation analysis were used in the analysis.

The format of responding to the stated statements was analyzed using a five-point Likert-type scale (from 1 = I do not agree at all to 5 = I completely agree).

Results

In order to check the validity of H_0 by correlation analysis, we compared the respondents' attitudes regarding the following statements: (T1) The application of AI enables the personalization of learning (M=3.38, SD=1.108) and (T2) Personalized learning systems and approaches motivate students (M=3, 49, SD=1.276).

Table 1. *Presentation of correlation results and coefficient of determination for H_0*

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.558	.063	7.788	.000
	Spearman Correlation	.506	.061	8.637	.000[c]
Interval by Interval	Pearson's R	.508	.061	8.688	.000[c]
N of Valid Cases		219			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

The analysis of the results shown in Table 1 indicates that Chi square test of independence, which shows us the statistical significance of the impact on the result $\chi 2(16,1) = 261.497^a$, $p<0.01$. Significance ($p \leq .05$) indicates how certain can be that the relationship. $p<0.01$ shows that the intersection of variables is statistically significant. Spearman's rank correlation coefficient rho=0.506 and Pearson's linear correlation r = 0.508 indicates how strong the relationship is and in what direction, and in this case reflect a positive strong correlation and a direct connection between the application of AI that leads to the personalization of learning and motivation of students. Association measure Gamma shows how much of the variation in the changing variable (T1) is explained by the changing variable (T2). Gamma coefficient 0.558 means that knowing the level of acceptance of the first statement improves the prediction of acceptance of the second statement by 55.8%. H_0 was confirmed considering that a strong correlation was established between the statements offered and a high correlation was established between these two variables.

In order to verify the validity of H_1 by correlation analysis, we compared the views of the respondents regarding the statements made: (T3). The application of AI enables the most effective teaching methods (M=2.81, SD=1.259) and (T4) Automation of depositing and data analysis is necessary to monitor student progress. (M=3.33, SD=1.201).

Table 2. *Presentation of correlation results and coefficient of determination for H_1*

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.592	.063	7.842	.000
	Spearman Correlation	.543	.060	9.536	.000[c]
Interval by Interval	Pearson's R	.581	.049	10.528	.000[c]
N of Valid Cases		219			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

The analysis of the results shown in Table 2 indicates that Chi square test of independence, which shows us the statistical significance of the impact on the result $\chi 2(16,1) = 303.201^a$, $p<0.01$. Significance ($p \leq .05$) indicates how certain can be that the relationship. $p<0.01$ shows that the intersection of variables is statistically significant. Spearman's rank correlation coefficient rho=0.543 and Pearson's linear correlation r = 0.581 reflects how strong the relationship is and in what direction, and in this case indicate a positive strong correlation and a direct connection between the application of AI as the most effective teaching methods, and automation of depositing and data analysis for monitoring student progress.

Association measure Gamma shows how much of the variation in the variable (T3) is explained by the variable (T4). Gamma coefficient 0.592 means that knowing the level of acceptance of the first statement improves the prediction of acceptance of the second statement by 59.2%. H_1 was confirmed considering that a strong correlation was established between the statements offered, and a high correlation was established between these two variables.

In order to verify the validity of H_2 by correlation analysis, we compared the respondents' attitudes regarding the following statements: (T5) Teaching should provide students with innovative and interesting learning opportunities (M=3.43, SD=1.226) and (T6) Students' interactivity in the teaching process depends on interesting aspects of the teaching process (M=3.35, SD=1.062).

Table 3. *Presentation of correlation results and coefficient of determination for H_2*

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.458	.072	5.845	.000
	Spearman Correlation	.394	.065	6.306	.000[c]
Interval by Interval	Pearson's R	.430	.062	7.008	.000[c]
N of Valid Cases		219			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

The analysis of the results shown in Table 3 indicates that Chi square test of independence, which shows us the statistical significance of the impact on the result $\chi 2(16,1) = 104.031^a$, $p<0.01$. Significance ($p \leq .05$) indicates how certain can be that the relationship. $p<0.01$ shows that the intersection of variables is statistically significant. Spearman's rank correlation coefficient rho=0.394 and Pearson's linear correlation r =0.430 reflects how strong the relationship is and in what direction, and in this case indicate a positive strong correlation and a direct connection that indicates that innovative and interesting learning opportunities in the teaching process depends on interesting aspects of the teaching process.

Association measure Gamma shows how much of the variation in the variable (T5) is explained by the variable (T6). Gamma coefficient 0.458 means that knowing the level of acceptance of the first statement improves the prediction of acceptance of the second statement by 45,8%. H_2 was confirmed considering that a strong correlation was established between the statements offered and a high correlation was established between these two variables.

In order to verify the validity of H_3 by means of a correlation analysis, we compared the respondents' attitudes regarding the following statements: (T7) The application of AI should be focused on the analysis of difficulties that affected the slow progress of students (M=3.21, SD=1.153) and (T8) Determination of the factors that led to the slowing down of students' progress is the basis for finding methods for providing adapted help to students (M=3.13, SD=1.085).

Table 4. *Presentation of correlation results and coefficient of determination for H_3*

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.682	.058	10.638	.000
	Spearman Correlation	.613	.054	11.438	.000[c]
Interval by Interval	Pearson's R	.614	.053	11.446	.000[c]
N of Valid Cases		219			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

The analysis of the results shown in Table 4 indicates that Chi square test of independence, which shows us the statistical significance of the impact on the result $\chi 2(16,1) = 192.760^a$, $p<0.01$. Significance ($p \leq .05$) shows how certain can be that the relationship. $p<0.01$ indicates that the intersection of variables is statistically significant. Spearman's rank correlation coefficient rho=0.613 and Pearson's linear correlation r =0.614 reflects how strong the relationship is and in what direction, and in this case indicate a positive strong correlation and a direct connection that shows that the application of AI should be focused on the analysis of difficulties that affected the slow progress of students and determination of the factors that led

to the slowing down of students' progress is the basis for finding methods for providing adapted help to students.

Association measure Gamma shows how much of the variation of the dependent variable (T7) is explained by the dependent variable (T8). Gamma coefficient 0.682 means that knowing the level of acceptance of the first statement improves the prediction of acceptance of the second statement by 68,2%. H_3 was confirmed considering that a strong correlation was established between the statements offered and a high correlation was established between these two variables.

Discussion

The incorporation of contemporary technologies into the classroom is a logical progression of teaching approaches. The impact of new technology on education encourages lecturers and educational institutions to reconsider their existing methods because it is nearly impossible to envisage creating engaging learning experiences and drawing in new students without innovation. Programs to determine each student's strengths and weaknesses are widely available today, while artificial intelligence (AI) can significantly contribute to making learning more personal. Artificial intelligence (AI) solutions for education use complex algorithms to evaluate large data sets with the goal of modifying curriculum based on this data (student progress) so that students can advance at their own speed and get support when they need it.

Every student has a unique way of responding to information. Some people take in the information immediately, while others require more time. AI makes ensuring that educational software is customized for each user in the realm of education. Furthermore, the system leverages auxiliary technologies like machine learning (ML) to support the way students comprehend different topics and adjusts to that process to minimize effort. Educators and researchers can also generate creative content for easy teaching and learning using AI and ML. They devote a lot of time to administrative tasks like test grading and classroom organization. But a lot of these tasks can be completed by AI, giving lecturers more time to focus on instructing and interacting with students. Additionally, AI can identify patterns in student performance and notify instructors of any issues before they become unmanageable. Since students can access online material from anywhere at any time, AI-assisted education is not restricted by space or time. But even with all the potential benefits, there are drawbacks and ethical quandaries associated with using AI in the classroom. This kind of AI-powered learning offers accessibility and flexibility, which is especially important for those students who find it difficult to attend classes in person due to barriers related to their location or their jobs. In order to address common issues like algorithm transparency, equal access to technology, and student data protection, more time and effort must be put into developing new hardware and software as well as providing students with sufficient digital education. In any case, AI will be fully integrated into the education sector in the near future. As a society we must embrace this transformation and work together to ensure that education remains a source of progress and opportunity in an ever-evolving world.

For the purposes of research, in this paper, students presented their views and the role of artificial intelligence in the education sector, with a special emphasis on the role of AI in personalized learning. According to the results, it can be concluded that if learning is personalized through the application of artificial intelligence (AI), the greater the possibility that students will identify their abilities and creativity. This is consistent with a prior study that found that integrating AI into the classroom could reduce the workload for instructors, offer opportunities for effective learning, help students discover their strengths, and foster creativity (Humble and Mozelius, 2019). Students believe that if lecturers apply the most effective teaching methods using AI, they will be able to significantly automate the monitoring of student progress. This result is in line with Chaudhry and Kazim's study findings, which show that AI can automate a variety of tasks and monitor students' academic development. Additionally, by taking academic performance and the learning environment into account, it could help instructors implement the most successful methods of teaching (Chaudhry and Kazim, 2022). Also, the majority of students believe that if innovative and interesting learning opportunities are applied in classes, the more interactive the students will be in the teaching process. Wardat and his coauthors reached the same conclusion in their research, which is that AI can boost student interactions by providing dynamic and entertaining learning opportunities (Wardat et al., 2022).

Conclusions

The aim of this study was to investigate students' perspectives regarding the use of AI in personalized learning in order to obtain data that will assist legislators, educators, and AI developers in optimizing AI's role in education for higher student accomplishment. This study shows that students accept the claim that AI can examine students' past performance to identify areas of difficulty and provide tailored help in those areas. Given that AI technology is still in the early stages of development, more time is needed for its further development and elimination of all existing problems. Also, additional studies would more precisely examine the impact of AI on lecturers, students and the education sector as a whole and offer a more adequate understanding of all the advantages and disadvantages of intelligent learning systems in relation to uniform traditional teaching methods.

The study makes a valuable contribution to the field of educational technology and AI, with a strong foundation for future research and practical applications. The findings of this empirical study have the potential to be extended through additional research involving different populations of respondents, implementation and evaluation contexts, and evaluation methods. In light of our findings, we recommend that future research concentrate on a thorough investigation of the implications of artificial intelligence (AI) in education and closely look at the ways in which these applications enhance students' creativity, interaction, and learning outcomes. In addition to making lecturers' administrative tasks easier by enabling the automation of student progress tracking, special attention should be given to how AI pedagogical methods might increase student interest and engagement.

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Conflict of interests

The authors declare no conflict of interest.

Author Contributions

Conceptualization, B.R., and B.I.; methodology, B.R.; software, B.R.; formal analysis, B.R.; writing—original draft preparation, B.R. and B.I.; writing—review and editing, B.R. and B.I. All authors have read and agreed to the published version of the manuscript.

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