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ARTIFICIAL INTELLIGENCE IN EDUCATION: NEXT-GEN TEACHER PERSPECTIVES

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Abstract
The progress made by artificial intelligence (AI) worldwide has led, through the Beijing Consensus, UNESCO to recommend to governments, in 2019, to include AI in educational policies and processes. While numerous studies inventory students' and teachers' opinions on the use of AI in education (AIEd), this article differs by analysing the factors that influence the behavioural intention to use AI from the training stage of future primary and secondary teachers in Romania. Through exploratory quantitative research, carried out on a sample of 270 students from the Faculty of Education, Social Sciences and Psychology, the interaction of subjects with AI and the intention of integrating AIEd are followed using binary logistic regression. The analysis conducted shows that among the six variables of the model, "the confidence in personal ability to use AI" and "the perception of a greater number of advantages" have a positive and significant impact on the willingness to use AI in the educational process, more than "being previously used", "the knowledge level" or "student requirements". These findings are of particular importance for the revision of teacher training programmes and the development of educational policies that increase the confidence of future teachers in the ability to use AI, eliminating fears or misconceptions about AI.

Keywords: artificial intelligence; education; technology; future teachers; teacher training; behaviour intention; Technology Acceptance Model (TAM).

JEL Classification: O33, I20

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Introduction

Artificial intelligence has seen considerable development since 1943, when the first mathematical model that computerised the biological neurone was developed (McCulloch and Pitts, 1943), and 1956, when the Dartmouth conference, considered the birthplace of AI, took place (McCarthy, 1998). Recent developments in AI caused UNESCO (2019b), through the Beijing consensus, an event attended by 500 representatives of more than 100 member states, to provide guidance and recommendations on developing policies and practices in education that harness AI technologies.

Based on the identified literature, it is considered that the perception of teachers' behavioural intention to use AI (identified in the Technology Acceptance Model - TAM) has been under researched since the training stage (Davis, 1989). According to Choi, Jang and Kim (2023), "teachers hardly integrate AI educational tools and little is known about their perceptions of AI tools". There is also limited knowledge about how students and teachers use AI systems and how AI can be integrated into schools, colleges, and other educational institutions (Williamson and Eynon, 2020). Given the role of future teachers in implementing AI tools in their teaching and how they will inspire and influence generations of students, it is essential to understand their perceptions of AI and the factors that influence their behavioural intention to use the technology. Current research contributes to the development of the existing literature by identifying and testing a first set of factors that influence the use of AI in education. Based on these findings, as AI evolves and is better integrated into education, additional factors can be identified and a more detailed perspective can be generated on the best way to develop teacher training programmes so that teachers become interested and prepared to use AI in their work.

For a proper integration of AI elements in education, the aim is to get a clear picture of what stakeholders involved in the educational process want, by conducting as many studies as possible. AI has made considerable progress in fields such as healthcare and business, while in education AI is still in an incipient stage (Singh and Miah, 2019). Unlike most of the papers and books published so far, which focus on students' attitudes and perceptions of using AI in the medical field in the UK (Sit et al., 2020; Chan and Hu, 2023; Kairu, 2023), the present study investigates the perception of current students - prospective primary or pre-school teachers regarding the integration of AI in the educational process. Thus, the objective of the article is to explore the behavioural intention of future teachers to use AI and to identify factors that influence this intention. To this end, a model based on binary logistic regression was developed to determine the main factors that lead prospective teachers to use AI. The specific objectives of our research are: (1) to understand the degree of familiarity of future teachers with AI; (2) to study the perceptions of future teachers of the change brought about by AI in the educator's role; (3) to create a model that predicts the behavioural intention of future teachers to use AI and to identify the main factors that influence them. For this purpose, exploratory research was carried out with 270 respondents, current students of the Faculty of Education Sciences of the National University of Science and Technology Politehnica Bucharest - Pitești University Centre and the Râmnicu Vâlcea Territorial Centre. Most of the respondents attend these teacher training courses, being current or prospective teachers in primary or pre-school education in Romania.

One of the main desiderata identified worldwide is to increase the degree of "positive use" of AI elements in education (UNESCO, 2019b). Although there are policies and programmes that seek to integrate elements of AI into the education system, the success of this approach

will largely depend on the knowledge and perception of teachers at the bottom of the education system. Therefore, studying the intention to use AI is important, as it will be passed on, directly or indirectly, to the generations of children that future teachers will train.

The article is divided into three parts: (1) review of the existing scientific literature on the use of AI in education; (2) presentation of the research methodology, including a description of the method, sample, and its characteristics; (3) presentation of the results and discussions of the intention to use AI in future teaching careers and the factors that influence it, followed by the conclusions of the article.

1. Literature review

Today, the elements of AI are a reality that future teachers must understand and appropriately integrate into their teaching practices to ensure the efficiency and effectiveness of the educational process. Research by Kim, Soyata and Behnagh (2018) shows how AI can provide teachers with real-time feedback during presentations, analysing audio and visual elements of the presenter to determine the quality of the presentation and improve the audience experience. A similar approach is found in Woolf et al. (2013) who appreciate that AI can help improve education in the long term by personalising learning, improving student experiences by evaluating datasets of teaching behaviour, motivation, and social interaction. However, there are also negative aspects of AI, identified by Păvăloaia and Necula (2023), such as the high costs of integrating technology, the fact that it can lead to job losses and higher electricity consumption. It should also be considered that prolonged virtual time can cause dependency, lack of empathy, and communication deficiencies; moreover, there is concern about the security of the data used by AI, in case the data have vulnerabilities, can be compromised or stolen (Pisica et al., 2023).

Although most stakeholders understand the benefits and progress brought about by AI, its implementation is not as clear and there are many challenges and pressures on educational institutions to set guidelines and standards in the use of AI (Bonsu and Baffour-Koduah, 2023). Moorhouse and Kohnke (2023) showed that AI tools will generate substantial changes in curriculum and that teacher educators need support to develop the necessary skills to use AI appropriately. Integrating AIEd is a complex process, which requires from the outset to establish the correct working coordinates, so that teachers and students alike perceive the benefits of AI, the safe and constructive ways of using technology in their work.

Designing the right way to integrate AI into educational institutions requires first a clear understanding of the knowledge, skills, and perceptions of teachers and students alike. Numerous scientific papers explore the knowledge and preconceptions of teachers related to technologies, robots, or elements that generate artificial intelligence (GAI). Kaplan-Rakowski et al. (2023) show that the more teachers have a better outlook on GAI, the more often they use it. Based on this finding, the present research will analyse the extent to which future teachers in Romania perceive more advantages or disadvantages in using AI. The benefits of AI for teachers do not seem to be confined to generating content, Chounta et al. (2022) highlight that, despite their limited knowledge of this type of technology, Estonian teachers use AI as a tool to facilitate the access and use of multilingual content. Unfortunately, there is still no consensus on methods and techniques to use AI in teaching and research. Fahrman et al. (2020) explain this situation by the constantly changing skills of teachers and the fact that "researching, exploring and understanding this knowledge and skills

is also complex". Teacher technical skills, knowledge, and perceptions greatly influence student knowledge; therefore, this research will assess the extent to which prospective teachers used AI and will consider that they have sufficient knowledge of it.

The differences in perceiving AI can also be explained by age; Chan and Lee (2023) show that Gen Z (born 1990-2000) students are optimistic about the potential of AI technologies, while Gen X (born 1960-1980) and Gen Y (born 1980-1990) teachers acknowledge its benefits, but also express concerns about overreliance on, ethical and pedagogical implications of this technology. From this point of view, this research will examine teachers' perceptions of students' requirements to use AI and, respectively, the appreciation of students for teachers who use this technology. Therefore, AIEd is at the same time a challenge in respecting the authenticity of computer-generated content, which can lead to the "sacrifice of uniqueness and creativity" of the human mind, so it is imperative to adopt standards for responsible and ethical behaviour in the use of this technology (Dalalah and Dalalah, 2023). Holmes et al. (2022) point out that the low interest in the ethics of using AI in education may lead to an underdevelopment of this field, limiting the impact of AI and the usefulness of this technology.

A second broad category of scientific papers investigates the perception and interaction of students with AI. Chao et al. (2021) observe that attitudes toward AI among students tend to be predominantly positive. However, as Ravi Kumar and Raman (2022) note, students consider that AI can be used in teaching and learning activities or other administration processes, but do not trust its use in the assessment processes such as admissions or examinations. Doumat et al. (2022) complement this finding by pointing out that, although more than 57% of students believe that "assessment by AI is more objective", only 26% of them "want to be assessed by AI".

As with teachers, students understand the potential of technology, but see its implementation and use in their future careers as a distant and long process. Sit et al. (2020) confirm this with the example of medical students who feel unprepared but understand the growing importance of AI in their future work and therefore would like to learn more about it. Advances in artificial intelligence (AI) have also revealed problems with the accuracy of computer-generated data. Research by Dalalah and Dalalah (2023) shows that the use of AI in various professions, such as medicine, can be harmful by providing erroneous positive or negative test results, leading to delays in caring for health problems or the suggestion of unnecessary procedures or therapies. Such errors can also occur in the use of AI in student assessment. This may explain the opinion of students that "AI cannot replace the teacher", but at the same time they want more AI resources to help them achieve their educational goals (Zou et al., 2020). The difference between different types of AI resources stems from the perceived usefulness and simplicity of communication, as Kim et al. (2020) show, and the use of AI can work especially when face-to-face interaction is not possible.

Unlike previous works, the present research investigates the perception of AI among future teachers during their training stage and focusses on identifying the main factors and how they influence the behavioural intention to use AI. Future teachers will play a crucial role in integrating and using AI in the development and education of children and students from an early age, helping them to develop cognitive, social, and communication skills. This study takes place in a context where modern early childhood and school education is considered a key stage for the cultivation and AI literacy among children, as demonstrated by various

initiatives undertaken by organisations such as Stanford - AI4ALL or the International Society for Technology in Education (ISTE).

Studies such as those by Al Darayseh (2023), Limna, Kraiwanit and Jangjarat, (2023) or Leong and Chaichi, (2021) prove the importance of the scientifically established Technology Acceptance Model (TAM) used to explain the acceptance and intention to use new technologies (Davis, 1989). Building on this model, the present research will examine the intention of the behavioural to use AI (identified in the TAM) AI among prospective teachers. Just as Hasib et al. (2022) use logistic regression to predict student performance based on historical data, the present research aims to use binary logistic regression as a method to predict teachers' intention to use AI based on attitude and perception of its usefulness.

2. Research methodology

The purpose of the present research is to explore the intention of prospective teachers to use AI and to identify its determining factors. For this purpose, a quantitative exploratory research was carried out, using a questionnaire-based survey, which tests the perceptions of current students enrolled in teacher training programmes at the Pitești University Centre, the Faculty of Education, Social Sciences and Psychology, and its regional branch in Râmnicu Vâlcea. The questionnaire included 10 questions using the five-step Likert scale, from "to a very small extent" to "to a very large extent", 4 multiple choice questions, 1 open question, and 4 demographic questions. Given the difficulty of conducting research on a representative random sample, the sample included respondents based on the criterion of relevance, i.e., people studying education sciences and teacher education who are aware of the evolution of AI technology and use (Jurconi et al., 2022). The choice of quantitative research is justified by the objective of creating a model that predicts the use of AI by future teachers and identifies factors that influence this behaviour. This required recording as many responses as possible, in an organised way, allowing evaluation and validation of the data using statistical methods of analysis (Bell and Waters, 2018). In addition, quantitative research has the advantage of being more objective, by generating quantifiable results that allow for a possible generalisation of findings for the whole population.

The questionnaire was sent by e-mail to all undergraduate students enrolled in the Pedagogy of Primary and Pre-school Education section and to those enrolled in the Early Childhood Education Master's programme at the Faculty of Education, Social Sciences and Psychology, National University of Science and Technology Politehnica Bucharest - Pitești University Centre and Râmnicu Vâlcea Territorial Centre, most of them working or intending to work in primary or pre-school education in Romania. The responses were collected between May and August 2023 using the Google Forms platform, and data analysis and interpretation were performed using SPSS statistical software. Therefore, of a total of 370 students, 270 valid responses were recorded, resulting in a response rate of 73%.

Given that the integration of AI in education is still in its infancy stage, especially in primary and secondary education in Romania, the present research aimed to open the door for prospective teachers to use AI, and the respondents were not required to have practical experience teaching with the help of AI. Participation in the research was optional, voluntary, and completely anonymous in order to protect the identity of the respondents. When the questionnaire was distributed, the information message included the information that the completion of the questionnaire implied consent to the aggregate dissemination of the

research results. As illustrated in Table 1, 97.4% of the sample is female dominated, which is a characteristic of pre-school and primary education not only in Romania but worldwide. When it comes to technology, the age variable is seen as important in openness to new technologies. Thus, a balance between Generation Z respondents (41.48%) and Generation Y respondents (45.18%), and only a small share of Generation X participants (13.33%) is observed. Therefore, it can be said that the study is largely conducted in the age segment familiar with new technologies. In terms of education level, all research participants are pursuing Bachelor's or Master's degrees and are in the process of training for their future careers. Participants in the study included 21.1% of current students and teachers in pre-school and primary education, 39.62% of current students who want to become teachers in pre-school or primary education, and 39.25% of respondents who do not yet have a job and do not know what career path they will follow.

Table no. 1. Distribution of the sample by gender, age, level of education and current occupation or career plan

Gender		Age (years)		Level of education		Current occupation or career plan	
Female	263	18-23	112	undergraduate student	238	Currently a preschool teacher	38
		24-39	122			Currently a primary school teacher	19
Male	7	40-60	36	MA student	32	Future pre-school teacher	66
		> 60	0			Future primary school teacher	41
						Not yet employed and no career plan	106
270		270		270		270	

Source: Authors' own calculations

The study compares the perspective of two distinct groups: Group 1 – those students who have previously used AI and Group 2 – those who did not use AI. Several factors influencing the relationship between teacher and AI were examined, such as the level of knowledge of AI, the degree of interaction and previous exposure to AI elements, the readiness to use AI in teaching activity, the desire of future teachers for further training in AI, changes brought about by AI in student-teacher interaction, in improving the learning experience, the simplification of the administrative activities, the expectations of pre-school children / schoolchildren for the use of new technologies and their vision of integrating AI in the teaching and learning process. Following this analysis, a binary logistic regression was performed to predict the intention of future teachers to use AI and to understand its influencing factors. The following variables were established for this purpose:

- dependent variable: I17 – Behavioural Intention to Use AI in future teaching career (identified in the TAM);

- independent variables: I1 – Use of AI up to now; I3 – I have sufficient knowledge and can explain what AI means; I4 – I know how to exploit the benefits of AI in school/kindergarten; I6 – Pupils appreciate more the teachers who use AI; I8 – AI changes the role of the educator; I10 – AI will help improve student-teacher interaction; I14 – I consider myself able to teach with AI (identified in TAM as ease of use); I15 – A future

teacher needs to master and use AI; I16 – I consider there are more advantages to AI than disadvantages (identified in TAM as perceived usefulness).

The study of behavioural intention to use AI is of particular importance in the TAM model because it is the precursor to actual use (Davis, 1989). As can be seen in Table 2, for both constructs (attitude toward AI use and perception of AI usefulness), Cronbach Alpha coefficient (α) > 0.700, Average Variance Extracted (AVE) > 0.500, and Composite Reliability (CR) > 0.700, demonstrating an appropriate level of internal consistency between the variables used in the study (Henseler and Sarstedt, 2013; Nemțanu et al., 2021).

Table no. 2. Validity of the data used in the questionnaire

Construct	Variables	Loading	α / AVE / CR
Attitude towards the use of AI	I3 – I have sufficient knowledge and can explain what AI means	0.764	α: 0.737 AVE: 0.504 CR: 0.826
	I4 – I know how to exploit the benefits of AI in school/ kindergarten	0.860	
	I6 – Pupils appreciate more the teachers who use AI	0.764	
	I8 – AI changes the role of the educator	0.332	
	I10 – AI will help to improve pupil-teacher interaction	0.712	
Perception of AI usefulness	I1 – Use of AI up to now	0.179	α: 0.744 AVE: 0.533 CR: 0.833
	I14 – I consider myself able to teach using AI	0.751	
	I15 – A future teacher must master and use AI	0.874	
	I16 – I think there are more advantages to AI than disadvantages	0.850	
	I17 – Willingness to use AI in future teaching career	0.764	

Source: The authors' own calculations

Several hypotheses have been established on the basis of the papers published to date. The research conducted by Labrague et al. (2023) shows that previous exposure to AI technologies, knowledge about AI and competence in using AI lead to a positive perception and implicitly to a greater willingness to incorporate AI into subsequent practices. On the basis of this finding, the following two hypotheses are formulated:

H1: The previous use of AI significantly and positively influences the intention of behavioural use of AI in the future teaching career.

H2: Knowledge of AI significantly and positively influences the behavioural intention to use AI in future teaching careers.

Furthermore, the study by Ali (2017) supports the idea that teachers' willingness to use AI is directly influenced by what their students want and need. Therefore, teachers exposed to the enthusiasm of students and their positive experiences of using AI led to increased chances of incorporating AI into teaching methods, resulting in the formulation of the following hypothesis:

H3: Students' expectations and requirement to use new AI technologies significantly and positively influence the behavioural intention to use AI in future teaching career.

It is interesting to note how some teachers understand their role in helping students use technology, as well as how they view the use of AI in their own work (Ali, 2017). Specifically, teachers will play a key role in ensuring that AI is used correctly and ethically

to measure and assess student performance, that the data obtained is accurate, reliable, and true (Owan et al., 2023). All these observations led us to formulate the fourth hypothesis:

H4: The perception of the change brought about by AI in the educator's role significantly and positively influences the behavioural intention to use AI in the future teaching career.

The use of AI is slowed by external barriers (lack of easy access to hardware, software, tools and training) and internal barriers (lack of trust, negative beliefs and attitudes about using AI in school), thus, beliefs, confidence and attitude significantly influence the teachers' decision to use AI in their work (Rowston, Bower and Woodcock, 2022). The following hypothesis thus emerges:

H5: The perception of own ability /confidence to use AI in teaching significantly and positively influences the behavioural intention to use AI in the future teaching career.

A survey of 399 Hong Kong university students found that perceptions of the usefulness and willingness to use GAI technology increased as they identified its benefits in learning, writing and studying activities (Chan and Hu, 2023). This finding prompts the formulation of the following hypothesis:

H6: The perception of more advantages than disadvantages of AI in education (perceived usefulness) significantly and positively influences the behavioural intention to use AI in a future teaching career.

3. Results and discussion

3.1. Degree of familiarity of future teachers with AI

Upon analysis of the data, it clearly appears that up to the time of the research, 77.41% of the students enrolled in teacher education programmes have heard about AI, 27.04% have further researched AI, and only 20% used AI. To understand to what extent the use of AI contributes to changing perceptions, the results of the two groups were analysed: Group 1 – those who have actually used AI; and Group 2 – those who did not use AI, although they have heard or read about this technology. Thus, 59.26% of the respondents included in Group 1 used AI for educational purposes, 48.15% out of curiosity, or 37.04% for various work or even entertainment tasks. The low rate of use of AI is explained by the early stage of development of the technology.

The survey respondents rate their knowledge and understanding of AI as average, with higher values for Group 1 – those who have previously used this technology, as shown in Table 3. It is important to note that, regardless of the group, there is a high interest in improving the use of AI in the teaching process, with more than 76% of the respondents being interested in attending training courses on this topic.

Table no. 3. Level of knowledge of AI

Category of results	Group 1 – Used AI	Group 2 – Did not use AI
How well can they define/explain what AI entails	3.12	2.85
I know how to take advantage of AI in school/kindergarten	3.12	2.64

Note: arithmetic weighted average on a scale from: 1 – to a very small extent; 5 – to a very large extent
Source: The authors' own calculations

3.2. The change brought by AI in the educator's role

When it comes to the changes that AI brings to education, about half of the respondents, regardless of which group they belong to, are sure that AI will be used as a teaching tool in the future. An example in this regard is identified in China, where the collaboration of 60.000 schools has helped to implement a system of automatic essay marking, achieving a remarkable 92% accuracy rate, comparable to human assessment (UNESCO, 2019a). The computer uses an AI neural network and deep learning algorithms to compare student essays against human assessment.

That activity is followed, according to Table no. 4, by using AI as a virtual teacher assistant, being a possibility among 30% of those who used AI. Respondents in Group 2 – those who did not use AI – believe that AI, more than being a virtual assistant, will help personalise the learning experience (27%). The percentage of those who believe that AI will not change the educational process is insignificant, from 6% to 7%. However, it is interesting to note the difference between the two groups when it comes to the possibility that AI will replace the teacher. More specifically, 5% of those who did not use AI (Group 2) perceive AI as a possible threat and are considering the scenario of AI replacing the teacher, while it should be noted that none of the Group 1 respondents, those who used AI, considers this a plausible scenario. This result is also supported by the study by Edwards and Cheok (2018), which shows that machines lack the necessary capabilities for social interaction and emotional communication with students.

Table no. 4. Changes brought by AI in education and the role of an educator (% of total respondents)

Category of results	Group 1 – Used AI	Group 2 – Did not use AI
Changes brought by AI to education		
- Teachers will use AI as a teaching tool	**43%**	46%
- AI will be the virtual assistant of the teacher	**30%**	16%
- AI will be used by learners to customise the learning experience	20%	**27%**
- AI will not change the educational process	7%	6%
- AI will replace the teacher	**0%**	**5%**
Changes brought by AI to the educator's role		
- shift from traditional instruction to facilitation and mentoring	**43%**	**38%**
- shift from general and delayed feedback to instant and personalised feedback	**39%**	22%
- shift from mass learning to personalised learning	**37%**	25%
- instant lesson design at the time of teaching, without pre-planning	**31%**	25%
- extension of learning time outside the classroom	**26%**	19%
- relief from administrative tasks (e.g. parent feedback, centralisation of various situations)	17%	12%

Source: The authors' own calculations

To better understand how exactly the educator's role will change with the integration of AI into education, the main estimates of the respondents are presented in Table 4. There is a common perception between the two groups regarding the ability of AI to transform the role of the educator from traditional instruction and knowledge delivery to that of facilitator and mentor for students in the learning process. It is also estimated, especially among those who have used AI before, that there is an increase in the speed of response in terms of feedback

to students and personalisation. At the same time, AI will help relieve some of the routine tasks of the teacher (e.g., administrative tasks of centralising documents and results) and will be able to extend learning time by answering questions from students outside of the classroom.

The acceleration of the process of change, as shown in Table no. 5, can occur due to student demands. Thus, there is a common perception between the two groups regarding the expectations of preschool and schoolchildren of teachers to use AI (with an average of 3.87 and 3.49). This makes the integration of AI a necessity for future teachers to adapt to the requirements and maintain the interest of the students in teaching activities. Other possible benefits of using AI in education include improving student-teacher interaction, enhancing the preschooler/schooler learning experience, and transitioning to personalised education.

Table no. 5. Reasons, causes and effects for/of using AI in education

Category of results	Group 1 - Used AI	Group 2 - Did not use AI
Reasons		
Preschoolers or schoolchildren value the teacher who applies AI	3.87	3.49
AI will help to improve pupil-teacher interaction	3.31	3.13
AI will contribute to improving the learning experience of the pre-schooler / schoolchild and transitioning to personalised education.	3.24	3.32
I believe that there are more future advantages generated by AI than there are disadvantages	3.35	3.23
Causes and effects		
I believe that a future teacher should master and use AI in teaching	3.77	3.41
I consider myself capable of teaching using artificial intelligence.	3.00	2.79
I can see myself using AI in my future profession	3.62	3.29

Note: arithmetic weighted average on a scale from: 1 – to a very small extent; 5 – to a very large extent
Source: The authors' own calculations

Regardless of the group to which they belong, respondents agree that a future teacher should master and use AI in his teaching activity. The fact that the values recorded for the current ability to use AI in teaching activity (3.00 and 2.79) are lower than the predicted use of AI in their future activities (3.62 and 3.29) may indicate a tendency to openness and confidence in the ability of AI technology and its usefulness in future teaching activity. According to the recorded values, there is a non-significant difference between the intention of using AI in future profession between the two groups (average of 3.62 of those who used AI vs. 3.29 of those who did not use AI). This shows that future teachers are eager to implement elements of AI in the teaching-learning process, even when they have had less exposure to such technology and belong to generations with different digital skills.

A more detailed understanding of how to integrate AI into teacher work is presented in Table no. 6. Here again there is a common awareness of the two groups when it comes to the need to use AI in generating educational content and presenting it in the most interactive way for pre-schoolers and schoolchildren. AI is also expected to be a real support in personalising the learning experience of students and can be used as a virtual assistant available 24/7. This is consistent with the finding of Kim et al. (2020) that the use of AI will work, especially when face-to-face interaction is not possible.

Table no. 6. Ways of using AI in education (% of total respondents)

Category of results	Group 1 – Used AI	Group 2 – Did not use AI
- AI can create intelligent/interactive content and boost student engagement	**69%**	**50%**
- AI can help personalise the learning experience	**52%**	**42%**
- AI can help as a ready-to-use virtual assistant 24/7	**41%**	27%
- AI can automate administrative processes	**37%**	21%
- Based on the collected data, AI can be used to update curriculum and instructional methods	**35%**	11%
- AI can automate the assessment process	20%	13%

Source: The authors' own calculations

Significant differences can also be observed between the two groups regarding the use of AI in updating curriculum and training methods, a scenario agreed by 35% of Group 1 respondents – who used AI vs. 11% of Group 2 respondents – who did not use AI. This phenomenon can be explained by the ability of the respondents in Group 1 to understand the power of AI to use and interpret large amounts of data. What is also interesting to note are the differences between the groups in terms of the reluctance to involve AI in the evaluation process, particularly for the respondents in Group 2. These results are similar to those recorded by Doumat et al. (2022) who claim that only 26% of students "want to be assessed with AI". Samarescu (2021) presents a different perspective, showing that the use of AI in the assessment process would be beneficial, as it could provide detailed information and personalised feedback to students. The respondents were also given the opportunity to add to these usage options and complete them, by answering the open question "What is the most difficult task AI can help you?". Therefore, a large proportion of respondents see the usefulness of AI in "designing teaching activities", followed by reducing teachers "administrative tasks" by automating processes that currently take up a lot of time and would allow teachers to focus more on the teaching process. The respondents believe that AI could help to "capture and hold the attention of students for a long time", making the educational process more engaging and dynamic. Last but not least, respondents see value in integrating AI into "developing and managing online courses".

3.3. Future teachers' behavioural intention to use AI

More than the ways in which AI can contribute to improving teaching activities, the study aims – by means of a binary logistic regression – to explore the future teachers' behavioural intention to use AI and to identify its determining factors. Therefore, to identify the regression equation that predicts the extent to which future teachers are willing or not to use AI in their teaching process, the dependent variable I17 (Behavioural intention to use AI in future career) was considered, which registered the value of 1 (Yes) if the answer was positive and 0 (No) if the respondents did not intend to use AI in the future. Compared to the baseline version – Model 0 – where the correct estimation percentage was 80.7%, Model 1 includes the independent variables established in the research methodology and shows an improvement in accuracy, explaining the variation of the dependent variable in 89.3% of cases.

To validate the model, several tests were conducted, and certain parameters were checked. Thus, the initial regression model, Model 0, constructed using only the constant, is found to be valid (B=1.433; S.E.=0.154; Wald=86.246; Sig.=0.000; Exp(B)=4.192). The Chi-square

test shows that Model 1 is improved over the baseline model and is thus statistically significant (Sig.=0.000; Chi-square=120.206; df=6), and the value recorded -2 Log likelihood=144.373 and Cox & Snell R Square=0.359. The value recorded by Nagelkerke R2=0.575 shows that 57.5% of the predictors included in Model 1 explain the variation in the dependent variable (I17 - behavioural intention to use AI in the future teaching career). The last test carried out to verify the model is Hosmer and Lemeshow, and the recorded p-value > 0.05 confirms the validity and explanatory power of Model 1 (Chi-square=14.960; Sig.=0.60; df=8).

Table no. 7 shows the results of Model 1 regarding the likelihood that a future teacher will use AI in his/her future career. Thus, two predictors with a significant level of influence on the preference to use AI in the future can be observed, namely I14 and I16. The values confirm that self-confidence about the ability to use AI (perceived ease of use) and the prospect of more advantages of AI compared to possible disadvantages (perceived usefulness) significantly increase the likelihood that a future teacher will use AI in his/her career. Interestingly, other factors such as previous use of the technology (I1), background knowledge about AI (I3), the requirements of the students to use these technologies (I6) or perception of the changing role of the educator (I8) do not influence the future desire to use AI in the educational process.

Table no. 7. Variables in equation for Model 1

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. pt EXP(B Inferior	Superior
S	I1. Use of AI	1.421	.769	3.417	1	.065	4.141	.918	18.682
T	I3. Knowledge of AI	-.005	.220	.001	1	.980	.995	.646	1.530
E	I6. Required by students	.321	.208	2.379	1	.123	1.378	.917	2.073
P	I8. Change of	.141	.217	.420	1	.517	1.151	.753	1.760
1	educator's role								
	I14. Able to teach using AI	.716	.249	8.285	1	.004	2.046	1.257	3.331
	I16. More advantages than disadvantages	1.684	.291	33.537	1	.000	5.387	3.047	9.526
	Constant	-6.526	1.149	32.288	1	.000	.001		
a. Variable(s) introduced for step 1: I1, I3, I6, I8, I14, I16.									

Source: The authors' own calculations

The results recorded by I14 (B=0.716; Exp(B)=2.046; Sig.=004) contribute to validate hypothesis H5: The perception of your own ability / confidence in using AI in teaching significantly and positively influences the desire to use AI in a future teaching career. Thus, a person who considers himself / herself able to teach with AI will be twice as determined to use AI in the educational process. Similarly, the values recorded by I16 (B=1.684; Exp(B)=5.387; Sig.=0.000) lead to the validation of hypothesis H6: Perceiving more advantages than disadvantages of AI in education (perceived usefulness) significantly and positively influences the behavioural intention to use AI in the future teaching career. This highlights the importance of also presenting the perception of using AI in a positive sense, as accurately as possible, from the very beginning. This feature increases the chances of a future teacher to integrate AI technology into his/her work fivefold. These results are also confirmed by Al Darayseh's (2023) research, which states that behavioural intentions are determined by two types of factors: "expected benefits" and "ease of use". The values recorded for variables I1. Use of AI (B=1.421; Exp(B)=4.141; Sig.=0.065); I6. Required by the students (B=0.321; Exp(B)=1.378; Sig.=0.123); I8. The change in the educator's role (B=0.141; Exp(B)=1.151;

Sig.=0.517) suggest a positive relationship between these and the dependent variable I17. Behavioural intention to use AI in future career, yet the relationships between them are not significant, marking a value of Sig. > 0.05. As a result, the following hypotheses are partially validated: H1: Previous use of AI significantly and positively influences the willingness to use AI in future teaching career; H3: Students' expectations and requirement to use new AI technologies significantly and positively influence the behavioural intention to use AI in future teaching career; H4: Perception of the change brought about by AI in the educator's role significantly and positively influences the behavioural intention to use AI in future teaching career.

Knowledge of AI and the value recorded by the variable I3. The knowledge of AI (B = -0.005; Exp(B)=0.995; Sig.=0.980) prove that, in the case of the sample, the mere accumulation of knowledge of AI had no positive effect on the desire to use AI in a future teaching career. This invalidates H2: Knowledge of AI significantly and positively influences the behavioural intention to use AI in the future teaching career. Therefore, the above recorded result confirms that regardless of the level of knowledge or digital skills, there is a desire to improve and use AI in the educational process given the many benefits this technology can generate.

Conclusions

AI can complement and enhance the role of educators, ultimately contributing to more effective personalised learning experiences. The results of the present study, conducted on 270 future teachers, emphasise the fact that although 77% of them have heard of AI, only 20% have actually used AI to date, mainly for personal educational purposes. There is high interest among 76% of the respondents in taking further training in the field of AI, showing an understanding of the potential AI has for educational development.

On the contrary, the small percentage (5%) of those who did not use AI (Group 2) to date and perceive this technology as a threat should be noted, considering the scenario where the teacher is replaced by AI. The vast majority of the respondents value the use of AI as a teaching tool or virtual teacher assistant to enhance the student learning experience.

Although currently only 62.96% of the respondents consider themselves able to use AI in their future teaching work, it is noteworthy that 81.48% of them are convinced of the need to master and use AI technology in their future teaching career. Among the most important benefits identified by respondents in using AI are its use to create content and increase the level of interactivity for students, extend learning time and use AI as a virtual teacher assistant, as well as automating some administrative and evaluation processes. This will change the role of the teacher and accelerate the transition from traditional instruction and knowledge transfer to the role of facilitator and mentor for students in the learning process, as well as the transition from general to personalised instantaneous feedback. In the future, teachers are likely to do less administrative work and focus on teaching while receiving real-time suggestions to improve teaching methods and increase audience interest.

The regression model shows that the behavioural intention to use AI in the future teaching career is significantly and positively influenced by the perceived confidence in using AI (perceived ease of use) and assigning a positive role to AI by identifying more advantages than disadvantages (perceived usefulness). Examples of this could be the use of AI in

automatic writing assessment or giving teachers real-time feedback during presentations to improve the student experience. Surprisingly, these predictors seem more important than previous use of AI; student requirements and expectations of technology use; awareness of the educator's changing role as more and more AI elements are integrated into education. The results show that, regardless of the level of knowledge about AI or the digital skills possessed, there is a desire for further development and future use of AI in education. This reinforces the firm belief that the future of education will be fundamentally improved with the help of AI, and the time required to transition to this process is largely influenced by the self-confidence of teachers and the need for more and more positive examples in interacting with the said technology.

Theoretical contributions: This paper brings together and tests in a single regression model several predictors of behavioural intention to use AI in education and identifies those with the greatest impact. According to TAM, this intention is considered a precursor to actual use of the technology, enhancing the relevance of researching it during the training stage. The study provides valuable information that can lead to changes in attitude and behaviour in favour of adopting AI in education in the future.

Management implications: Research highlights the importance of confidence in the ability to use AI and understanding of the benefits that technology has to stimulate future intention to use AI in education. This finding can form the basis for improving training programmes and can contribute to the development of educational policies that accelerate the process of integrating AI into teaching in Romania.

Limitations: This exploratory research covers a limited geographical area and a small number of respondents to allow for a representative random sample. The still early stage of development and integration of AI in education, and the insufficient research on this topic, make it difficult to identify predictors of the intention of behavioural use of AI. The regression model used partially describes the dependent variable, with only two significant predictors identified.

Prospects: Integrating qualitative research would provide more information on motivations and behavioural intentions to use AI in teaching careers. Further studies could identify and analyse more factors that influence the intention to use AI. It would also be of interest to identify a group of active AI users and thus understand how to integrate AIEd. As technology advances and the educational context changes, future research is essential to update the perceptions and factors that influence the use of AI in education.

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