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The Will, The Skill, The Tool, And The AI. Exploring Factors Affecting Teachers' Intentions To Use AI And Technologies To Foster Inclusion

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Abstract: With the rise of educational technologies that use Artificial Intelligence (AI), this study explores future learning support teachers' acceptance and intention to use them in classrooms with students with Autism Spectrum Disorder (ASD). Research indicates that educational technology may significantly enhance learning for children with ASD in several developmental areas. However, integrating such technologies in schools remains under-researched regarding teachers' intentions to integrate such technologies in classrooms with ASD students. For that reason, this study aims to investigate it using the Unified Theory of Acceptance and Use of Technology as the theoretical framework. A questionnaire was administered to future learning support teachers enrolled at the eighth cycle of the Specialization course for those wishing to acquire the Learning support teacher's warrant to work in upper secondary schools. The findings reveal a positive predisposition towards the adoption of AI and technologies, particularly emphasizing the importance of AI knowledge as a factor related to the willingness to employ it in educational contexts. Additionally, intrinsic value, the enjoyment and reward derived from using technology, emerged as a significant factor impacting teachers' intentions to integrate AI and educational technologies in their classrooms.

Keywords: Educational Technologies; Artificial Intelligence; UTAUT; Autism Spectrum Disorder; teachers' training

1. Introduction

The European Agency for Special Needs Education and Inclusive Education (EASDNE, 2012) emphasizes the importance of improving the quality of initial and in-service teacher training through courses aimed at acquiring both pedagogical skills and "the ability to use information, communication and adaptive technologies to enable open learning modalities [author trad.]" (p.17). This aligns with the Sustainable Development Goals (UNESCO, 2017) that call for "inclusive and equitable quality education" and a "knowledge society" leveraging scientific progress with the intent of bridging the digital divide and promoting global interconnection (UNESCO, 2017). However, the rise of Artificial Intelligence (AI) requires further reflection. Miao & Holmes (2023) highlight the need to consider AI's impact on society, particularly on thought processes and human interactions, as well as the potential benefits and risks

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associated with its growing role in education. The first Round Table on Artificial Intelligence (AI) rightly emphasized the importance of ethical considerations within a framework of multicultural and interdependent values. Nevertheless, it is necessary to consider AI systems' capabilities that mimic human intelligence, too, such as perception, prediction, control, reasoning, and learning. The education field is potentially open to embrace this new challenge, considering the opportunities it may offer in terms of innovating teaching and learning practices and its potentials to bridge social inequalities in access to knowledge. However, this unexplored territory necessitates guiding principles of inclusion and equity to ensure everyone has access to AI-powered education. Additionally, pedagogical approaches should be improved or even reinvented to fully harness AI's potential (Miao & Holmes, 2023).

To date, a growing body of research explores the inclusive potential of technology for students with Autism Spectrum Disorder (ASD) (Aiello & di Gennaro, 2016; Bolte et al., 2010; Hume et al., 2021; Odom et al., 2015; Vivanet, 2014; Zervogianni et al., 2020). These studies highlight benefits in learning, social skills development, and improved adaptive behaviours (Bolte, Golan, Goodwin & Zwaigenbaum, 2010). This is particularly important because the heterogeneity and varying levels of severity of the ASD requires diverse educational and didactic strategies to promote full participation and social involvement of students with this disorder. Specifically, AI systems seem particularly promising in this regard because it may increase the opportunities for their participation and social involvement through personalized interventions and targeted instructions that support self-management and to support them in managing their own behaviour towards greater adaptation to contexts and increasing social interaction (Mazurek et al., 2019; Barua et al., 2022). Moreover, research on the adoption of AI models in education and teaching highlights both its potential and areas for consideration. On one hand, AI may improve practices by enabling teachers to personalize content and efficiently check assignments respecting the specific needs of students, leading to better learning outcomes (Chen, Chen & Lin, 2020; Huang, Saleh & Liu, 2021). On the other hand, it's important to distinguish between AI's role in content delivery, learning processes, assessment, and teacher empowerment (Miao, Holmes, Ronghuai & Hui, 2021). Teachers need to be aware of critical issues associated with AI use: data quality (e.g., copyright infringement), potential for bias and offensive content, apparent accuracy masking potential inaccuracies, and AI's ability to replicate but not understand information (Nazaretsky et al., 2022). Low public trust in AI, due to lack of understanding, further underscores the need for training teachers and students. This training should focus on developing skills for using AI, fostering critical thinking, and strengthening learning management systems through collaboration across disciplines (Nazaretsky et al., 2022). Based on these premises, therefore, the goal of this work is to investigate this study aims to investigate the factors influencing teachers' intentions to use technology and AI with students with ASD.

2. Unveiling the potential of AI-powered learning for students with ASD

Autism Spectrum Disorder represents a complex neurological condition characterized by a range of manifestations in communication and social interaction, repetitive behaviours, and restricted interests. This heterogeneity requires diversified approach in education and prompts researchers and educators to explore new avenues to foster inclusive process in classroom (Iavarone, Aiello, Militerni, & Sibilio, 2017). In this regard, many literature reviews and scientific investigations have demonstrated the effectiveness of several evidence-based educational strategies and interventions (Bolte et al., 2010; Hume et al., 2021; ISS; 2022; Odom et al., 2015), but there is also a strong interest and some degree of effectiveness in innovative interventions that involve the use of technologies (ICT – Information and Communication Technologies – or assistive technologies). These studies suggest that the use of devices, software, and digital environments may address the special educational needs of students with ASD by enhancing social, emotional, and academic skills, while also mitigating challenging behaviours (Bolte et al., 2010; Bonaiuti et al., 2022; Cottini et al., 2023; Hume et al., 2021; Kouroupa et al., 2022; Odom et al., 2015; Vivanet, 2013; Zervogianni et al., 2020).

Additionally, in recent years, special education is also embracing Artificial Intelligence for its potential to transform learning and development for students with disabilities, particularly those with Autism Spectrum Disorder (Barua et al., 2022; Garg & Sharma, 2020; Nazari et al., 2023; Rouhi et al., 2019). AI "intelligent agents", such as robots or specialized software, offer a range of benefits for caregivers, educators and students, including those with ASD (Barua et al., 2022; Garg & Sharma, 2020; Nazari et al., 2023; Rouhi et al., 2019). These include the chance to design personalized interventions, improve communication skills, and provide many individualized learning opportunities (Barua et al., 2022; Mazurek et al., 2019). This is possible thanks to the use of both conventional (such as Machine Learning) and advanced models (including those based on Convolutional Neural Networks) of Artificial Intelligence that, based on the inputs provided during programming, may guide the learning process of students by sharing outputs that can either negatively or positively reinforce a particular response, or guide the teacher in choosing the most appropriate programs or customizations based on the peculiarities of the learners (Barua et al., 2022; Keshav et al., 2017; Liu et al., 2017; Lampos, Mintz, & Qu, 2021; Rouhi et al., 2019). For example, the first model, known as Machine Learning, is trained on verbal or iconic data to perform complex tasks. For instance, it may support diagnosis or improve social skills (e.g., Garg, Das, & Aggrawal, 2023; Wedyan, Al-Jumaily, & Crippa, 2018). In this regard, the edugame Emotify (Rouhi et al., 2019) exemplifies it, too. It uses machine learning to help students with ASD recognize and understand facial expressions and communicate emotions effectively (Rouhi et al., 2019). To train the model, vocal datasets in English and German containing 850 samples labelled with four emotional states: happiness, sadness, anger, and neutrality, were used. Using machine learning algorithms and techniques, the edugame automatically evaluates the responses of the student with ASD and seeks to improve their emotional perception by providing suggestions to help them learn to recognize and express emotions appropriately. Similarly, Empowered Brain® smartglasses is an augmented reality system which has proven effective for children and adolescents with ASD in developing several skills in a playful manner. Their "Face Game" overlays a cartoon face on a real one, rewarding users for maintaining eye contact with the real person. Thus, progressively, the app encourages greater interaction with real faces, with adaptable difficulty levels and personalized feedback (Keshav et al., 2017; Liu et al., 2017). Another approach based on Machine Learning models is adopted by the research group of Lampos (2021) who developed a system that analyses teacher-student interactions with ASD. Based on information about the student (age, cognitive skills, etc.), the platform suggests communication strategies tailored to the student's preferences (Lampos, Mintz, & Qu, 2021). Artificial Intelligence models may also be employed to objectively detect and assess attention levels of children with ASD during task performance (Bernire, Al Thani, & Qaraqe, 2023; Li et al., 2023) and support the development of multiple skills. This includes fostering joint attention skills, provide feedback on mathematical activities, and support the monitoring process for acquiring metacognitive skills (Maras, Gamble, & Brosnan, 2019; Warren et al., 2015). As a final point, current research on the use of Artificial Intelligence is exploring the adoption of AI-powered robots to teach skills useful for social interaction, both in rehabilitative and educational contexts (Costa et al., 2018; Kim et al., 2017; Warren et al., 2015; Zhang et al., 2022). Even in these circumstances, through sophisticated algorithms and data-based analyses, AI models may identify student's learning style, strengths, and weaknesses through interaction, allowing for personalized learning paths that adapt in real-time (Costa et al., 2018; Kim et al., 2017; Ramdoss et al., 2012 a, b).

Thus, overall, Artificial Intelligence offers exciting possibilities for improving education for students with Autism Spectrum Disorder respecting their potentials and specific needs. AI tools may enhance attentive processes, reduce some situations of social stress in stimulating environments, and help students to manage frequent social stimuli shared during interaction, by acquiring numerous skills in various developmental domains. These tools may be used for trainings that complement educational interventions in social and real-life settings. This can extend teaching-learning opportunities beyond the classroom and promote generalization of skills across different contexts and with different people. However, the implementation of these technologies with AI, both in the social context and in inclusive schools, presents challenges. Although it is undeniable that technology and AI represent an essential cultural component and that they may support the teaching-learning process and the school inclusion of all (UNESCO, 2020; Vuorikari, Kluzer, & Punie, 2022), their successful adoption requires changes within the school system. This includes training for both learners and teachers, as well as a reevaluation of professional roles within schools (Rivoltella, Rossi, 2024; Vuorikari, Kluzer, & Punie, 2022). In this regard, it is indeed important to consider that there are several factors that may positively or negatively influence teachers' willingness and ability to adopt new technologies (Al-Gahtani, 2022; Chen and Zhang, 2022; Elhoweris and Al-Gahtani, 2023; Liaw and Huang, 2021; McCarthy and O'Connor, 2022; Knezek, & Christensen, 2016; Knezek et al., 2000; Venkatesh, 2022). Finally, there's a lack of research specifically exploring teachers' intentions towards AI tools for students with ASD. Further studies are needed to understand these intentions and identify appropriate training needs for educators.

3. Beyond the tool: factors which impact on teachers' intentions and acceptability of AI and technologies

Teachers play a central role in integrating technology and AI into the teaching process to offer meaningful learning opportunities. They may use these tools to create and share educational mediators adapted to individual needs and to engage all students (Goussot, 2014). However, simply providing technology isn't enough. Several factors, personal or environmental, may influence teachers' willingness to use and integrate effectively AI and educational technologies. The will to adopt technology and AI is closely linked to numerous variables that highlight the need for personalized strategies, specialized training, and support to facilitate the smooth integration of these technologies with AI models in school settings (Al-Gahtani, 2022; Chen and Zhang, 2022; Elhoweris and Al-Gahtani, 2023; Liaw and Huang, 2021; McCarthy and O'Connor, 2022).

In fact, the Will, Skill, and Tool (WST) model (Knezek, & Christensen, 2016; Knezek et al., 2000) sheds light on these factors. The primary factors that may influence the acceptance of digital tools in the classroom are: Will, Skill, and Tool. These respectively refer to the attitude and skills of teachers and the availability of the devices. In the first case, Will refers to teacher's attitude towards AI, including their beliefs about its impact on learning and their own motivations regarding technology. Positive attitudes correlate with increased adoption (Flogie & Aberšek, 2015; Kopcha, 2012; Petko, 2012; Polak et al., 2022). However, some teachers might believe that technological development has a positive influence in society but might not consider it useful in their class or might view the introduction of new topics like AI in training courses as a waste of time. Actually, some teachers might see AI as irrelevant or view training as unnecessary. The Skill factor addresses a teacher's confidence in using AI tools, including a particular focus on "Emerging Technological Skills" significant for integrating AI technologies in the classroom. In the end, Tool factor refers to the actual availability of digital tools (computers, laptops, tablets, and/or software) for use. The WST model emphasizes the need for personalized strategies and support. Training that addresses teachers' concerns and builds their skills can foster a positive attitude towards AI and its benefits. Therefore, based on this model, and consistent with international literature, the predisposition of teachers to adopt AI at school may be influenced by multiple factors. These include:

- *teacher preparation and perceptions*: this refers to teachers' readiness and willingness to integrate AI tools into their teaching practices (Al-Gahtani, 2022; Liaw and Huang, 2021; McCarthy and O'Connor, 2022).

- *Resourse availability and support*: this encompasses adequate technological infrastructure, sufficient training, perceived usefulness of AI tools, and how they fit within the teaching context (Chen and Zhang, 2022; Liaw and Huang, 2021).

- *Necessary resources allocation and support*: it involves dedicating resources and providing specific support to help the teachers to effectively integrate AI technologies in their contexts (Elhoweris and Al-Gahtani, 2023; Liaw and Huang, 2021).

Given this multifactorial nature and its influence on the acceptability and intention to implement educational technologies and AI at school, it seems appropriate to investigate which tools might be suitable for exploring these factors and then select and offer personalized strategies, specialized training paths, and specific support to facilitate the integration of technologies with AI in school settings (Al-Gahtani, 2022; Chen and Zhang, 2022; Elhoweris and Al-Gahtani, 2023; Liaw and Huang, 2021; McCarthy and O'Connor, 2022). A further relevant aspect, mentioned in some scientific reviews, is that existing research highlights a lack of standardized tools that assess teachers' readiness to adopt AI and educational technologies in classrooms with students with ASD. Nevertheless, a theoretical model that could be used for this purpose, because it aligns with the principles of the WST, is the Unified Theory of Acceptance and Use of Technology (UTAUT; Venkatesh et al., 2003; Venkatesh, 2022). This is a model that identifies the fundamental factors influencing the acceptance and use of technology. The UTAUT has made a significant contribution to technology acceptance research, combining several theories on technology acceptance and developing a prediction model that explains 70% of the variance in intention to use (Venkatesh et al., 2003). In terms of predictive power, it improves on previous models like the Technology Acceptance Model (TAM) (Davis, 1993).

According to this framework, the actual use of technology is driven by individual's behavioural intention, which may be influenced by five main constructs: performance expectancy, effort expectancy, social influence, facilitating conditions, and intrinsic value. Performance expectancy may be defined as the perception that using a system can improve teaching effectiveness. It is a strong predictor of the intention to use a technology both when one is required to do so and when one is not (Zhou et al., 2010). The second, effort expectancy, assesses the ease of use of a system, although its importance tends to diminish over time (Gupta et al., 2008). The third construct, social influence, is conceived as the perception of others' beliefs about using the system and is particularly influential when the adoption of technology is mandatory (Venkatesh et al., 2003). The fourth, facilitating conditions, is linked to the belief that organizational and technical support have a direct influence on the intention to use (Venkatesh et al., 2003); while the last construct, intrinsic value, can include personal satisfaction or pleasure derived from using the technology and can influence the willingness and readiness to use it (Khechine et al., 2020). All these factors, along with individual traits like experience and gender, may have a direct impact on an individual's propensity to adopt a technology and, consequently, on its actual use. In particular, gender can influence all factors, whereas experience may moderate relationships related to effort expectancy, social influence, and facilitating conditions, and the voluntariness of use can modify the link between social influence and behavioural intention (Venkatesh et al., 2003). Therefore, considering the strong correlation between teachers' intentions to use educational technologies and AI to promote the inclusion of students with ASD (Aiello, Sharma, 2018; Ajzen & Fishbein, 1980; Fishbein and Ajzen, 1975; Vidal-Hall, Flewitt, Wyse, 2020), this study aims to investigate the intentions of future learning support teachers to adopt and use technologies and AI adopting the UTAUT framework (Venkatesh et al., 2003; Venkatesh, 2022).

3. Methodology

3.1. Objective

The purpose of this study is to investigate the intentions to adopt and use technology in classrooms with students with ASD. Specifically, the aim is to identify which independent variables influence the intentional behaviour in the use of technologies and AI with students with ASD.

3.2. Sample and Procedure

The study uses a convenience sample of 147 future learning support teachers enrolled at the eighth cycle of the Specialization course for those wishing to acquire the Learning support teacher's warrant to work in upper secondary schools at the

University of Salerno (academic year 2022/2023). Data were collected at the beginning of the course. All participants (N = 147) were invited to voluntarily and anonymously complete the questionnaire.

3.3. Data Collection Instrument

The questionnaire is divided into three parts. The first section aims to detect the gender and age of the participants, the second one explore, with a 7-point Likert scale, the level of knowledge of artificial intelligence and whether they would use it in teaching, and finally the third section is composed of 41 items aimed at investigating the intentions of future support teachers to adopt and use new technology.

The scale, present in the third section, is structured based on the version by Venkatesh et al. (2003), Oye et al. (2012), and Khechine et al. (2020), and is divided into six areas: the first factor is Performance Expectation (PE) according to the UTAUT model by Venkatesh et al. (2003) which is a key component to understand how individuals evaluate the impact of technology use on their work performance. This expectation is measured through a series of statements ranging from PE1 to PE10, which explore in detail users' perceptions of the contribution technology can make to improving their work activities. People tend to adopt the use of technologies they perceive as useful in increasing their efficiency and productivity. Concurrently, the second factor, Effort Expectation (EE), is examined through items ranging from EE1 to EE8 and concerns the perceived ease of use of the technology. This dimension focuses on how intuitive and effortless it is to adopt and use new technology. If users see a technology as easy to use, they are more likely to develop a positive intention toward its use (Venkatesh et al., 2003). The third factor corresponds to Social Influence, investigated from SI1 to SI5, captures the extent to which perceptions of pressure or support from peers, superiors, and significant others can influence a user's decision to adopt technology. This dimension is based on the theory that individuals' actions are often influenced by the opinions and attitudes of those around them (Venkatesh et al., 2003). Facilitating Conditions, which corresponds to the fourth factor, explored by items FC1 to FC5, refers to individuals' perceptions of the existence of adequate organizational and infrastructural support that can facilitate the effective use of technology. If users believe the organization provides the necessary support, such as training or technical assistance, they are more likely to use the technology. In technology adoption models, intention plays a critical role as an antecedent to action. Fishbein and Ajzen (1975) emphasized the importance of measuring behavioural intention in predicting the execution of a voluntary action, unless the intention itself changes before the action is executed. This behavioural intention is examined by the fifth factor and therefore by items BI1 to BI5. Finally, the construct of intrinsic value is described as the feeling of pleasure and interest in performing an activity, a dimension that traces intrinsic motivation. This concept, as explained by Wigfield and Eccles (2000), refers to the interest and enjoyment derived from performing a task for its own sake, rather than to achieve external goals or rewards, and can be a predisposing factor for the adoption and continued use of technology, regardless of perceived performance or benefits. The intrinsic value, or the sixth factor, is investigated by items V1 to V4 (Khechine et al., 2020). These items were assessed on a five-point Likert scale (from strongly disagree to strongly agree).

3.4. Analysis and Results

Initially, a descriptive analysis of the data was conducted regarding age and gender and the subtests. For reliability and internal consistency of the test, Cronbach's Alpha was calculated. Finally, to investigate the impact between the independent variables (PE, EE, IS, FC, VI) and intentional behaviour (BI) a multiple linear regression analysis was conducted using SPSS. Additionally, a correlation analysis was conducted between age, gender, and scores on items on the "level of knowledge of artificial intelligence" and whether they would use it in teaching and the UTAUT subtests. From the descriptive analysis of the contextual data, it is noted that the average age of the course participants who responded to the questionnaire is 38.06 (SD=8.14), most of the questionnaire participants are female, and just over half have previously held a teaching role as shown in Table 1.

Table 1. Frequency and percentage: gender and teaching occupation.

Category	Number	Percentage
Female	121	82.31%
Male	26	17.69%
Has Held Teaching Role (Yes)	79	53.74%
Has Held Teaching Role (No)	68	46.26%

Additionally, considering that the Likert scale used in the questionnaire ranges from 1 (little) to 7 (a lot), the data show an interest and use of technologies and AI among participants (Mean=3.66; SD=1.79), with a desire to deepen the knowledge of AI (Mean=3.86; SD=1.82). Regarding the subtests as shown in Table 2 and considering the context of the research and the interpretation of the constructs according to Venkatesh et al. (2003), it is recorded that the performance expectation (PE) with a mean of 3.22 and a standard deviation of 0.90, shows a moderately positive perception of the impact of technology on work performance. Regarding the effort expectation (EE), with a mean of 3.09 and a standard deviation of 0.72, future special education teachers perceive a moderate ease of use of the technology. Instead, the mean (2.95) of the items of the social influence subtest (SI) suggests that the latter has a significant and moderate impact on the acceptance of technology. This may indicate that, although there is some social pressure to use technology, individuals may not consider it the most determinant factor. Similarly, the mean of the items of the facilitating conditions subtest (FC) is 2.91, the lowest among the subtests, with a standard deviation of 0.92 and a Cronbach's Alpha of 0.93, suggests that there are variable perceptions about the availability of organizational support for the use of technology. However, the internal consistency is strong, indicating that the FC1-FC5 questions are perceived as connected to each other by participants. As suggested by the literature (Khechine, et al., 2020) the intrinsic value subtest (IV) has the highest average score (3.64) and high internal consistency (Cronbach's Alpha of 0.97), suggesting that individuals find pleasure and interest in the use of technology, which may encourage the adoption and continued use of the same. Finally, concerning the dependent variable of the study, it is evident that behavioural intention (BI) has a high average (3.48) and a Cronbach's Alpha close to unity (0.93) reflects a strong intention to adopt the use of technology in teaching. This high value is consistent with the theory that sees intention as a strong predictor of action.

In summary, the results suggest a general acceptance of technology in teaching, with behavioural intention and intrinsic value as the strongest predictors of technological acceptance. Performance Expectation is evaluated positively, indicating that users recognize the benefits for their work performance. However, Facilitating Conditions are perceived as less satisfactory, suggesting that there may be areas for improvement in infrastructural and organizational support for the effective use of technology.

Table 2. Reliability and descriptive analysis of the UTAUT subtests.

Subtest	Mean	Standard Deviation	Cronbach's Alpha
BI	3.48	0.84	0.93
PE	3.22	0.90	0.95
EE	3.09	0.72	0.89
SI	2.95	0.82	0.82
FC	2.91	0.92	0.93
IV	3.64	0.99	0.97

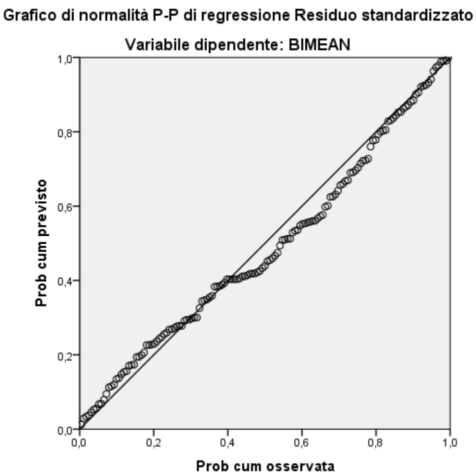
In addition, as anticipated, a multiple regression analysis was conducted which predicts the dependent variable behavioral intention (BI), from table 3 it is recorded that the performance expectation (PEMEAN), although it has a negative beta coefficient (-0.124) and is not statistically significant ($p = 0.080$), this could suggest that high performance expectation is not the main driver of behavioral intention (BI) in the use of technology in the teaching context. In other words, although individuals recognize that technology could improve their performance, this alone does not seem to be sufficient to explain their intention to adopt technology. Instead, the effort expectation (EEMEAN) shows a significant positive influence ($B = 0.420$, $p < 0.001$), indicating that the perceived ease of use has a strong impact on the intention to use technology. This is in line with the literature, which states that users are more inclined to adopt technologies they perceive as easy to use. Even if the average of the social influence subtest (SIMEAN) is not very high, a positive and significant incidence on behavioral intention ($B = 0.255$, $p < 0.001$) is recorded. This suggests that the perceived support or pressure from colleagues and superiors plays an important role in the intention to adopt technology in teaching. Instead, the negative coefficient (-0.131) with significance ($p = 0.039$) of the facilitating conditions subtest (FCMEAN) indicates that, paradoxically, more positive perceptions of facilitating conditions may be associated with a lesser intention to use technology. With the highest coefficient (0.572) and highly significant ($p < 0.001$), the intrinsic value subtest (IVMEAN) indicates that pleasure and interest in the use of technology are the strongest predictors of the intention to use technology in teaching. This reflects the literature that supports that intrinsic motivation can be a powerful factor in technological adoption, perhaps even more than performance evaluations or ease of use. In summary, while ease of use (EE) and social influence (SI) are important factors that drive the intention to use technology, it is intrinsic value (IV) that emerges as the strongest predictor. This might suggest that, in the specific context of teaching, teachers and students may be more motivated by the personal pleasurable and rewarding experience that technology offers, rather than mere utility or ease of use. Negative perceptions of facilitating conditions (FC) affecting intention may require further investigation to better understand the nature of this relationship. Table 3. Regression analysis with dependent variable Behavioral Intentions (BI).

Table 3. Regression analysis with dependent variable Behavioural Intentions (BI).

Variable	Coefficient Beta (B)	Standard Error Deviation	Standardized Beta	t	Significance (Sig.)
(Costant)	0,130	0,174		0,746	0,457
PEMEAN	-0,124	0,070	-0,132	-1,766	0,080
EEMEAN	0,420	0,095	0,363	4,434	<0,001
SIMEAN	0,255	0,058	0,248	4,366	<0,001
FCMEAN	-0,131	0,063	-0,143	-2,088	0,039
IVMEAN	0,572	0,050	0,675	11,360	<0,001

These findings are also reflected in the graph (Fig. 1) of P-P normality of regression of standardized residuals which supports the adequacy of the regression model used to examine the acceptance of technology in teaching; indeed, most points fit well to the line, indicating that the standardized residuals conform to the expectations of a normal distribution. This supports the assumption of normality of residuals in the regression model.

Figure 1. P-P Normality Graph of Regression of Standardized Residuals.



Finally, a correlation analysis was conducted between age, and scores on items the level of knowledge of artificial intelligence and whether they would use it in teaching and the UTAUT subtests. A significant negative correlation is recorded between age and knowledge of artificial intelligence (-0.297 with p=0.00) and use of AI (r=-0.252 with p=0.03) in teaching which might suggest that younger individuals tend to have a greater familiarity with artificial intelligence. A positive correlation between gender and "(0.168*) indicates that the male gender is more informed about artificial intelligence, a relationship to be investigated in a future study. In addition, a significant correlation (0.313, $p < 0.001$) between effort expectation (EE) and "Knows artificial intelligence" this suggests that those who have greater knowledge of artificial intelligence perceive it as easier to use, potentially due to greater familiarity with technology. This data is in line with the correlation between Social Influence (SI) and knowledge of artificial intelligence (0.233, $p = 0.005$), suggesting that people who perceive greater social support are also those more informed about artificial intelligence, and with facilitating conditions (0.320, $p < 0.001$) indicating that those who are more informed about artificial intelligence perceive greater support for its use and tend to use it, indeed a significant correlation with positive tendency ($p<0.05$) is recorded between FC and the use in teaching of AI ($r=0.219$). Finally, there is a moderate positive correlation between knowledge of artificial intelligence and Behavioural Intention (BI) (0.193, $p = 0.019$), suggesting that greater familiarity with artificial intelligence can encourage the intention to use it, although it is not the most determining factor. These correlations underscore the importance of knowledge of artificial intelligence as a determining factor for its adoption in teaching. Being informed and having a good understanding of artificial intelligence correlates positively with the propensity to use it, and this has direct implications for educational and training strategies. Moreover, the perception of technical and organizational support ("FCMEAN") is crucial, suggesting that the effectiveness of technological adoption in education can be improved through training and infrastructure.

4. Discussion and Conclusions

This study explored the intentions of future special education teachers regarding the adoption and use of AI and digital technologies in inclusive classrooms, with a particular focus on students with ASD. Applying the Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003), the results highlighted a generally positive predisposition towards the integration of AI and technology in the educational context. Specifically, knowledge of AI was found to be a key factor positively influencing the willingness to employ it for educational purposes, especially among younger participants. Perceived ease of use, social support, and particularly the intrinsic value associated with the use of technology, emerged as significant elements motivating teachers to consider the integration of AI and digital technologies into their teaching practices. Intrinsic value represents the most influential factor in shaping the intention to use these tools, emphasizing the importance of a rewarding and personally enriching user experience for teachers (Khechine et al., 2020). Despite the positive attitude and willingness to adopt Artificial Intelligence and digital technologies, the study also highlighted the need to create adequate facilitating conditions, such as opportunities for specific training and technical support, to ensure the effective integration of these resources within the educational setting. Teacher training, therefore, emerges as a crucial aspect to fully exploit the potential of AI and technology in promoting inclusion and enhancing the learning of students with ASD.

In conclusion, while AI and digital technologies represent promising resources for innovating teaching practices and increasing school inclusion, it is essential to invest in teacher preparation. This includes not only updating their technological skills but also supporting their understanding of the benefits and potential of AI in the educational context, to overcome any barriers and to promote a conscious and effective use of these technologies. Continuous training and support for teachers are, therefore, key elements to realize an inclusive and future-oriented educational transformation (Miao & Holmes, 2023).

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