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Psychological Factors Influencing the Acceptance of AI Tools among Teachers and Students in inclusive Classroom

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ABSTRACT

The present research investigated the psychological aspects that affect teachers and students in inclusive classrooms in public and private educational institutions in the Pakistani province of Punjab when artificial intelligence (AI) tools are implemented. Quantitative as a form of correlational research design, the additional data was collected according to the population of 250 people on the basis of whom standardized questionnaires were used to assess their perceptions in the rating scale of perceived usefulness, digital self-efficacy, technology anxiety, and the acceptance of AI tools. Data analysis was done using the methodology of the Pearson and simple linear regressions. These findings showed that the level of significant positive correlation between perceived usefulness and acceptance of AI tools is true and that perceived educational usefulness is considered to be a strong predict ant to the adoption of AI tools in an inclusive classroom. Digital self-efficacy has also been observed to be helpful in determining their readiness to acquire AI learning platforms owing to the high requirement of digital skills as an investment into matters of technology adoption. The negative correlation that turned out to be important is that between technology anxiety and AI tool acceptance where abnormal psychology towards technology prevents the use of technology in an inclusive learning environment. The same results confirm the application of available theories of technology adoption and also develop the frameworks that will be applied in culturally localized and all-inclusive classrooms in Pakistan.

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1. Introduction

The rapid adaption of artificial intelligence (AI) to education has changed the traditional educational process, offering opportunities for personalized study and inclusivity. AI tools are used in inclusive classrooms to bring together students with diverse backgrounds, skills, and learning styles in order to meet individual needs and enhance academic performance. However, the massive infrastructural readiness is not the only aspect that is required to facilitate the successful rollout of the AI technologies, and the psychological orientation of the primary users of the platform, teachers and students, to it. Main factors that determine the use of AI are the various psychological factors which include perceived usefulness, technological self-efficacy, perceived ease of use and anxiety towards technology (Gado et al., 2022). Such psychological determinants will become instrumental to the circumstances of inculcation of AI within the classrooms which embrace both the mainstream students and the students with special educational needs in this case in environments that are evolving inclusive education (i.e., Pakistan). The use of new technology is not usually embraced by teachers particularly when handling the highly diversified student populations with different needs of support (Hamilton, 2022).Likewise, the AC of AI tools is determined by the confidence with which they roll with the technology-based skills, their pre-existing knowledge, and the perceived utility of AI-based learning-aid. The level of comfort and intimations can have a varying degree of effect on the attitude of learners with learning disabilities or communication issues in an inclusive environment with the help of AI supported instruments. Such dynamics imply the need to consider psychological enablers and barriers, when developing AI-based interventions in inclusive education (Teo & Zhou, 2017).Moreover, it is important to develop a psychologically favorable environment in which teachers and students will feel self-sufficient and safe to apply AI technologies in order to integrate them sustainably. Although there is a lot of employment of AI in the education systems of the entire world, there has also been a lot of research on South Asian regions, especially Pakistan. Previously published studies mostly covered infrastructural constraints, policy considerations and pedagogical approach, whereas less was said about the psychological preparation of both teachers and students to the AI integration in inclusive classrooms (Khalid et al., 2025).A lack of such knowledge, as it is an important mental background, may lead to the deficiency of AI projects and callousness despite the positive resources. Speech-to-text applications, predictive learning software, and emotion recognition systems are AI tools that cannot be embraced, and they mainly depend on the emotional readiness of their users. As stated in one of the studies conducted by (Naseer et al., 2025).organizational flexibility and the basic psychological preparedness are critical components that influence success or failure of technological innovations in all lines of operation, a revelation that is also true with regard to educational technology integration. By tackling these psychological issues, one can promote the normalized shifts, reduce the stress levels caused by technologies, and achieve a higher volume of interactions with AI in multicultural classrooms.

The present paper seeks to delve into the aspect of processing the effects of the psychological variables on the acceptance of AI by teachers and learners in inclusive learning environments in Pakistan. It aims at determining the psychological aspects that are catalysts and those that are obstacles to the implementation of AI in such environments. As more and more attention is paid to equity, accessibility and individualized learning experience, with its key determinants in psychology, it plays a critical role in setting education policies, teacher professional development of educational technologies (Liu & Liao, 2019).The investigation of the variables like the technology-related anxiety, perceived usefulness, self-efficacy, and openness to innovation makes the study relevant to a better understanding of human aspects of AI implementation in inclusive education facilitation or hindrance. This kind of knowledge will be very helpful as an educational policymaker, school administrator, and AI developers, who want to improve the educational environment by making it more adaptive, inclusive, and psychologically supportive.

1.1 Psychological Factors Shaping AI Acceptance

The aspects of perceived usefulness (of the AI tool), and perceived ease of use are significant psychological dimensions in the way both the teachers and the students determine whether they should be involved in the use of AI tools in the educational setting. Perceived usefulness can be determined by the fact that individuals believe that the use of AI will improve performance and result, whereas perceived ease of use addresses the importance of how simple the technology seems in its utilization. (Akinde, 2016),opined that these two ideologies comprise the theoretical roots of the Technology Acceptance Model (TAM). Several researchers have been using TAM in many organizational and educational environments in an attempt to anticipate technology acceptance behavior. The perceptions of the AI that teachers have in the classroom, especially inclusive classrooms, contribute massively to whether they will adopt the use of such tools in their teaching or not, determined by their perception of how simple instructional work will be with the aid of the tool, how they will facilitate differentiated learning, and how students will perform. (Abdi et al., 2025),indicates that perceived technological benefits in organizational setting often have a direct implication on usage and acceptance of innovation through an argument that also applies in educational settings that have to go through the process of adopting AI.

According to (Bakour, 2024),the results of that study showed that psychological preparation, the one where individuals have self-belief and sense of competence, has a decisive contributive role in determining technology adaptation behavior as seen in the case of organizational systems, a factor that can also be replicated in learning institutions. Due to the potential learning challenges experienced by students in inclusive classrooms, in these classrooms, 2. Developing digital self-efficacy is even more crucial to provide an egalitarian access to digital technologies and lessen a hesitation associated with their use. Another great psychological barrier towards mainstreaming of AI in institutions, more so in those institutions that provide education to learners with different educational levels is fear of technology. Such nervousness is pegged on the fear of not being knowledgeable of how to use new systems, or make errors, or that technology fails in instances of teaching or learning. The teachers feel some form of anxiety as regards to the feasibility of AI, chances of an alteration in the classroom management, or infringement of the student related aspects of teaching. Equally, the students might exhibit unwillingness to accept AI tools in cases where such tools require new skills of digital abilities or rather be impersonal and harsh compared to human one.

As it can be seen in the study by (Ali et al., 2024),even such emotional response as anxiety can affect professional performance, as well as decision-making of professionals across the services, which is relevant in an inclusive setting with AI tools implemented in teaching by educators. (Zhang et al., 2023),takes a step further to demonstrate that the intention of the use of technology and its acceptance occur when anxiety towards all items related to technology is reduced, and this is done through specific training, affirmative leadership and positive peer experiences. of AI-enabled educational technologies. Similarly, a student that shows open-mindedness to new learning forms and digital experiences, is more likely to gain access to the AI mediated personalized learning opportunity. According to (Karan & Chakma, 2025),one of the factors which determine the level of psychological preparedness towards the adoptive of technology is the personality characteristics of people; their previous experiences and their exposure toward successful experiences of integrating technology in their settings. (Lin et al., 2025),stated that the establishment of the culture of innovation in organizations provides impetus that enables the staff to learn to embrace new systems and solutions instead of resisting, and contribute to the changes brought into practice by technology, which is also a critical measure in education. Inclusive classrooms should consider fostering openness to AI so as to make its presence more normalized,

reduce resistance and help both teachers and students realize its potential in not only facilitating more equity, accessibility and instructional effectiveness.

1.2 Artificial Intelligence in Inclusive Classrooms

Artificial Intelligence (AI) as a factor in educational systems has opened new opportunities to work with such diversity in learner needs as are present even in an inclusive classroom. AI learning aids (intelligent tutoring systems, adaptive learning system, and AI-aided assessments), have the potential to individualize the learning experience and provide personalized instructional plans to students with different academic skills and socio-emotional requirements. This orientation is particularly important when in inclusive environments, educators will need to cope with the classroom which has learners with physical, cognitive, and behavioral disparities. Artificial intelligence is one of the technologies that can help educators by giving real-time feedback in regards to student progress, detecting learning gaps, and proposing precise interventions to improve student performance. The potential of AI to retrieve and analyze huge students' data will enable more informed teaching decisions, in the end supporting equity and inclusivity in education (Viberg et al., 2024),According to findings by(Ai et al., 2022), personalized learning spaces through AI-enabled processes do not only support enhanced standards of academic performance but also increases engagement levels and motivational rates among learners, especially those who normally perform poorly in the mainstream education system.

The usage of AI in the context of inclusive classroom is not limited to providing academic instruction because it includes assistive functions which help in accommodating students with disabilities and special educational needs. Text-to-speech software, AI captioning technologies, emotion-recognition tools, and virtual assistants can make the classroom experience fun and engaging to students with visual, auditory, or cognitive disabilities so that they can interact with their peers. These new innovations bring about connectedness and make education in any case available to anyone, irrespective of his/her restriction. Besides, the use of AI can support a decrease in the workload of teachers, saving time on common administrative work, offering information about students learning patterns, and simplifying the process of differentiated instruction. According to (Aftab et al., 2024),the adoption of technology in service-related professions has been known to be dependent on its potential to increase efficiency and interpersonal experiences, which is an equally applicable notion in the case of inclusive educational settings in which AI will enable not only more effective teaching but also greater interest in participating in the process. Moreover, (Xia et al., 2022),also points out that educators are more willing to use AI tools when they consider them safe, and their benefits outweigh incoming costs, and tools do not only serve as restrictions but as support.

Nevertheless, though AI possesses significant advantages as to the joint promotion of inclusive education, it can only be successfully implemented in case of the psychological readiness and acceptance of educators and learners. The educators have to feel secure about their capabilities to operate AI technologies and acknowledge the importance of its role in the furthering of the inclusive practice. Meanwhile, students have to find these technologies friendly, helpful and encouraggive of the learning process. (Shubha et al., 2025),emphasizes that technological innovation is one of the leading factors affecting organizational changes, and the psychological readiness of individuals, who are supposed to be involved into the new system, is one such force, which also is present within the educational establishments. (Zappalà et al., 2024),opine that the psychological variables important in determining the outcome of technology consideration include the perceived usefulness, ease of use and anxiety issues that may arise due to technology .As it was noted by (Khan et al., 2025),organizational system innovations tend to be successful as long as they are contextual in terms of sensitivities and the same should be implemented even in the context of AI adoption in education. Further, the teachers and the

learners, as it has also been proved to be by (Alyoussef et al., 2025),will be expected to see the AI tools as not only resourceful, but also as something that can be handled and assimilated into the already existing teaching and learning processes. Placing AI in the context of assistant and not a replacement of, human judgments and interpersonal communication in the classroom, the sphere of inclusive education can become more open and democratic to all and ultimately liberating to students and the teachers alike.

1.3 Research objectives

1. To examine the psychological factors influencing the acceptance of AI tools among teachers and students in inclusive classrooms.
2. To analyze the relationship between perceived usefulness, perceived ease of use, digital self-efficacy, and technology-related anxiety with AI adoption in inclusive educational settings.
3. To identify the role of individual attitudes and psychological readiness in facilitating or hindering the effective integration of AI technologies in inclusive classrooms.

2. Literature Review

As the Artificial Intelligence (AI) accumulated rapidly as an assistant in education the opportunities of inclusivity, personalization, and assistance provided to learners in the classroom responding to the needs of students differing in ability improved. Intelligent tutoring systems and adaptive learning systems along with AI-supported assistive technologies applications have been found to individualize student-based learning systems and tend to promote equity and inclusion in learning (Holmes & Porayska-Pomsta, 2023).Due to a variation in cognitive, physical, and emotional requirements that the students may possess, the inclusion classroom learning condition is prone to neglect the existing instructional strategies that are, by default, unable to take into account the learners in all their diversity, which is why the imitation of the AI as a resource to the said environments is relevant, serving as a facility to enable differentiated instructions and tracking in real-time. Nevertheless, the current studies have suggested that the application of AI technologies could eliminate the currently perceived barriers to the experiences of students with disabilities and design equitable access to learning by providing personalized feedback and flexible learning pathways (Luckin et al., 2016). This research library underscores the general possibilities of the application of AI in inclusive education, yet, suggests that it seems necessary to conduct the research of human variables (especially psychological ones), which would help to contribute to the acceptance and effective inclusion of AI into classrooms under such complex circumstances.

The use of psychological factors, such as perceived usefulness, perceived ease of use, and digital self-efficacy have been also recognized as a critical point of determination of AI technology acceptance in educational practice. Technology Acceptance Model (TAM) invented by(Sinha, 2024),is still one of the fundamental models in this field and it assumes that perception of individuals about the advantages of certain technology and its simplicity to use directly influences their attitudes and behavioral intentions to use it. The following research reporting on TAM and extended models use on educational technology has replicated the importance of such kinds of psychological variables on determining technology adoption behavior in teaching education and the learning population. As an example, a research by (Nikou et al., 2024)supported the fact that perceived usefulness, as well as ease of use, were positive determinants of how students intend to adopt mobile-based AI learning systems, where the two psychological beliefs represent steady predictors of technology consent in any digital tool. These results indicate that the development of positive ideations regarding the practicality and the ease of use of AI tools are essential to encourage the AI tool adoption in universal classrooms where complexities in learning are already present.

Another significant psychological idea behind using AI is technology-related anxiety since it reflects individual concern or fear when it comes to the use of a new computerized system. Technology anxiety has been attached to the reluctance to adopt the emerging technologies regardless of the perceived benefits (Teo, 2011). At school, teachers may be hard worried about reliability, the possibility of failure or the ability to derail classroom or control events, and the students may be afraid of complaints or failure of performance in case of technology involvement. The findings of one more study by (Khasawneh & Khasawneh, 2024)showed that technology anxiety acts strongly as a moderator of the relationships between the two variables which are perceived ease of use of AI-powered educational applications and intention to use in the context of university students. These observations indicate an action like controlling emotional response to AI technologies in a classroom and inclusive classroom especially where it is more vulnerable emotionally and cognitively on the part of students unlike on the part of instructors. Training programs with good design, peer support and designs in AI that are easy to understand should be introduced to overcome such anxiety and increase acceptance of AI.

The development of the behaviors associated with the consumption of the AI is also focused on digital self-efficacy or the belief of an individual that he/ she is capable of working with the digital technologies. The teachers with high digital self-efficacy feel freer to include AI tools in their educational practices and find the said technologies not dis considerate but helpful. The same must be done to the students who feel more comfortable in their digital skills since they will be eager to utilise AI-based learning platform and the adaptive systems. A recent study by (Hennessy, 2024),confirmed the hypothesis that digital self-efficacy is also a more significant predictor of the readiness of teachers to apply AI to teaching at the secondary level school and concluded that building digital skills and gaining a sense of power to be prepared to apply the technologies implemented in the classrooms is also needed. The development of digital self-efficacy is particularly useful in inclusive classrooms: teachers, as well as students, may have some extra problems with working in digital systems. To supersede these psychological gaps, it is possible to suggest entertaining the idea of engaging in focused professional development of teachers and students regarding the area of digital literacy to guarantee equal and inclusive access to the use of AI in education.

2.1 Teacher Professional Development and AI Integration

Professional development is a crucial aspect that needs to be imparted to provide teachers with the challenges of skills and confidence and instructional tactics that are essential to incorporate AI tools successfully in integrative classrooms. Along with the development of AI technologies, the skills of educators need to be enhanced, too, to ensure their and their learners success in manipulating digital environments, analyzing the information presented by data, and personalization of the AI-facilitated instructional strategies in relation to the population makeup of learners. It has been stressed in many studies that when the targeted professional development opportunities are not present, the implementation of the advanced technology such as AI tends to be shallow or unsustainable (Hennessy et al., 2025),On par with the multilateral nature of instruction that teachers are already facing in the inclusive classrooms, the ongoing and practical training concerning the application of AI must be available to allow the equitable and proper usage. A well-trained and supported teacher has higher chances to identify the instructional potential of AI devices and use it purposefully within the pedagogical routine.

Professional development paths dealing with AI topics must not be limited by the training of the technical skills, but should focus additionally on pedagogical and ethical integration, as well as even psychological preparedness. Educators should have systematic chances to gain knowledge about the

ways that AI tools can help them perform more personalized learning, to monitor behavioral patterns, and satisfy student diversity. The professional development programmes should also assist the educators to critically critique the limitations, prejudices and data privacy concerns of AI systems. According to(Holmes, 2019)), the increase in sustainable integration of AI relies on professional development actions involving the combination of technical teaching with reflective, ethical, and pedagogical discourses. Through such comprehensive programs, the teachers will be encouraged to make informed choices regarding the use of AI and terminally the anxiety related to the emerging technologies, and the confidence of implementing the digital tools to create an inclusive and student-centered instruction will be established.

Besides, professional development models based on a collaborative approach and peer support have been considered especially effective in ensuring the AI readiness of educators. Knowledge-sharing, peer's feedback, and the co-development of lesson plans enhanced with AI should be fostered through learning communities, mentorship arrangements as well as practice-based workshops. Such group work does not merely enhance technical skills, but also provide a system of social support which attenuates feelings of anxiety and reluctance concerning technology. (Ottenbreit-Leftwich et al., 2018),identify a possibility to implement innovative technologies because the more the learning occurs in a collaborative environment with peers, the greater likely that the teacher will adopt innovative technology, since this learning environment diffuses the sense of isolation/uncertainty. The teaching bodies and education administrations should invest both time and money and facilities to help maintain teacher training with regards to AI applications, especially those adjusted to inclusive education conditions. According to (Xu et al., 2025),the effectiveness of the AI integration plans is tightly linked to educational establishments coping with the change process, recognizing teacher agency, and instilling a climate of trust in the teaching that involves technology. An institutionally focused and strategically planned professional development will enhance the preparedness of teachers, quality of their instruction, and gains of inclusive capabilities of AI tools in the classrooms.

2.2 Students' Attitudes and Experiences with AI-Based Learning Platforms

The attitude of students towards learning platforms offered by AI-based technologies lies at the core of assessing the successfulness and viability of the technology in the learning context, especially in an inclusive classroom. It is not uncommon to see positive attitudes that are linked with increased engagement, motivation and better academic performance. In case students find AI tools convenient to use, applicable to their learning point, and help them to accomplish their unique learning requirements, there is a higher probability of them waving their hands on, experimenting with the features of available technology. (Nikou, 2024),compared mobile-based AI educational applications with usefulness and enjoyment to mind the student behavioral intention to use the applications. It was revealed that mobile-based AI educational application usefulness and enjoyment largely minded student behavioral intention to use the applications. Students with different cognitive, physical, and emotional limitations will be present in the inclusive classrooms, and so, the AI systems with the elements of feedback customization, dynamic difficulty progression, and simple interfaces will help develop more constructive attitudes and inclusive learning of all students.

However, the functionality of the system is not the only precondition of the attitude of students towards AI tools as it is related to their prior experience of working with technology in general and digital literacy in particular. Negative experiences of being exposed to the maladaptable or over-complicated digital networks can make the students skeptical or unwilling to use newly emerging AI applications. Also, underserved learners who might not have access to technology in most cases outside the school setting would be scared of AI systems since they would find the systems impersonal and

difficult to learn. As the researchers (Luckin et al., 2022),mention, in the aim to be successfully implemented in education, the AI technologies are to be created in the light of existing level of technology experience and social-cultural backgrounds. Instructions in an inclusive classroom require AI resources, which are both pedagogically sensible and culturally and emotionally conscious to enhance interaction and reduce fears. Students also consider emotional responses to AI-based learning platform in terms of anxiety, frustration, or even fear of failure. Students that find it hard to cope with the tempo of working in the AI systems or those who face numerous technical bugs become anxious about the use of technology and feel less eager to practice.

This has more significance in inclusive environments where students with learning disabilities or emotional difficulties are more likely to be vulnerable to the perceived inadequacies of communication with automated feedback, or adaptive algorithms. (Khasawneh, 2024),identified that technology fear in students had a bad effect on how they perceive ease of use and on the occurrence of using AI-based learning software. It is essential that these emotional factors are covered in user-friendly design, gradual exposure, and emotional support systems in classrooms so that the emotional experiences of the uses could become positive towards AI tools. In addition, the long-term learning success and student's satisfaction with AI-based learning platforms also depend directly on their feeling of autonomy and the perceived control over the learning process. The AI systems which enable the students to create their own learning objectives, choose the paths to the contents and to tailor the feedback mechanisms are likely to cause greater satisfaction and longer terms engagement. In contrast, too fixated AI systems that restrict user input or do not take into the preference may cause the creation of resistance or disengagement. According to (Holmes, 2023).AI platforms are expected to encourage learner agency and provide scaffolding adapted to individual needs but do not affect the student choices and preferences. It is particularly a useful approach in all-inclusive classrooms, where the student-centered AI systems will be able to increase self-efficacy, minimize direct teacher intervention requirements, and make learners more self-confident and prepared to own their learning.

2.3 Research hypotheses

1. There is a significant relationship between perceived usefulness of AI tools and their acceptance among teachers and students in inclusive classrooms.
2. There is a significant association between digital self-efficacy and the willingness to adopt AI-based learning platforms in inclusive educational settings.
3. There is a significant negative relationship between technology-related anxiety and the acceptance of AI tools among teachers and students in inclusive classrooms

3. Methodology

3.1 Research Design

This research is based on a quantitative research design that was used to identify the correlations amid different psychological factors on the acceptance of AI tools by teachers and students in an inclusive classroom. The quantitative methodology was appropriate due to that fact that it enables gathering of data in numerical form and the use of statistical methods in order to quantify the degree of relationships between variables. With this design, research variables like perceived usefulness, perceived ease of use, digital self-efficacy, and technology related anxiety were measured and their correlation with acceptance with AI tools has been empirically examined. A correlational approach belonging to the quantitative school of thought was used, since it is easier to identify the patterns, trends, and relationship without any manipulation of any independent variable. This research design helped the researcher to examine the strength and direction of relations between psychological factors and AI adoption behaviors objectively in an educational setting. As well, such a design would allow

collecting large-scale data on the same population of both teachers and students, and this would ensure consistency of measures of variables across groups.

3.2 Population

This population involved the teachers and students of the inclusive classes available in the regional settings of Punjab in Pakistan available in both the governmental and the non- state schools. Inclusive classrooms were the ones which used to present the learner environment where the student with different physical, cognitive and socio-emotional needs were taught along with the remaining members of their peers within the mainstream. The decision to favor this group was justified by the fact that the classrooms of inclusive education are characterized by qualitative problems and opportunities of instructional activities in terms of implementing the AI and, therefore, it turns out to be a highly topical setting to investigate the factors of technological acceptance. The population considered the teachers of all the different levels of the academic world and also the different abilities of students so that the results obtained may be varied and representative of the findings. The population has been selected as it would contribute to the generation of the ideas that could be implemented to the educational system of Pakistan, where the use of AI technologies in inclusive classrooms are on the development stage. The chosen population can also be justified by the fact that a growing number of the population of the country is focused on the digital change in education thus, the study can be counted in the field of scholastic concerns in the country.

3.3 Sample Size

A sample size of 250 individuals was selected for this study, which will be carried out in inclusive classrooms and includes 125 teachers and 125 students. This sample size was reach by the recommendations in guidelines of power analysis of social sciences research, which recommend at least 200 250 participants to find medium magnitude of effects in correlational researches that involve many variables. In choosing 250 respondents, the researchers tried to strike a compromise between the statistical adequacy and practicality of the research. It was also deemed that this number would be adequate in conducting more advanced statistical estimates like correlation and multiple regression studies so that the observations made would be precise and able to be generalized to the target population. The involvement of the teachers and students with equal rates also enabled a comparative examination of their perceptions, attitudes, and aspects of psychology of accepting AI in inclusive education. It also made the subgroup analysis possible, as this type of sample split made it possible to find out the difference in AI acceptance by teachers and the students.

3.4 Sampling Technique

The simple random sampling method was used to randomly pick the participants based on the identified inclusive classrooms in the identified public and private educational institutions in the province of Punjab in Pakistan. This approach was adopted as it serves every person in the specified population an equal and independent opportunity to be picked and thus reduces biases in sampling and increases the sample representation. Names of inclusive classrooms and adjoining teachers and students were taken by school and college administrations and random selection was done by the random number generator. Simple random sampling method made sure that the sample represents the inclusiveness of educational settings in Punjab where the research was conducted and allows drawing more general statements regarding the psychological aspects of acceptance of AI tools in those classrooms. Moreover, the procedure embraced the objectivity of the participant's selection and ethical research conducts since selectivity and biasness of selection were eliminated.

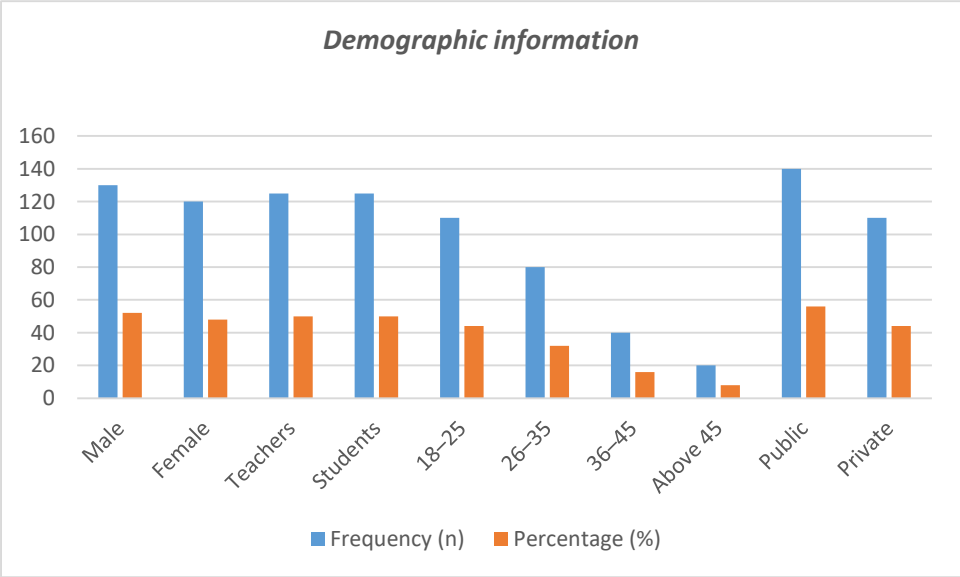
4. Data Analysis

In this research the Statistical Package for the Social Sciences (SPSS) version 26 was utilized to analyze data. The demographic information of the participants was summarized using a descriptive statistics measure like frequencies, percentages, standard deviation, mean and other descriptive statistics. To find answers to the research hypothesis, Pearson Product-Moment Correlation Coefficient was used to analyze relations between the variables of perceived usefulness, technology-related anxiety, and AI tool acceptance among inclusive classes teachers and students. Another method was the Simple Linear Regression Analysis that was used to determine the productivity power of digital self-efficacy on the willingness to take up AI based learning platforms. Each of the statistical tests had a value of 0.05, and results were presented as correlation coefficients, beta values, R 2 values, and the p values that would be used to identify the strength, direction, and significance of the relationships discovered

Table 1: Demographic Characteristics of Participants (N = 250)

Demographic Variable	*Category*	*Frequency (n)*	*Percentage (%)*
Gender	Male	130	52.0
	Female	120	48.0
Role	Teachers	125	50.0
	Students	125	50.0
Age Group (Years)	18–25	110	44.0
	26–35	80	32.0
	36–45	40	16.0
	Above 45	20	8.0
Institution Type	Public	140	56.0
	Private	110	44.0

Figure 1: Demographic Information



The study sample under consideration had a relatively equal number of participants based on gender and role, with the result of the demographic analysis being slightly thicker in male participants than in ones with a female gender. The study utilized 250 respondents out of which 52 percent were men and 48 percent were women, and thus there was a gender representation on the study. The

relative traded offs of both teacher and students were also well balanced with 125 teachers (50%) and 125 students (50). The age distribution in age group showed that most of the participants fell between the age bracket of 18- 25 years (44%), 32% aged between 26-35 years, 16% aged between 36-45 years, and 8% aged over 45 years which revealed that most of the respondents were young adults. In institutional affiliation, 56 percent of the respondents represented the Government College and 44 percent represented the Private College, which covers a wide range of representation of various kinds of Inclusion Learning environments within the state of Punjab, Pakistan. The demographical flow assists in justifying the feasibility of the study findings to be generalized in the intended learning environment

Table 2: Correlation Analysis

Variables	N	Mean	SD	r	p-value
Perceived Usefulness	250	3.85	0.62	—	—
AI Tool Acceptance	250	3.91	0.58	0.642**	0.000

The Pearson Product-Moment Correlation analysis findings also indicated a statistically significant correlation between perceived and actual usefulness of AI tools on the one hand, and their acceptance on the part of teachers and students in inclusive classrooms on the other hand. It was observed that r = 0.642 holding p-value < 0.01 which shows that there is strong positive relation between the two variables. Such a conclusion implies that the more teachers and students think that AI tools would facilitate improvements in teaching and learning experiences, the greater becomes their probability of accepting and introducing these tools into an inclusive teaching/learning practice. Such association with the power accentuates the need to sensitize the population on the practical nature of this relationship.

Figure 2: Psychological Factors and AI Tool Acceptance in Inclusive Classrooms

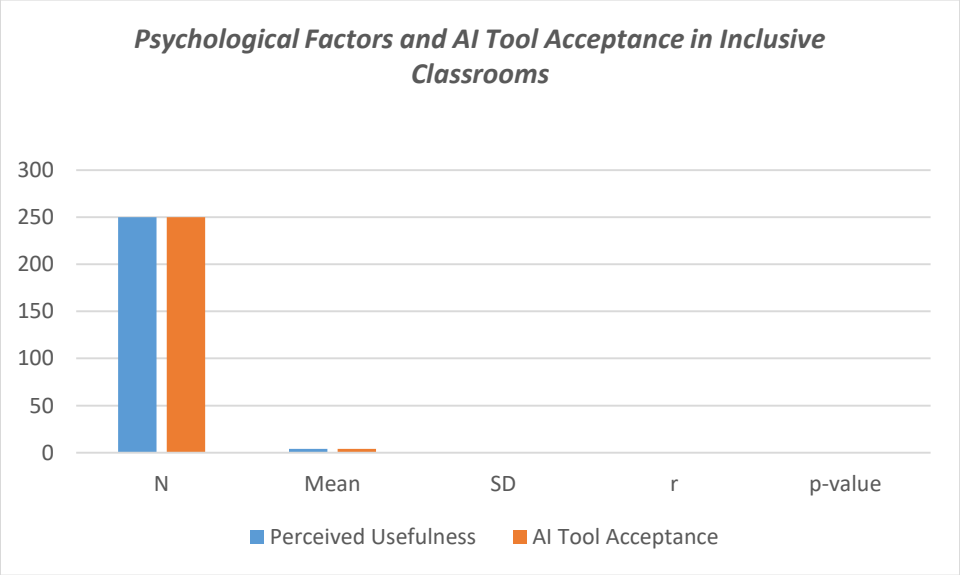
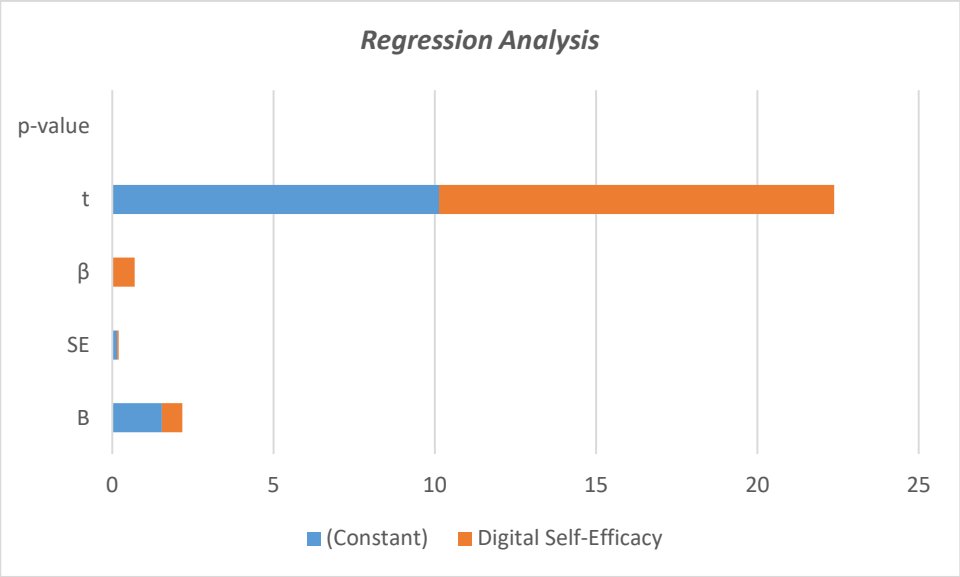


Table 3: Linear Regression Analysis

Model	B	SE	β	t	p-value
(Constant)	1.540	0.152	—	10.13	0.000
Digital Self-Efficacy	0.637	0.052	0.701	12.25	0.000

Figue 3: Regression Analysis



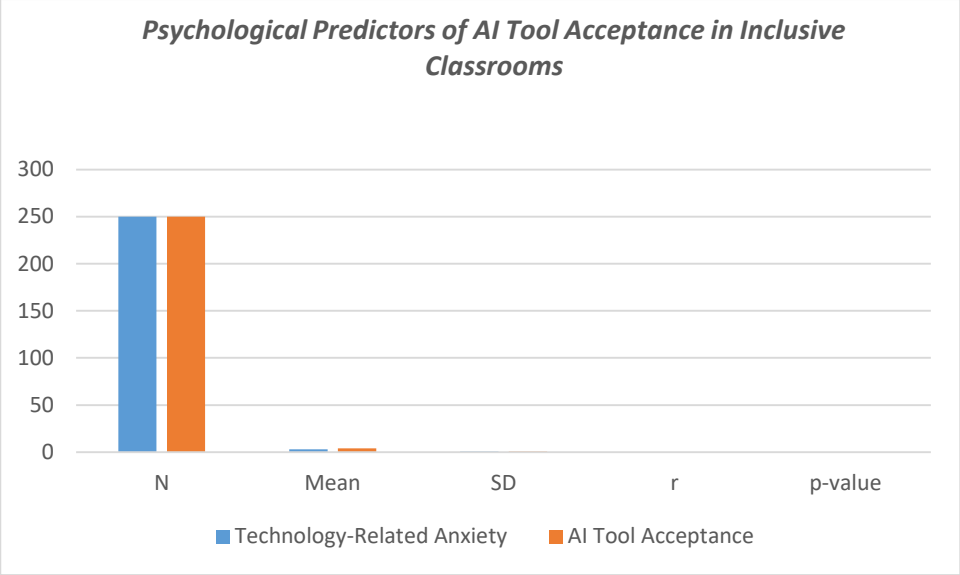
Simple linear regression analysis identified that digital self-efficacy could be among the predictors of the willingness to use an AI-based learning platform in inclusive learning environments. The unstandardized coefficient of digital self-efficacy was B = 0.637, which implies that the willingness to adopt the use of AI tools is positively and significantly increased by 0.637 units per one-unit increase in digital self-efficacy. The mean value or standardized form of beta coefficient (0.701) also depicts a strong positive significant correlation between the two variables. This correlation was statistically relevant, which was indicated by t-value of 12.25 and p-value of 0.000, which states that there were high chances that the finding results cannot be possible in chance. The model itself accounted for 49.1 percent of variance (R 2 = 0.491) in willingness to adopt the AI tools and revealed that the digital self-efficacy determined a significant percentage of differences in willingness to adopt AI tools among teachers and students in inclusive classrooms.

Table 4: Correlation Analysis

Variables	N	Mean	SD	r	p-value
Technology-Related Anxiety	250	2.91	0.65	—	—
AI Tool Acceptance	250	3.87	0.59	-0.521**	0.000

The Pearson Product-Moment Correlation analysis outcome indicated that the negative association between the technology-related anxiety and the acceptance of the AI capabilities among both the teachers and students in an inclusive classroom setting was statistically significant. The correlation was r = -0.521, and p = 0.000, thus, showing that with an increasing level of the technology-anxiety level, the willingness to accept the AI tools will drop greatly. Such an inverse, moderate relationship implies that people having an increased level of anxiety regarding the use of technologies are less prone to accepting AI-based educational support. The importance of this finding is that this result is a reason to assess psychological impediments to introducing AI to the educational setting, like anxiety, and work on the removal of such barriers because the lower the level of anxiety is, the higher the level of the positive reception of AI technologies in learning might be.

Figure 4: Psychological Predictors of AI Tool Acceptance in Inclusive Classrooms



5. Discussion

The findings of the study are quite helpful in comprehending how to arrive at the psychological predictors of the adoption of AI tools among classroom teachers and students teaching inclusive classrooms. Such results support the hypothesis of Technology Acceptance Model (TAM) that a user will tend to engage more with a technology that he/she feels useful. The extent to which a person believes that the AI tools can be used to enhance teaching and learning process was highly correlated with the extent of their acceptance and adoption to both the teachers and the students in their teaching and learning process as depicted by correlation coefficient ($r = 0.642$, $p < 0.01$). It coincides with the findings expressed by (Economides, 2024),in whom the perceived usefulness was identified as one of the largest predictors of the technology acceptance after examining educational environments. The same findings were also in line with the fact that digital self-efficacy use was also very important in determining the probability of accepting the use of AI-based learning platforms based on the simple linear regression analysis (beta 0.701, $p < 0.01$). It means that individuals who are very confident of their digital skills are more likely to implement the application of AI tools and platform.

The regression model revealed variance of approximately 49.1 % of the difference in the willingness of adopting AI, and, therefore, digital self-efficacy has a significant effect on positive attitudes toward technology and technology related behavior in inclusive classrooms. The specified results correspond with the earlier findings of (Han et al., 2025)in which it was stated that digital competence of users must be reinforced in order to contribute to the absorption of future technological advancement in the educational process. Moreover, a strong negative relationship between technology related anxiety and the acceptance of AI tools was also marked ($r = -0.521$, $p < 0.01$). This connection proved that the more the anxiety about the use of technology there is, the less the acceptance of AI tools by both teachers and students. This finding can be related to the study conducted by (Khasawneh et al., 2025)where it was noted that technology-related anxiety is a psychological barrier that disadvantages the AI-based applications of learning and education. The existence of this negative correlation is especially significant to the background where the diversities of the student population and complexity of schooling require the assurance and the ease of utilizing digital tools and technology in a differentiated classroom environment.

In addition, the demographic data disclosed a relatively equal representation of gender, roles and institutional affiliations in the sample which improve the generalizability of the research findings concerning the inclusive classrooms in Punjab, Pakistan. Most respondents were aged adults and thus it is possible that they are more accustomed to a digital world and as such this aspect is not missed but rather it is the psychological question of anxiety that continues to play a role. This only emphasizes the importance of the selective digital literacy training and psychological support activities that are to be implemented to make the teachers and students less anxious and more confident in digital literacy. On the whole, the results of the study testify to a high level of psychological factor including perceived usefulness, digital self-efficacy, and technology-related anxiety on the AI acceptance in inclusive classrooms. Not only do the findings confirm extant theoretical frameworks such as TAM, but also makes them applicable in culturally localized education setting of developing nations such as Pakistan. The current research highlights the necessity to consider a cognitive and emotional aspect of using technology when advocating AI use in inclusive instruction.

5.1 Conclusion

The study examined the factors that influenced the psychological concerns of the acceptance of AI tools by both the teachers and students in inclusive classrooms. The outcome indicated a positive correlation between perceived usefulness and AI tool acceptance, and this finding means that the more useful individuals perceive the adoption of AI technologies to teaching and learning, the more they will be adopted. Self-efficacy was also found to be an influential predictor of a readiness to use AI platforms, and digital confidence was revealed to be of huge significance to encourage technology use. Also, the correlation between AI tool acceptance and technology-related anxiety was also important, though of negative sign, which further implies that the fear of technological advancement may be one of the barriers on the path toward its implementation in inclusive learning. The demographic representation of the population sample was good in that it was spread-out averagely in gender, jobs and even amidst the affiliation of the institutions, all of which was desirable to the sample. These results confirm the suitability of the available theories of technology acceptance including TAM to the setting of inclusive classrooms. The study raises the need to boost digital competence and get rid of the fear to engage in AI utilization.

5.2 Recommendations

1. Design digital self-efficacy training sessions to teachers and learners to gain confidence with the use of AI tools in inclusive classrooms.
2. Include the modules pertaining to AI in the teacher professional development sessions to make them better prepared to adopt AI.
3. Conduct awareness workshops on how AI tools can be helpful in teaching, learning and encompassing the classroom.
4. Formulate psychological assistance programs to help to alleviate the level of anxiety that a technology might cause to teachers and students.
5. Convince education centers to make available and affordable AI tools and materials that accommodate all education settings.
6. Plan culturally relevant policies and guidelines of AI integration that meet the needs of the specifics of the inclusive classrooms in Pakistan.
7. Establish a consistent process of feedback and assessment to watch the performance of AI tools and experiences of the users in inclusive environments.
8. Encourage joint working between policymakers, teachers and computer scientists on creating friendly, accessible AI-based educational resources.

5.3 Future implications

The present research has substantial implications on the future research, policy and practice of inclusive classrooms. Other psychological factors to be studied in future include motivation and perceived risk to understand the behavior of AI acceptance more holistically. It would also be possible to use longitudinal research designs to study the changes of psychological attitudes toward AI as they transform with exposure, as well as training. Educational policymakers should consider integrating AI-readiness and digital confidence-building units to the national teacher training systems. In future studies, one can explore AI adoption rate in various provinces and cultural situations within Pakistan to make general findings of the research. One should also create the possibility to develop localized AI-equipment that is convenient to use in classrooms and suites in inclusive education in developing countries. Future plans need to encompass the teachers and student in the AI design and feedback as a way of enhancing the result of adoption. Further, the comparison between the readiness of public and the privately owned institutions might help better understand the infrastructure and psychological gaps in the integration of AI.

References

Abdi, A.-N. M., Omar, A. M., Ahmed, M. H., & Ahmed, A. A. (2025). The predictors of behavioral intention to use ChatGPT for academic purposes: evidence from higher education in Somalia. *Cogent Education*, *12*(1), 2460250.

Aftab, M. J., Amjad, F., & Chaudhry, H. (2024). Exploring the Role of AI-Driven Speech Recognition System in Supporting Inclusive Education for Hearing Impaired Students in Pakistan. *Annals of Human and Social Sciences*, *5*(3), 492-504.

Ai, J., Zhang, J., Horn, E., Liu, H., Huang, J., & Ma, Y. (2022). Examination of Chinese teachers' attitudes towards inclusive education. *Journal of International Special Needs Education*, *25*(2), 74-86.

Akinde, T. A. (2016). Theoretical modelling to explain lecturers' use of educational support systems for teaching in university based library schools in Nigeria: extending the technology acceptance model (TAM).

Ali, I., Warraich, N. F., & Butt, K. (2024). Acceptance and use of artificial intelligence and AI-based applications in education: A meta-analysis and future direction. *Information Development*, 02666669241257206.

Alyoussef, I. Y., Drwish, A. M., Albakheet, F. A., Alhajhoj, R. H., & Technology, A. A. A. E. (2025). AI Adoption for Collaboration: Factors Influencing Inclusive Learning Adoption in Higher Education. *IEEE Access*.

Bakour, S. (2024). Do interventions enhancing students' self-belief and confidence effectively contribute to widening participation in higher education? A qualitative research study. *Widening Participation and Lifelong Learning*, *26*(2), 60-87.

Economides, K. (2024). *Futures Consciousness: A futures study in gamified and game-based learning in higher education* Dublin City University].

Gado, S., Kempen, R., Lingelbach, K., & Bipp, T. (2022). Artificial intelligence in psychology: How can we enable psychology students to accept and use artificial intelligence? *Psychology Learning & Teaching*, *21*(1), 37-56.

Hamilton, B. (2022). *Integrating technology in the classroom: Tools to meet the needs of every student*. International Society for Technology in Education.

Han, B., Nawaz, S., Buchanan, G., & McKay, D. (2025). Students' Perceptions: Exploring the Interplay of Ethical and Pedagogical Impacts for Adopting AI in Higher Education. *International journal of artificial intelligence in education*, 1-26.

Hennessy, S. (2024). Analysing educational dialogue around shared artefacts in technology-mediated contexts: A new coding framework. *Classroom Discourse*, 1-35.

Hennessy, T., McMahon, J., & Doody, O. (2025). Views of parents and advocates on embedding inclusive practices within higher education for people with intellectual disability in the Republic of Ireland. *Journal of Intellectual & Developmental Disability*, 1-14.

Holmes, W. (2019). Artificial intelligence in education. In *Encyclopedia of education and information technologies* (pp. 1-16). Springer.

Holmes, W. (2023). The unintended consequences of artificial intelligence and education.

Holmes, W., & Porayska-Pomsta, K. (2023). The ethics of artificial intelligence in education. *Lontoo: Routledge*.

Karan, B., & Chakma, C. (2025). Influence of higher education students' perceived behaviour on their artificial intelligence acceptance: an empirical investigation using technology acceptance model. *Journal of Applied Research in Higher Education*.

Khalid, A. R., Ahmad, F., Ahmed, S., Naeem, M. A. B., ul Ain, N., Mehmood, H., Sajawal, A., Umar, M., Atta, A., & Amin, H. (2025). Assessment of the Attitude and Fears of the Physicians of Pakistan regarding Artificial Intelligence: a cross-sectional survey in 2024.

Khan, H. U., Khan, R. A., Alwageed, H. S., Almagrabi, A. O., Ayouni, S., & Maddeh, M. (2025). AI-driven cybersecurity framework for software development based on the ANN-ISM paradigm. *Scientific Reports*, *15*(1), 13423.

Khasawneh, M. (2024). Academic integrity and the use of ChatGPT by EFL pre-service teachers. *Journal of Infrastructure, Policy and Development*, *8*(7), 4783.

Khasawneh, M. A. S., Aladini, A., Assi, S. A., & Ajanil, B. (2025). Portfolio assessment in AI-enhanced learning environments: a pathway to emotion regulation, mindfulness, and language learning attitudes. *Language Testing in Asia*, *15*(1), 5.

Khasawneh, Y. J. A., & Khasawneh, M. A. S. (2024). The Attitudes of Teachers Toward Using E-learning in Mathematics Teaching to Intermediate Stage Students. *Academic Journal of Interdisciplinary Studies*, *13*(5), 183.

Lin, J., Wu, S., & Luo, X. (2025). How does big data analytics capability affect firm performance? Unveiling the role of organisational resilience and environmental dynamism. *European Journal of Information Systems*, *34*(3), 502-528.

Liu, Y., & Liao, W. (2019). Professional development and teacher efficacy: Evidence from the 2013 TALIS. *School Effectiveness and School Improvement*, *30*(4), 487-509.

Luckin, R., Cukurova, M., Kent, C., & Du Boulay, B. (2022). Empowering educators to be AI-ready. *Computers and education: artificial intelligence*, *3*, 100076.

Naseer, A., Ahmad, N. R., & Chishti, M. A. (2025). Psychological Impacts of AI Dependence: Assessing the Cognitive and Emotional Costs of Intelligent Systems in Daily Life. *Review of Applied Management and Social Sciences*, *8*(1), 291-307.

Nikou, S. A. (2024). Factors influencing student teachers' intention to use mobile augmented reality in primary science teaching. *Education and Information Technologies*, *29*(12), 15353-15374.

Nikou, S. A., Perifanou, M., & Economides, A. A. (2024). Exploiting the TARC framework: The relations between educators' attitudes towards AR, innovativeness, digital skills, and AR skills in education. International Conference on Immersive Learning,

Ottenbreit-Leftwich, A. T., Glazewski, K. D., Brush, T. A., Aslan, S., & Zachmeier, A. (2018). Addressing technology integration concerns: Asynchronous video mentoring between pre-service teachers and exemplary technology-using in-service teachers. *Australasian Journal of Educational Technology*, *34*(4).

Shubha, T. A., Vaidya, P., Ali, P. N., & Lund, B. D. (2025). Integration of AI-based applications in education: how students feel about the ChatGPT era? *Global Knowledge, Memory and Communication*.

Sinha, R. (2024). Technology Acceptance Model and AI based Educational tools. *International Journal of*

Innovations in Science, Engineering And Management, 103-106.

Teo, T., & Zhou, M. (2017). The influence of teachers' conceptions of teaching and learning on their technology acceptance. *Interactive Learning Environments*, *25*(4), 513-527.

Viberg, O., Kizilcec, R. F., Wise, A. F., Jivet, I., & Nixon, N. (2024). Advancing equity and inclusion in educational practices with AI-powered educational decision support systems (AI-EDSS). In (Vol. 55, pp. 1974-1981): Wiley Online Library.

Xia, Q., Chiu, T. K., Lee, M., Sanusi, I. T., Dai, Y., & Chai, C. S. (2022). A self-determination theory (SDT) design approach for inclusive and diverse artificial intelligence (AI) education. *Computers & Education*, *189*, 104582.

Xu, G., Yu, A., Xu, C., Liu, X., & Trainin, G. (2025). Investigating pre-service TCSL teachers' technology integration competency through a content-based AI-inclusive framework. *Education and Information Technologies*, *30*(4), 4349-4380.

Zappalà, E., Viola, I., & Galdieri, M. (2024). The Will, The Skill, The Tool, And The AI. Exploring Factors Affecting Teachers' Intentions to Use AI And Technologies To Foster Inclusion. *Journal of Inclusive Methodology and Technology in Learning and Teaching*, *4*(1).

Zhang, C., Schießl, J., Plößl, L., Hofmann, F., & Gläser-Zikuda, M. (2023). Acceptance of artificial intelligence among pre-service teachers: a multigroup analysis. *International journal of educational technology in higher education*, *20*(1), 49.