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Teachers and Technology: The Evolving Role of Educators in AI-Enhanced Learning Environments

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ABSTRACT

With the advancement of artificial intelligence (AI) in the delivery of education, the position of the teacher is also changing. This research explores the adoption of AI-based learning in secondary schools and specifically looks at the awareness of educators with AI tools, the level of integration, perceived advantages and disadvantages, and support structures. The quantitative design of the study involved administering questionnaires to 150 teachers in different regions, whereby descriptive and inferential statistics were employed to analyse the information received. It reveals that, even if technologies like, auto-grading, learning management systems are popular and receive positive student perceptions, more advanced uses of the technologies like predictive analytics are not incorporated fully because of lack of confidence and little training. This study also shows that schools require institutional resources such as workshops, technical support and policies to effectively initiate AI. Teachers' preferences include practical, interactive training and reveal their emergent professional role in using AI for interpreting results, regulating ethical issues, and co-designing the AI-enhanced instruction. The study underscores the necessity of emergent systemic solutions, ethical competencies and policy measures to transform AI into a tool that empowers education instead of decreasing their authority in the process of teaching. This paper thus adds to the developing literature on human-AI interaction in learning, with a plea for moderation, or a balanced approach where the teacher remains central.

Introduction

The active assimilation of Artificial Intelligence (AI) into education systems all around the world has shifted the dynamics of teaching and learning. With the advancement of information technology in learning environments, practices of teachers move from mere dispellers of knowledge to enablers, co-participants, and analysts of data (Luckin et al., 2016). Artificial intelligence integrated learning technologies such as intelligent tutoring systems, automated grading systems, predictive analytics and personal learning environment are not only revolutionizing learning practices but also disrupting the traditional paradigms of education (Holmes et al., 2019). The pertinent issue in the present generation and the emerging generation is not whether AI will impact on education but how it will transform the facet of the teacher and the human factor in learning.

Educational technology innovations over the years from the use of blackboard to the use of the World Wide Web for delivery of educational resources, which has brought concerns in the society have changed the roles of educators and their functions in a given society (Assad, 2025). However, there is a more profound shift in AI, again due to its global dimension. Unlike other tools in the past, AI systems can use data to make decisions on its own, providing feedback, evaluation of progress and even suggesting a learning path without requiring any kind of input from the human side (Baker & Inventado, 2014). This level of automation has given a tendency that is both praised and feared. Therefore, it is believed that AI will help reduce paperwork to free up the time of teachers to be creative and express friendly feelings towards learners (Zawacki-Richter et al., 2019). As for the limitations, critics point to de-professionalisation, algorithmic bias, and depreciation of the interpersonal skills in learning (Williamson & Eynon, 2020).

According to the present literature, there is a shift in the teacher's role in an artificial intelligence taught classroom. However, instead of becoming obsolete, educators are expected to assume new roles, including data selectors, ethicists regarding artificial intelligence, and guides in students' interactions with algorithmic structures (Reich 2020). Professionals, including teachers, need to become digitally literate and learn basic AI logic and critical evaluation of its impacts on instruction, as well as privacy and equality (Tuomi, 2018). The above mentioned requirements call for the redesign of teacher education and professional development. Holmes et al. (2021) state that a lack of staff development and technical guidance may lead to the utilisation of AI being either misused or disregarded, thus limiting the positive impacts of the pedagogical tool.

However, the overall environment of institutions and culture have a crucial position in the implementation of AI in the educational sector. While in high income countries, schools may already be piloting adaptive learning technologies and AI enabled learning analytics, in low and middle income settings, challenges may range from basic access to digital tools and devices to training teachers for the use of such tools (UNESCO, 2021). This digital divide not only deepens disparities in education but also facilities the teachers' capacities to engage with and utilize technology reasonably and rather equitably (Gulson et al., 2018).

The purpose of the present study is to identify the current trends in teacher practice in the context of AI use in education, the new roles and tasks that are emerging, and the needed institutional and policy shifts to encourage their adoption. While the Covid-19 pandemic is forcing schools all over the world to work on the challenge of education recovery, which has been further advanced by using digital tools (Popenici & Kerr, 2017), it is high time and useful to inquire about the relation between AI and teacher agency. The conclusion from this study will add to the pool of similar

investigations that aim to investigate how the incorporation of AI in education enhances the importance of the educators, rather than diminishing it.

Literature Review

AI technology has recently been introduced into educational contexts and it has attracted a lot of attention from the researchers concerning various aspects such as teaching positions, paradigms of learning, and dynamics in a classroom. The literature presents a range of attitudes toward AI, from the expectation of a radical improvement of education through its use to concern as to its ethical, practical, and philosophical implication. One of the current interests is the role of teachers in the context of AI integration, or rather, the changing role of teachers in AI environments, as the role of teachers when implementing AI in educational settings is pivotal to its success (Schiff, 2021).

Another recurring theme is the increased empowerment of teachers by incorporating AI applications. Roll and Wylie (2016) largely support this by describing adaptive technologies and learning analytics as tools that enable instructors to make strategic instructional decisions since these technologies offer substantive evidence on learners' performance in real-time. These tools allow for modification of instructional approaches in real time, and they support differentiation and instruction by increasing classroom interaction in whole class, main, and small group instruction when applicable. Likewise, Roschelle et al. (2017) posit that AI can act as an 'instructional rate multiplier,' easing the processes of formative assessment carried out by the teacher. This notion diverges from the existing sentiment that AI is a threat to educators and instead draws out the concept of enhancing teachers' work.

Besides the instructional support, AI is also transforming the teaching profession in terms of curriculum and classroom management. Mishra et al. (2021) show that teachers are now expected to practice data literacy, and algorithm-based information must be interpreted and applied with regard to teaching situations. This means changing one of approach from an information disseminator to a ''pedagogical data analyst.'' However, a majority of teachers indicate that they lack preparedness on such forms of duties due to inadequate digital competency and professional training on AI skills (Chen, 2022).

The literature also points to professional development and institutional capacity as core components in the ability to implement AI successfully. According to a study by Ifenthaler and Schumacher (2016), the attitude of teachers towards AI is determined by factors, such as quality of training and organizational support. When the teachers are trained to use AI tools regularly and systematically, having context and examples as to when to apply such tools during practice, they are likely to incorporate such tools in their practice. On the other hand, a process initiated at the national level with little or no input from teachers yields narrow or even detrimental effects (Jarke & Breiter, 2019).

The ethical perspectives are universal in the scholarship of AI in education. One of the major challenges is that of bias which stems from the reinforcement of prejudices in artificial intelligence learned based on previous data. In their perspective, Akgün and Greenhow (2021) pointed out that teachers are critical in managing bias by considering the AI results and assessing equality in class decisions. One more aspect of ethical concern consists of data privacy and surveillance. While many AI systems obtain a large amount of student data, the data collection processes are not always all transparent in terms of consent. As van Zoonen (2020) opines, teachers are expected to

act as the bridge between the students' rights and the institutions' data practices, which is an added workload in the teaching profession.

The first source of complexity is contextual and cultural differences in the environment in which AI is inserted. For instance, OECD cross-nationally syntheses (2021) show that in many cases, AI is adopted extremely dissimilarly within learning environments, whereas some nations utilize AI for technical automation, while others attend to AI-human partnership. These differences affect the manner that is employed by teachers when it comes to the use of technology. While in the East Asian countries, education is more centralized, meaning the AI technologies are implemented via national platforms and policies; therefore, in the USA with their decentralized system with schools being mostly autonomous and making decisions independently, the AI adoption is poorly coordinated and may be inconsistent in different institutions (Tuomi & Kankaanranta, 2022).

In this regard, the emotional and psychological aspects affecting teachers as a result of AI implementation is a growing area of research interest. Ertmer and Ottenbreit-Leftwich (2020) identified that although teachers are interested in using AI in instructional processes, they also experience technostress, which appears to stem from the need to keep updating competencies related to technology in the teaching-learning process. However, when the generated outputs by AI systems are non-transparent, for instance by considering learning analytics to predict student failure, teachers may feel as though they lack control or have no confidence in these outcomes (Tsai, Poquet, & Gašević, 2020).

Another important finding of the literature is that there is a need to re-imagine the models of teaching in classrooms facilitated by AI technologies. According to Kimmons and Veletsianos (2021), the change-driven AI cannot be best approached from the behaviorist or constructivist paradigms. Instead, they offer the concept of posthumanism, a new idea of the teacher as the learner as well as the AI in equal partnership rather than hierarchy with the process of education. This theoretical shift places AI as an STS not just on the tool but also in the learning ecosystems, and again reforms the teacher's position.

Furthermore, reviewing the literature on AI and inclusion in education, one can identify certain advantages and risks of algorithm-based learning. There are also studies on how AI implemented to support disabled student learning through speech recognition or self-paced learning warn that poorly designed AI may exclude neurodiverse students whose behaviors do not fit typical algorithms (Mavrou, 2021). Teachers are therefore very important in making sure that development of AI is done in a way that will not prejudice any party or leave out anyone.

In conclusion, the analyzed research material proves that teachers always stay in the focus of approaches to integrate AI into education. The big three firms' evolving role is marked by greater specialization involving new digital, ethical, and analytical competency. Despite these possibilities, for learning design and instructional management, AI will be most effective when teachers are empowered, used contextually and responsively, and universally so. It means that the changes in AI require the changes in the view on teaching not as a stable occupation but as an activity that takes place in a technological, cultural, and ethical context.

Methodology

Research Design

This study employed a quantitative survey method of research in order to assess the readiness of teachers to embrace AI changes in education. A survey was considered the most appropriate method because it can reach a large and various audience of educators and estimate the prevalence and distribution of attitudes, practices, and difficulties related to AI implementation. The study was cross-sectional in its design; this means data was collected at a single point in time and therefore could not track changes in teacher's interaction with AI technologies over time.

The study was framed with a positivist worldview which assumed that it was possible to obtain definitive knowledge on the implementation of AI in relation to the teachers through the use of structured tools and probability statistics. The main research question was to identify the role of teachers in the application of AI, actual use of AI in school, and factors influencing the integration of AI.

Population and Sampling

The target population was all second grade teachers in both public and private schools in four metropolitan areas. The participants were selected by using a stratified sampling method to increase the variability of the sample across the school type and type of field of study: urban or semi-urban school, public or private, STEM or humanities. In order to obtain generalizable results with a degree of confidence of 95%, and a margin of error no more than 7.5%, it was deemed adequate to include 150 respondents in the sample.

The participants required teaching experience of over two years and had implemented at least one technology, AI or non- AI during the previous academic session. The participants were contacted through emails of the school office and some teachers' unions or associations, and they were informed about the nature of the study and the measures that would be taken to protect the rights of the participants.

Instrument Development

The data collection tool, questionnaire, was developed by the researcher to suit this study and consisted of 32 close-ended questions and 3 close-ended probing questions. The questionnaire for the study was therefore designed after a research of available frameworks for AI in education and tested on ten educators who were not part of the study sample into this research. The participants used a 5-Point Likert Scale to respond to questionnaire items labeled as Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree and organized discreetly into four categories: awareness of AI tools, AI use in instructional and administrative capacities, views on benefits and costs of AI, and institutional support and professional development opportunities.

To increase the internal consistency and reliability analysis, Cronbach's alpha value for the entire study was estimated to be 0.87. Expert review analysis by two educators specialised in the use of technologies in the classroom suggested face validity.

Data Collection Procedure

Data collection was done over three weeks during which the researcher was taking observational data. The questionnaire was conducted online using Google Forms to enhance the response rate and the reliability of the data collected. All the participants agreed to complete the study voluntarily and signed informed consent before completing the questionnaire. To ensure patient confidentiality was not breached, all answers were collected in an anonymous and secure manner.

In order to boost the response to the questionnaires, follow-up emails were sent after one week and the last two days before the submission of the questionnaires. A total of 174 responses were recorded during the data collection phase but 24 of these were disqualified due to missing information or failure to meet the set criteria to yield a response rate of 150.

Data Analysis

Descriptive statistics of the quantitative data were imported to the statistical package for the social sciences version 26. Measures of central tendency, variability, and discrete data such as frequencies were computed for the variables in order to gain insight into the nature of the data. Descriptive statistics encompass the use of Pearson correlational analysis, and independent samples t-test to analyze variables such as teacher experience, type of school, and AI tool usage.

To supplement quantitative findings, responses to the three research questions posed to participants were subjected to content analysis to point out emerging patterns and explanations for quantitative results. These qualitative findings were then used as a tool for enhancing the numerate results obtained in the study.

Ethical Considerations

Consequently, this work complied with set ethical norms in education research. In regard to the ethical consideration, the study was approved by the Institutional Review Board (IRB) of the university where the study was to be conducted. The subject information sheet also explained that participation was voluntary, responses would be anonymous, and subjects could exit the study at any time. All the collected data were kept securely on a password protected device and the data collected were used solely for the purpose of this study.

Results

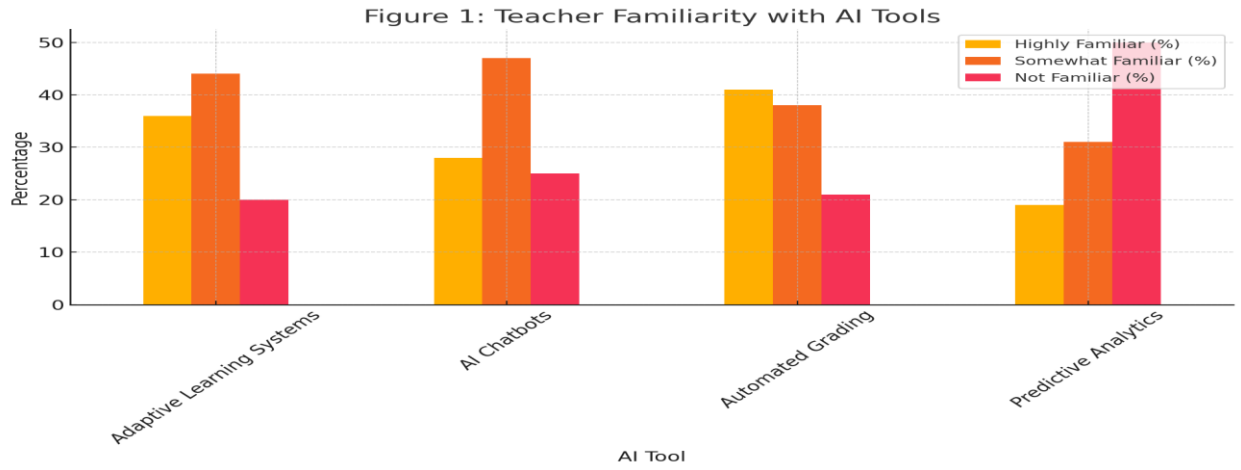
Teacher Familiarity with AI Tools

Teachers' awareness regarding different types of AI tools was also disclosed as exhibited in table 1 below-and illustrated through a bar graph in figure 1 below. Online formative assessments and adaptive learning systems as well as automated grading tools were the most recognized with 36% and 41% of teachers stating that they were 'highly familiar' with them. However, in the case of the systems used for predictive analytics, the highest percentage of respondents indicated no familiarity with the systems, which was 50%. This implies that, even though the AI technologies are already in classroom practice, advanced tools such as learning analytics are not fully implemented because most practitioners may not be fully trained to use them or perceive the need to do so.

Table 1: Teacher Familiarity with AI Tools

AI Tool	Highly Familiar (%)	Somewhat Familiar (%)	Not Familiar (%)
Adaptive Learning Systems	36	44	20
AI Chatbots	28	47	25
Automated Grading	41	38	21
Predictive Analytics	19	31	50

Figure 1: Teacher Familiarity with AI Tools



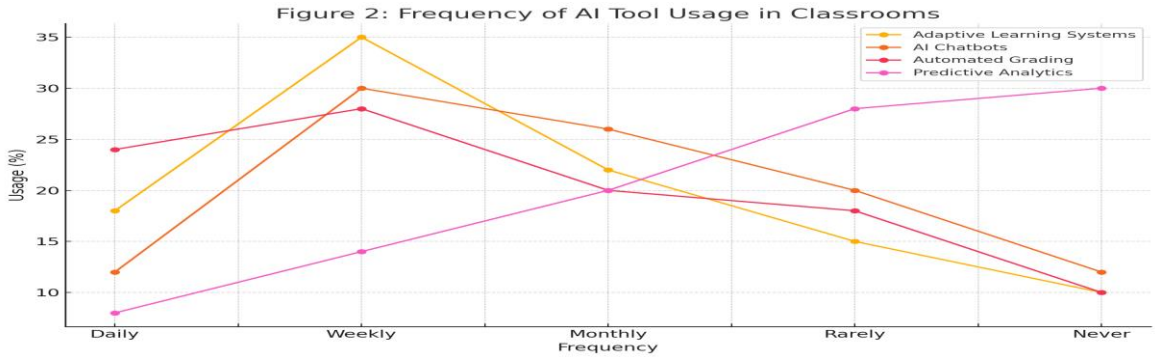
Frequency of AI Tool Usage in Classrooms

From the Table 2 and Figure 2 below, automated grading was confirmed as the leading AI incorporation with 24% of the respondents indicating that they use the tool on a daily basis, followed by adaptive learning systems at 18%. Predictive analytics was employed scarcely with 30% of respondents indicating they never used it, this supports the lack of knowledge established earlier. As for the AI–enabled tools, the degree of utilisation was somewhat moderate, which may indicate the possibil- ity of enhanced application in case substantial support for implementation prevails or is provided with training. The usage trends indicate that the use of AI is more in lowering the evident workload and automating routine tasks which portrays a more functional rather than a strategic use of AI in teaching.

Table 2: Frequency of AI Tool Usage in Classrooms

Frequency	Adaptive Learning Systems (%)	AI Chatbots (%)	Automated Grading (%)	Predictive Analytics (%)
Daily	18	12	24	8
Weekly	35	30	28	14
Monthly	22	26	20	20
Rarely	15	20	18	28
Never	10	12	10	30

Figure 2: Frequency of AI Tool Usage in Classrooms



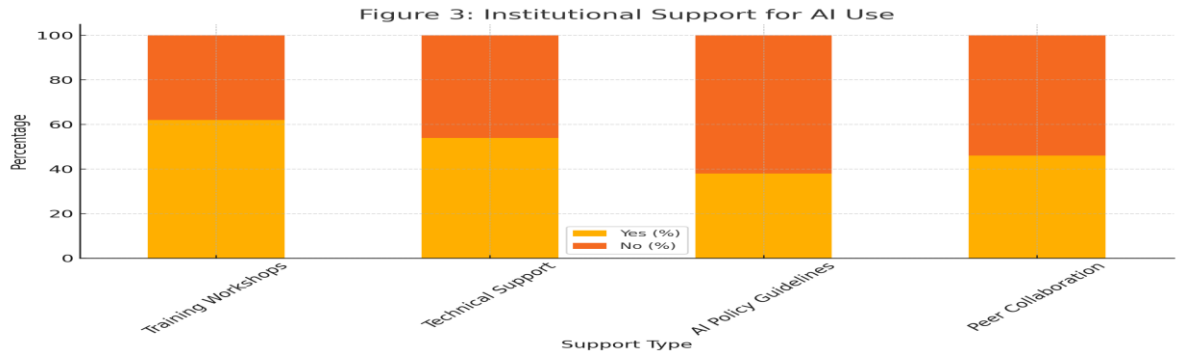
Institutional Support for AI Use

However, there is little doubt that institutional backing is a precondition to successful AI implementation. Table 3 and Figure 3 offer understanding of the types of support offered to the teachers. The most frequently cited source was the training workshops, declared by 62% of the respondents, while the technical support was mentioned by 54 percent. Nevertheless, only 38% of the respondents asserted that there were set guidelines concerning the use of the AI in their respective institutions. This lack of policy structure might be making different practices and decision-making more sporadic when it comes to the advancement of AI. The study brings to the foreground emphasis on training as well as the provision of clear guidelines on ethical and sound teaching-oriented applications of Artificial Intelligence.

Table 3: Institutional Support for AI Use

Support Type	Yes (%)	No (%)
Training Workshops	62	38
Technical Support	54	46
AI Policy Guidelines	38	62
Peer Collaboration	46	54

Figure 3: Institutional Support for AI Use



The following are some of the main perceived benefits of AI in the education sector:

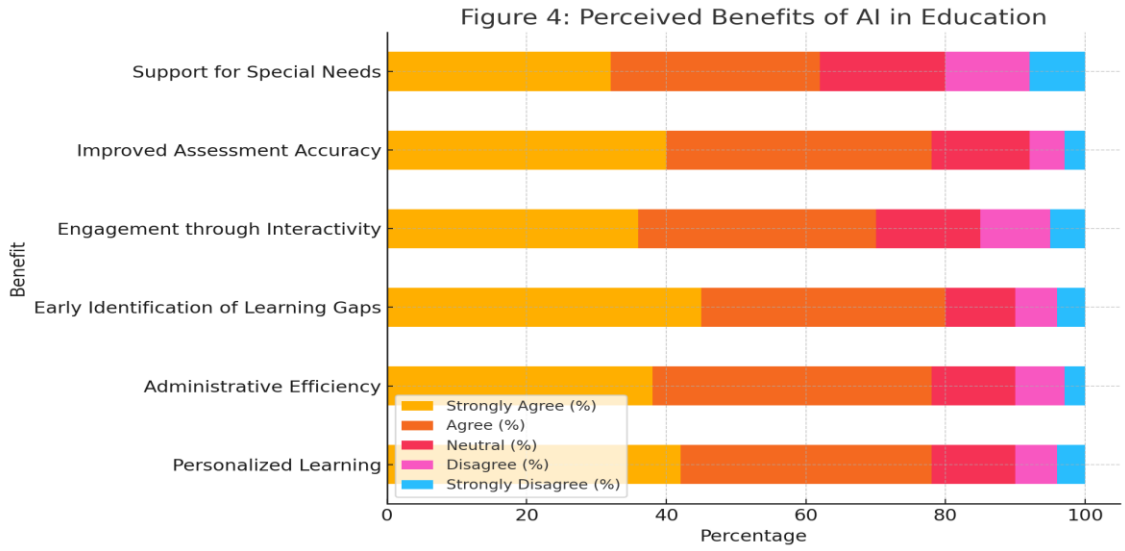
Teachers also identified several advantages of adopting AI in teaching, as presented in the following table and illustrated in the following figure. In appreciation, learning customization

received the highest level of support; 42% of the respondents strongly agreed, while 36% agreed that AI plays a great role in the customization of learning. Also, 45% strongly agreed with the statement that AI helps to identify learning barriers early thus implying that the teachers acknowledge AI as an instrument that is responsive in nature. Nevertheless, the concerns with regard to support of special needs and interactivity through application received a little less attention, which may signal the novelty and limited understanding of such utilization of AI.

Table 4: Perceived Benefits of AI in Education

Benefit	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
Personalized Learning	42	36	12	6	4
Administrative Efficiency	38	40	12	7	3
Early Identification of Learning Gaps	45	35	10	6	4
Engagement through Interactivity	36	34	15	10	5
Improved Assessment Accuracy	40	38	14	5	3
Support for Special Needs	32	30	18	12	8

Figure 4: Perceived Benefits of AI in Education



Challenges in AI Integration

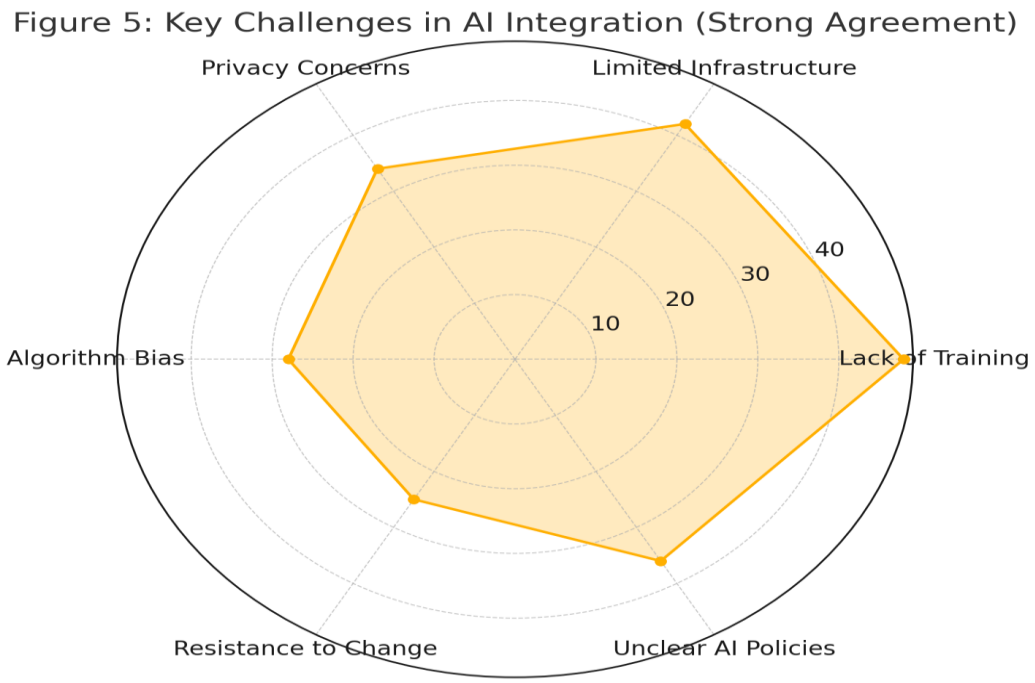
As revealed by the respondents in this study, there were also some disadvantages or challenges of telework, as highlighted below and summarized in Table 5 and Figure 5. The most significant reason was lack of training, and in this, 48% of the respondents strongly agreed that it greatly hinders its adoption. They also considered few infrastructure and privacy issues to be crucial as 42% and 34% of the teachers strongly agreed for the same. Notably, 28% of the teachers had a strong agreement on algorithm bias, which showed that more and more teachers were conscious of the ethical issues in this area. As the radar chart (Figure 5) displays, all these challenges intersect

with each other, suggesting that there is a systemic problem that requires interventions of technical, ethical, and policy kinds.

Table 5: Challenges Teachers Face with AI Integration

Challenge	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
Lack of Training	48	30	10	8	4
Limited Infrastructure	42	35	12	7	4
Privacy Concerns	34	40	14	8	4
Algorithm Bias	28	38	20	10	4
Resistance to Change	25	30	24	15	6
Unclear AI Policies	36	32	18	10	4

Figure 5: Key Challenges in AI Integration (Strong Agreement)



Teachers' Confidence in AI Tool Usage

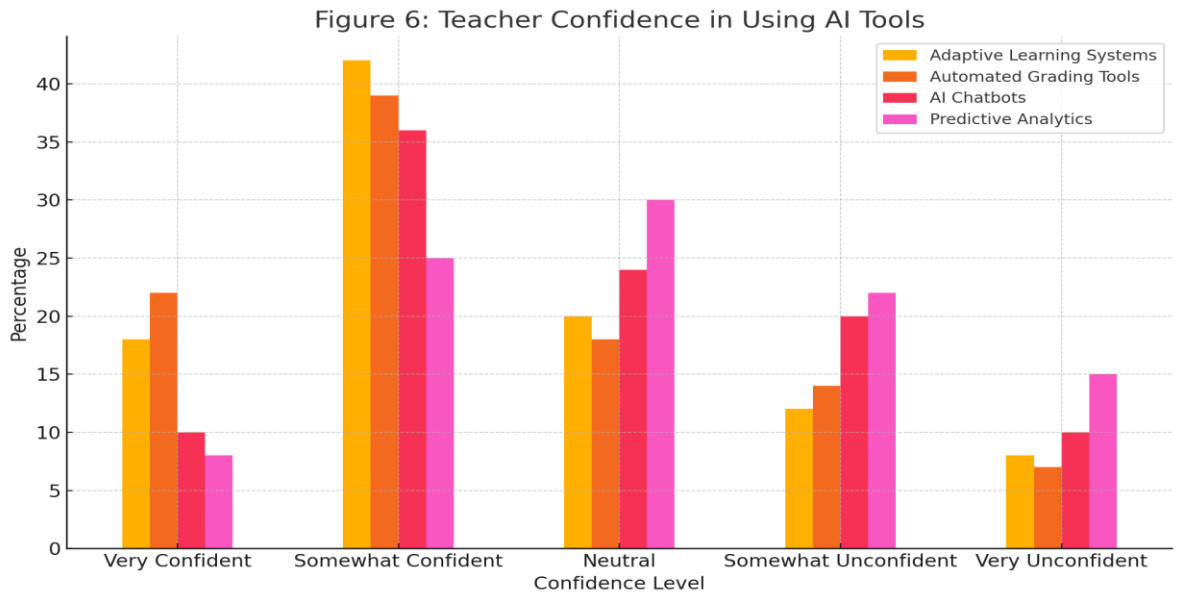
The perceived levels of confidence were relatively high of the kind of confidence that depends on what type of artificial intelligence tool that is in the subject. As highlighted in Table 6 and Figure 6, teachers' perceptions of automated grading systems and adaptive learning platforms indicate that, of the respondents, 22% felt very confident about using the automated grading system, while 18% about the adaptive learning platforms. Indeed, there was significantly less self-assurance about the use of predictive analytics tools; 8% of the respondents were very confident while 37% were not very sure. This probably could be due to some of the tools being complicated and some users may not have undergone intensive training in how to use the tools well but rather were just

assigned to the tools. The grouped bar chart in Figure 4.11 shows that improving teacher confidence would need focused practice and special, tools-focused strategies.

Table 6: Teachers' Confidence in Using AI Tools

Confidence Level	Adaptive Learning Systems (%)	Automated Grading Tools (%)	AI Chatbots (%)	Predictive Analytics (%)
Very Confident	18	22	10	8
Somewhat Confident	42	39	36	25
Neutral	20	18	24	30
Somewhat Unconfident	12	14	20	22
Very Unconfident	8	7	10	15

Figure 6: Teacher Confidence in Using AI Tools



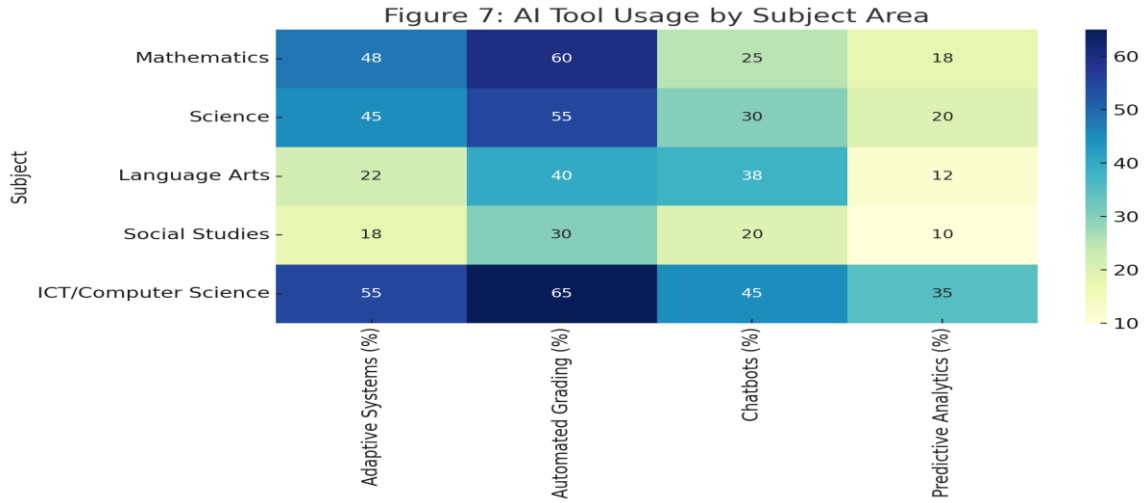
AI Tool Usage by Subject Area

This meant that the usage of AI technology varied across disciplines where some disciplines embraced the technology more than the other disciplines. As presented in Table 7 and in Figure 7, ICT/Computer Science had the highest percentage adoption rate of all tools, especially automated grading (65%) and adaptive learning (55%). Science and mathematics came closely on mathematics' heels. Humanities and social sciences remained relatively less interested in adopting AI especially with prediction analytics, which stood at below 15% across all the non-STEM disciplines. The heatmap also shows a stark differentiation between STEM and non-STEM points, potentially indicating that the applicability of the curriculum to the tool and perception of AI plays a role in how it is adopted by educators in various fields.

Table 7: AI Tool Usage by Subject Area

Subject	Adaptive Systems (%)	Automated Grading (%)	Chatbots (%)	Predictive Analytics (%)
Mathematics	48	60	25	18
Science	45	55	30	20
Language Arts	22	40	38	12
Social Studies	18	30	20	10
ICT/Computer Science	55	65	45	35

Figure 7: AI Tool Usage by Subject Area



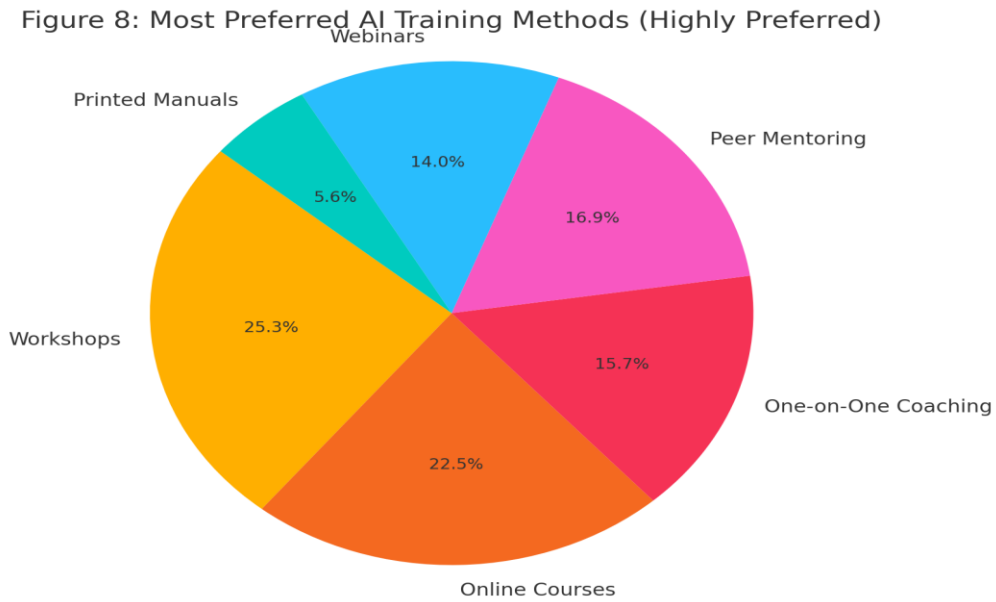
Preferred AI Training Methods

Among all the identified factors, training was shown to be essential for the readiness of educators in the context of AI. Table 8 and Figure 8 present teacher preferences for AI-related professional development. The survey also revealed that respondents preferred the type of training in this order: workshops (45%), online courses (40%), and one-on-one coaching (28%). Webinars and printed manuals were mentioned to be the least preferred, hence the preference of participants for life, engaging and, based on a 'by doing' approach. The pie chart effectively conveys these preferences and highlights the need for effective and context-based training which can be well understood, accepted and received by the teachers.

Table 8: Preferred AI Training Methods

Training Method	Highly Preferred (%)	Somewhat Preferred (%)	Not Preferred (%)
Workshops	45	35	20
Online Courses	40	38	22
One-on-One Coaching	28	40	32
Peer Mentoring	30	36	34
Webinars	25	32	43
Printed Manuals	10	25	65

Figure 8: Most Preferred AI Training Methods (Highly Preferred)



Discussion

The research findings presented in the paper point to a dynamic and multi-faceted model of interacting with AI by teachers in education. Teachers are assimilating AI technologies into their practice, however, their awareness, self-efficacy, and usage frequency varies according to the type of tool and the additional context support. This is in line with trends identified in the current literature implying that distribution and usage of AI in learning contexts do not necessarily depend on its integration, but the extent to which it supports learning objectives, teachers' practices, and teachers' culture (Luckin, 2021). Thus, the present work extends the conversation by demonstrating that the involvement of the teacher does not disappear with AI but is redefined and may be even broadened in some situations.

Another interesting trend identified from the data is the use and awareness of the tools such as automated grading and adaptive learning systems. These are add-on tools that are implemented into learning management systems to perform tasks that either relieve burden or assist in providing accommodation for differentiation, and this might be the reason behind the widespread adoption (Salas-Pilco et al., 2022). However, the application that calls for more advanced use such as, predictive analytics or AI-based personalization engines are among those reported to be used rarely, which shows that there is a wide gap between the idea and implementation in classroom learning. This is in line with global trends whereby second generation AI-use- AI interventions that require students to be conversant with data analysis or modeling- remain anathema to educators (Zhai et al., 2023).

These findings highlight the necessity of rethinking the perception of AI as just one solution that needs widespread familiarization but a group of tools that must have tailored support mechanisms. Literature review on AI often uses broad categorization but the findings from this research is in support of the idea by Ng et al. (2022) that every tool brings its unique value and its learning process in the classroom setting. Teachers do not merely use 'AI' but they work with some set of distinct instruments which may differ in terms of opacity, interactivity, and usefulness. Thus, there

is a need to implement professional development anchored on the tools that teachers use in their classrooms.

Therefore, the question of institutional support is one of the key themes identified in this study. Those schools which offered structured training for the teachers, technical support and clear policy support got better response from teachers regarding AI implementation. This is in line with the work of Tang et al. (2021) who claim that proper system support structures matters in the sustainable implementation of technology in learning. Lack of such structures results in application of structures that are localized and chaotic; this hampers scalability. Furthermore, policy vagueness escalates the teacher's stress, and that includes ethical issues like data protection, algorithm explanations, and responsibility.

Ethical considerations were less apparent in the quantitative results but were identified in qualitative responses and align with the findings of Holmes et. al., (2021) who noted that ethical literacy is required for becoming AI-ready in education. When the AI is involved in either generating assessment summaries, identifying at-risk students, or recommending individual learning progressions, ethics becomes a factor in the decisions that teachers have to make in reference to the AI's performances. These apprehensions are exacerbated by the opaqueness of many commercial AI systems such that Selwyn and Jandrić (2020) have termed it a black box pedagogy where teachers are expected to trust in un-enganche table results. The low confidence in using predictive analytics tools can be assumed not only by lack of IT expertise but also by several reasons connected to the concern from the deterministic nature of the tools.

In addition, the distribution of AI adoption differently across subject areas indicates that the skills gap that exists may further worsen the access to educational technologies. Computer science, information sciences and technology subjects and mathematics in particular revealed the greatest levels of AI adoption, the humanities,(Value 0.421) remained significantly lower. This is in agreement with Luckin and Holmes (2022) who note that the existing uses of AI in learning have primarily focused on countable disciplines. Therefore, language arts and social sciences either do not have suitable tools or have to struggle to employ adaptations of the generic tools. The lack of design for multiple context decisions that is entailing the pedagogical application of artificial intelligence will augment certain types of knowledge and learning style over the other.

Another important finding relates to the teachers' training preference; I also included this as a research question below: Face-to-face workshops, followed by online courses and one-to-one coaching, embraced most as these were interactive, time-intensive, and learning-context sensitive. This preference aligns with that of Lim and Wang (2021) whereby they opine that professional learning apropos digital competencies requires a form of professional learning that encompasses cycles of learning. However, training has to offer prospects of how teachers can consider AI in terms of their beliefs and classroom practice as has been suggested by Tsai and Gasevic (2022). Without this reflective component, training may lead to what K-12 educators' call compliance instead of the transformative changing of their practices.

This means that it is difficult to downplay emotional and cognitive readiness while analyzing the results. While there are several positive emotions toward AI, some teachers showed concerns or fear especially when handling complex technologies or lack of support. As Sun and Chen (2022) have noted, this emotional factor is rather important in influencing the readiness of teachers to engage in the use of new technologies. The evidential aspects in relation to the integration are the following: emotional safety, trust in the tools, and the belief about the curricular affordances.

Consequently, now the leadership in schools should focus not only at the technical aspects of modification but cultural and emotional too.

Therefore, this study has also highlighted the transformation of teachers' identity in the classroom that uses AI technologies. Instead of being supplanted by technology, teachers are assuming roles of brokers of knowledge environments, moral custodians of data, and co-architects of learning nexuses. This is in consonant with Biesta's (2020) educational professionalism as it focuses on judgment, agency, and relational care—all of which are in the domain of classroom teaching that cannot be outsourced to AI. While AI can help with evaluation, individualization or tracking of learning, it is the teacher who explains the information, puts it into the context and makes it personal. Maintaining the probability that AI contributes to this task rather than detracting from it should remain an ongoing concern within the discourse of policymakers, developers, and educators.

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