

## **TEACHERS AND TECHNOLOGY: ASSESSING AI AWARENESS AND ADOPTION IN ACADEMIA**

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### **Abstract**

Artificial intelligence is a computer based imitation of human intelligence; programmed in such a way to think, learn and execute orders that usually require human intellect. AI is reshaping the ways of acquiring and imparting knowledge. The need of the hour is to equip the learners and teachers with the skills to make the best of AI teaching tools; else the pace with which the AI is infusing in our lives, not updating our ways will make us the victims of "survival of the best". AI in education offers numerous benefits, including personalized learning experiences, increased efficiency through automation of administrative tasks, and enhanced student engagement and support. AI algorithms can analyze student data to tailor content and activities to individual needs, fostering greater motivation and learning outcomes. The aim of this study is to comprehensively explore the teachers' attitude towards the use of Artificial Intelligence (AI) technologies within education settings and utilization of

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*AI in teaching practices. This study was descriptive in nature and conducted at two universities: the University of Agriculture, Faisalabad, and Government College University, Faisalabad. One faculty from each university was selected randomly. The total population of teachers in the selected faculties was 197, and the sample size for the study was determined to be 130, using an online sample size calculator with a 95% confidence level and a 5% confidence interval. Data was collected using a structured, validated, and pretested questionnaire, and analyzed with the Statistical Package for Social Science (SPSS). The study found educators perceive AI's educational benefits positively but have limited understanding of specific tasks and tools, indicating a need for further training. While familiar with AI applications, actual usage varies, and there is caution about AI's broader impacts. Teachers' overall perception is very critical and are in strong agreement that misuse of AI can result in serious risks.*

**Keywords:** *Teachers' Attitude, Use of AI, Teachers' Perception. AI in Education, Teachers and Technology.*

### INTRODUCTION

*Artificial Intelligence (AI) consists of a wide range of technologies that aim to mimic human cognitive function (Fogel, 2022). It is developed to replace those tasks that normally require human thinking and intelligence, for instance data analysis, identification of patterns and trends in different fields, language translation, surveillance using cameras like Alexa and Siri etc. (Jimenez and Boser, 2021)*

*Explainability is a very special aspect of AI. It is the ability of AI systems to provide understandable and valid explanations or reasons for their decisions (Arrieta et al., 2020). This Explainability has a very crucial role in developing reliable and trustworthy AI systems especially in the field of healthcare because AI's reasoning is essential for its acceptance and adoption (Markus et al., 2021). But the introduction of AI in various fields raises some challenges regarding privacy, biases, and data accuracy (Iaia et al., 2023).*

*AI applications are evolving and expanding continuously so there is an increasing need to address ethical considerations and algorithmic biases of AI systems (Bellamy et al., 2019; McGovern et al., 2022). The introduction of AI tools in various fields requires careful consideration of factors like stability, safety, and suitability for autonomous functions (Brady et al., 2024). Additionally, the development of AI language models has transformed interactions between humans and technology, emphasizing the need for*

competency-based analyses to ensure effective integration in education and assessments (Tenakwah, 2023).

## **ARTIFICIAL INTELLIGENCE USE IN EDUCATION**

*The integration of AI is increasing rapidly in the education sector. It offers numerous benefits and opportunities. AI use in education led to significant improvements in efficiency, global learning, personalized learning experiences, smarter content delivery, and enhanced effectiveness in educational administration (Chen et al., 2020). In the field of education, the potential use of AI has been speculated by various scholars and the perception regarding its effectiveness in teaching practices and enhancing learning outcomes has been assessed. The non-teaching tasks like grading students' work, planning, scheduling etc. are the areas in which AI can significantly reduce a teacher's burden (Gardner et al., 2021).*

*As far as the effectiveness of AI from learners' point of view is concerned, AI can also be utilized in the development of different professional and personal skills especially in language and writing skills. (Sumakul et al., 2022). AI in Education (AIED) goes beyond traditional educational technology by leveraging AI sophistication to enhance learning efficiency (Park and Kwon, 2023). The application of AI in education aims to improve the cognitive abilities of learners, foster innovation, optimize resource utilization, and advance the overall development of educational practices (Jingshan, 2023).*

*In the realm of education, AI technologies are being utilized to design intelligent teaching methods to cater for individual learning needs, promoting fair and inclusive education for all (Dai, 2021). The implementation of AI in education has proven effective in simplifying teaching tasks, aiding educational management, and addressing challenges faced by the education sector (AlGhamdi, 2022). By incorporating AI techniques, higher education institutions can strive for excellence and enhance the overall quality of education (Talaat, 2021). AI and machine learning are widely adopted in education, offering diverse applications and benefits for educational institutions (Sultangazina et al., 2021).*

## **TEACHERS PERCEPTION ABOUT AI USE IN ACADEMIA**

*The way Teachers' perceive AI in academia is important for shaping the integration and effectiveness of AI-based tools in educational settings (Chou et al., 2023). However, teachers' perception of AI utilization is often limited due to their lack of experience with AI tools and uncertainty about how AI can be*

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*effectively employed in the classroom (Kim and Kim, 2022).*

*Some teachers have concerns about the potential of AI to replace them and over dependence on AI may affect the social intimation of students. Human interaction, guidance, and support are critical for students' growth (Ng et al., 2023). Studies highlight the importance of understanding teachers' perceptions to enhance AI curriculum planning and teaching practices (Yau et al. 2022). Additionally, exploring teachers' trust in AI-powered educational technology is crucial for improving its adoption and effectiveness in educational settings (Nazaretsky et al., 2022). Understanding user trust in AI-based educational systems is essential for their successful implementation and acceptance (Qin et al., 2020).*

*The use of AI in learning poses ethical issues that must be addressed. There are major concerns regarding the prejudice inherent in AI algorithms. Incorrect programming might lead to biased results or the propagation of certain views without transparency. Another concern is about data privacy and security. The process of collecting and using student data must be ethical and open. (Kong et al., 2023). Before integrating AI into the classroom, educators and policymakers should give significant thought to these ethical issues. To guarantee that AI is applied to students' advantage and not against them (Sanusi et al., 2022).*

### **OBJECTIVES OF THE STUDY**

- 1. To assess the knowledge and perception artificial intelligence in academia by teachers.*
- 2. To investigate the use of artificial intelligence by teacher in educational process.*

### **SIGNIFICANCE OF THE STUDY**

*There are many opinions about the introduction of AI into classrooms: some embrace the potential use of AI to enhance the learning experience while others, expressing concerns over job security, lack of training, lack of experimental trials conducted by education experts, moral applications and the limitations of AI-driven tools. It is crucial to understand teacher sentiments regarding AI before implementing it for instructional purposes. By analyzing teachers' concerns and expectations, institutes can develop appropriate AI systems to support teachers and learning processes.*

*As AI becomes increasingly prevalent in society, students will need to develop abilities and skills for navigating an AI-infused environment. While it has*

witnessed that there is a continuous rise in use of AI among students. Students are using AI driven translation tools for assistance in multilingual studies, different chatbots for immediate academic support and even for some coursework that is considered as plagiarism and cheating. The understanding of teachers' attitude towards AI in academia is important for beneficial and responsible use of AI. It will lead to the balanced use of AI in education which will maximize the positive effect of AI on students' learning process. It will also provide information regarding training needs related to use of AI. Hence, policymakers and educational institutions will be able to create policies that would make the process of fusion of AI more seamless into the Pakistan education system.

## **MATERIAL AND METHODS**

### **RESEARCH DESIGN**

*In this study a descriptive survey incorporated with mixed method approach by including a couple of open-ended questions was used.*

### **POPULATION OF STUDY**

*The population of present research work was the teachers of University of Agriculture Faisalabad (UAF) and Government College University Faisalabad (GCUF). These universities were selected conveniently for the research. One faculty from each university such as the faculty of social science from UAF and faculty of life science from GCUF were selected at random. There were approximately 133 teachers in the faculty of life sciences of GCUF and 64 teachers in faculty of social sciences of UAF, according to the list obtained from respective Dean Offices, at the start of the research. So the total populations of teachers in the selected faculties were 197.*

### **SAMPLE OF STUDY**

*For present study sample size of 130, determined by using online sample size calculator keeping confidence level 95% and confidence interval at 5. In this study for the selection of universities and respondents, the convenience sampling method was used.*

### **RESEARCH INSTRUMENT**

*The research instrument of the present study was developed and arranged through the deep reading of literature. A structured questionnaire was created based on the nature and objectives of the study. Five point Likert scales were used in the questionnaire for attaining the perception of respondents. To ensure validity and usefulness for data collection, all of the questions were developed*

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*in close collaboration with the research's supervisor and other faculty members. Pre-testing included 20 responders. The results of the pretesting were 0.862. This shows that the questionnaire was reliable.*

**DATA COLLECTION**

*The questionnaire was administered to each responder in person. The questionnaire was given to the chosen respondents (university teachers) with the request that they complete and return the questionnaire. This strategy was chosen since it was inexpensive and saved the researcher's time (i.e., filling out the questionnaire took only a short amount of time and was devoid of biases).*

**RESULTS**

**DEMOGRAPHIC CHARACTERISTICS**

**TABLE 1:**

*Demographic Characteristics of the study (N=130)*

<i>Categories</i>	<i>f</i>	<i>%</i>	
<b>Gender</b>	<i>Male</i>	<i>73</i>	<i>56.2</i>
	<i>Female</i>	<i>57</i>	<i>43.8</i>
<b>Age</b>	<i>21-30 years old</i>	<i>28</i>	<i>21.5</i>
	<i>31-40 years old</i>	<i>72</i>	<i>55.4</i>
	<i>41-50 years old</i>	<i>26</i>	<i>20.0</i>
	<i>51 years and above</i>	<i>4</i>	<i>3.1</i>
<b>Years of Teaching Experience</b>	<i>Less than 1 year</i>	<i>21</i>	<i>16.2</i>
	<i>1-5 years</i>	<i>55</i>	<i>42.3</i>
	<i>6-10 years</i>	<i>24</i>	<i>18.5</i>
	<i>11-20 years</i>	<i>30</i>	<i>23.1</i>
<b>Level of Education</b>	<i>MPhil/MS</i>	<i>33</i>	<i>25.4</i>
	<i>Doctorate/Ph.D.</i>	<i>96</i>	<i>73.8</i>
	<i>Post Doctorate</i>	<i>1</i>	<i>0.8</i>
<b>Teaching Role/ Designation</b>	<i>Lecturer</i>	<i>64</i>	<i>49.2</i>

	Assistant Professor	40	30.8
	Associate Professor	25	19.2
	Professor	1	0.8
<b>Geographic Location</b>	Urban	107	82.3
	Suburban	9	6.9
	Rural	14	10.8

The gender distribution shows a slight predominance of males, with 73 male teachers (56.2%) and 57 female teachers (43.8%). Age-wise, the majority of respondents fall within the 31-40 years old category (55.4%), followed by the 21-30 years old group (21.5%), Teachers aged 41-50 years old constitute 20.0% of the sample, while those aged 51 years and above are only 3.1%. In terms of teaching experience, most respondents have between 1-5 years of experience (42.3%), followed by those with 11-20 years (23.1%). Teachers with less than 1 year of experience make up 16.2%, and those with 6-10 years constitute 18.5%. The educational qualifications of the respondents are notably high, with the majority holding Doctorate/Ph.D. degrees (73.8%), followed by MPhil/MS degrees (25.4%). There is a minimal representation of Post Doctorate qualifications (0.8%). Regarding teaching roles, a significant proportion of the respondents are Lecturers (49.2%), with Assistant Professors making up 30.8%, Associate Professors at 19.2%, and Professors at 0.8%. Geographically, the majority of the respondents are from urban areas (82.3%), with fewer from suburban (6.9%) and rural areas (10.8%).

**KNOWLEDGE OF ARTIFICIAL INTELLIGENCE**

To determine knowledge of the respondents about AI, the researcher collected data on a 5 point Likert Scale (Scale 1= Not at all, 2= Slightly, 3= Moderately, 4= High, 5= Very high). The results are given in the table below:

**Table 2:**

**Frequency Distribution for Knowledge and Understanding of Respondents**

<i>I know and understand</i>	<i>Not at All</i>		<i>Slightly</i>		<i>Moderately</i>		<i>High</i>		<i>Very High</i>	
	<i>f</i>	<i>%</i>	<i>f</i>	<i>%</i>	<i>f</i>	<i>%</i>	<i>f</i>	<i>%</i>	<i>f</i>	<i>%</i>

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<i>Concept of artificial intelligence</i>	2	1.5 4	1 6	12. 31	59	45.3 8	36	27.6 9	1 7	13.0 8
<i>Use of AI applications and tools</i>	8	6.1 5	2 9	22. 31	54	41.5 4	25	19.2 3	1 4	10.7 7
<i>Some working principles behind AI</i>	5	3.8 5	5 4	41. 54	49	37.6 9	19	14.6 2	3	2.31
<i>Potential benefits of AI in educational practice</i>	4	3.0 8	8 8	6.1 5	8	6.15	51	39.2 3	5 9	45.3 9
<i>To Choose appropriate AI applications to solve problems.</i>	4	3.0 8	2 0	15. 38	53	40.7 7	43	33.0 8	1 0	7.69
<i>How to do well in the AI related task</i>	7	5.3 8	1 9	14. 62	61	46.9 2	31	23.8 5	1 2	9.23

***Mean Value and Standard Deviation according to The Knowledge of AI by Respondents***

<b><i>Respondents know and understand:</i></b>	<b><i>Mean</i></b>	<b><i>S.D</i></b>
<i>Potential benefits of AI in educational practice</i>	4.18	1.06
<i>Concept of AI</i>	3.38	0.91
<i>To Choose appropriate AI applications to solve problems.</i>	3.27	0.92
<i>How to do well in the AI related task</i>	3.17	0.97
<i>Use of AI applications and tools</i>	3.06	1.05
<i>Some working principles behind AI</i>	2.7	0.85

*The data presented in Table 2 reflects that the "Potential benefits of AI in educational practice" with a mean score of 4.18. Its mean lies between high to very high on scale, but more close to high level, which indicates that respondents generally perceive themselves to have a high understanding of how AI can be beneficial in educational settings. The "Concept of AI" ranked 2<sup>nd</sup> with a mean score of 3.38, "Choosing appropriate AI applications to solve problems" ranked 3<sup>rd</sup> with a mean of 3.27, "How to do well in AI-related tasks," ranked 4<sup>th</sup> with a mean score of 3.17. These means lie between moderately to high but more close*

to moderately level, suggesting the understanding of these areas are slightly above the moderate level. "Use of AI applications and tools" comes next, with a mean score of 3.06. This score is still in the moderate range. Finally, "Some working principles behind AI" ranks last, with a mean score of 2.7, indicating that respondents have only a slight to moderate understanding of the fundamental principles of AI, suggesting this area may need more attention and education.

**PERCEPTION OF RESPONDENTS ABOUT ARTIFICIAL INTELLIGENCE**

The researcher collected the data about the perception of respondents regarding AI by determining general perception, behavioral commitment and ethical concerns of respondents on 5 point Likert scale (Scale 1= Strongly disagree, 2= Disagree, 3= Neutral, 4= Agree, 5=Strongly agree).The results are given in the tables below:

**TABLE 3:**

**FREQUENCY DISTRIBUTION FOR PERCEPTION OF RESPONDENTS ABOUT ARTIFICIAL INTELLIGENCE**

<i>Statements</i>	<i>Strongly disagree</i>		<i>Disagree</i>		<i>Neutral</i>		<i>Agree</i>		<i>Strongly Agree</i>	
	<i>f</i>	<i>%</i>	<i>f</i>	<i>%</i>	<i>f</i>	<i>%</i>	<i>f</i>	<i>%</i>	<i>f</i>	<i>%</i>
<i>It's relevant to everyday life (e.g. Personal, work)</i>	5	3.85	16	12.31	57	43.85	39	30.00	13	10.00
<i>It's interesting.</i>	21	16.15	19	14.62	49	37.69	26	20.00	15	11.54
<i>Makes everyday life more meaningful.</i>	44	33.85	29	22.31	26	20.00	24	18.46	7	5.38
<i>I am curious about discovering new AI technologies.</i>	86	66.15	18	13.85	17	13.08	5	3.85	4	3.08
<i>Knowing AI technologies can give a career</i>	79	60.77	21	16.15	17	13.08	10	7.69	3	2.31

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*advantage.*

*Future career will involve AI*    71   54.62   23   17.69   18   13.85   15   11.54   3   2.31

**MEAN VALUE AND STANDARD DEVIATION ACCORDING TO THE PERCEPTION OF RESPONDENTS ABOUT AI**

<i>Perception of respondents regarding AI</i>	<i>Mean</i>	<i>S.D</i>
<i>It's relevant to everyday life (e.g. Personal, work)</i>	3.3	0.94
<i>It's interesting.</i>	2.96	1.21
<i>Makes everyday life more meaningful.</i>	2.39	1.27
<i>Future career will involve AI</i>	1.89	1.16
<i>Knowing AI technologies can give a career advantage.</i>	1.75	1.09
<i>I am curious about discovering new AI technologies.</i>	1.64	1.05

*Table 3, provides insights into respondents' perceptions of AI. The perception that AI is relevant to everyday life, both personally and professionally, ranked highest, with a mean value of 3.3. This suggests that respondents are generally neutral to agreeing with this statement, though leaning more towards neutral. The 2<sup>nd</sup> highest-ranked perception is that AI is interesting, with a mean score of 2.96, indicating a neutral stance among respondents. The statement that AI makes everyday life more meaningful ranked 3<sup>rd</sup>, with a mean of 2.39. This suggests that respondents are between disagreeing and neutral, but leaning more towards disagreeing. The belief that future careers will involve AI ranked 4<sup>th</sup> with a mean score of 1.89, and the perception that knowing AI technologies can provide a career advantage ranked 5<sup>th</sup> with a mean of 1.75. Lastly, curiosity about discovering new AI technologies ranks 6<sup>th</sup> with a mean value of 1.64, indicating a perception that ranges from strongly disagree to disagree, but is closer to disagree.*

**TABLE 4:  
FREQUENCY DISTRIBUTION FOR BEHAVIORAL COMMITMENT**

<i>Statements</i>	<i>Strongly disagree</i>		<i>Disagree</i>		<i>Neutral</i>		<i>Agree</i>		<i>Strongly Agree</i>	
	<i>f</i>	<i>%</i>	<i>f</i>	<i>%</i>	<i>f</i>	<i>%</i>	<i>f</i>	<i>%</i>	<i>f</i>	<i>%</i>

<i>I will continue to use AI in the future.</i>	74	56.92	20	15.38	21	16.15	12	9.23	3	2.31
<i>I will keep myself updated with the latest AI technologies.</i>	83	63.85	20	15.38	16	12.31	10	7.69	1	0.77
<i>I plan to spend time exploring new features of AI applications in the future.</i>	75	57.69	22	16.92	18	13.85	9	6.92	6	4.62
<i>I actively participate in AI-related learning activities.</i>	50	38.46	21	16.15	25	19.23	26	20.00	8	6.15
<i>I try to explain the AI learning materials to my colleagues or friends.</i>	74	56.92	28	21.54	12	9.23	13	10.00	3	2.31

***Mean Value and Standard Deviation according to Behavioral Commitment with AI Use by Respondents***

<b><i>Behavioral Commitment of Respondents</i></b>	<b><i>Mean</i></b>	<b><i>S.D</i></b>
<i>Actively participate in AI-related learning activities.</i>	2.39	1.33
<i>Will continue to use AI in the future.</i>	1.85	1.13
<i>Plan to spend time exploring new features of AI apps in the future.</i>	1.84	1.18
<i>Try to explain the AI learning materials to colleagues or friends.</i>	1.79	1.11
<i>Will keep oneself updated with the latest AI technologies.</i>	1.66	1.01

*Table 4, provides an analysis of respondents' behavioral commitment to AI use.*

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*The highest-ranked behavior is actively participating in AI-related learning activities, with a mean value of 2.39. This indicates that respondents are generally neutral to disagree with this behavior but more close to disagree. The intention to continue using AI in the future (mean =1.85), Planning to spend time exploring new features of AI applications in the future (mean =1.84), the behavior of trying to explain AI learning materials to colleagues or friends (mean=1.79) and the intention to keep oneself updated with the latest AI technologies (mean=.66) ranked 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> respectively. This suggests that respondents are “strongly disagree to disagree” but more close disagree stance. This indicates that respondents generally have a negative attitude towards engaging with AI in various behavioral aspects.*

**TABLE 5  
FREQUENCY DISTRIBUTION FOR ETHICAL CONCERNS**

<i>Statements</i>	<i>Strongly disagree</i>		<i>Disagree</i>		<i>Neutral</i>		<i>Agree</i>		<i>Strongly Agree</i>	
	<i>f</i>	<i>%</i>	<i>f</i>	<i>%</i>	<i>f</i>	<i>%</i>	<i>f</i>	<i>%</i>	<i>f</i>	<i>%</i>
<i>Users should be made aware of the purpose of the system (e.g. How it works and what limitations may be expected).</i>	49	37.69	18	13.85	30	23.08	23	17.69	10	7.69
<i>AI systems should meet ethical and legal standards.</i>	5	3.85	18	13.85	31	23.85	66	50.77	10	7.69
<i>Misuse of AI could result in substantial risk to humans.</i>	4	3.08	5	3.85	24	18.46	63	48.46	34	26.15

*People should be accountable for using AI systems.* 5 3.85 9 6.92 36 27.69 62 47.69 18 13.85

*AI systems should benefit everyone, regardless of physical abilities and gender.* 3 2.31 9 6.92 28 21.54 56 43.08 34 26.15

*AI systems should respect privacy.* 5 3.85 9 6.92 29 22.31 59 45.38 28 21.54

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***Mean Value and Standard Deviation according to The Ethical Concerns***

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<b><i>Ethical Concerns:</i></b>	<b><i>Mean</i></b>	<b><i>S.D</i></b>
<i>Misuse of AI could result in substantial risk to humans.</i>	<i>3.91</i>	<i>0.93</i>
<i>AI systems should benefit everyone, regardless of physical abilities and gender.</i>	<i>3.84</i>	<i>0.97</i>
<i>AI systems should respect privacy.</i>	<i>3.74</i>	<i>1.00</i>
<i>People should be accountable for using AI systems.</i>	<i>3.61</i>	<i>0.94</i>
<i>AI systems should meet ethical and legal standards.</i>	<i>3.45</i>	<i>0.95</i>
<i>Users should be made aware of the purpose of the system</i>	<i>2.44</i>	<i>1.35</i>

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*Table 5, examines respondents' ethical concerns regarding AI. The highest-ranked concern is the belief that the misuse of AI could result in substantial risks to humans, with a mean value of 3.91. This indicates that respondents generally agree with this concern. The concern that AI systems should benefit everyone, regardless of physical abilities and gender, ranked 2<sup>nd</sup> with a mean score of 3.84. The concern that AI systems should respect privacy ranked 3<sup>rd</sup> with a mean value of 3.74, and the view that people should be accountable for using AI systems ranked 4<sup>th</sup> with a mean score of 3.60. These mean values suggest that respondents hold a neutral to agree stance, leaning more towards agreement. The concern that AI systems should meet ethical and legal standards ranks 5<sup>th</sup>,*

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with a mean of 3.45, indicating that respondents are mostly neutral to agree. Lastly, the view that users should be made aware of the purpose of AI systems, including how they work and their limitations, ranks 6<sup>th</sup>. With a mean value of 2.44, this suggests that respondents generally disagree with this statement, as it lies between disagree and neutral but slightly close to disagree.

The analysis of respondents' perceptions, behavioral commitment, and ethical concerns regarding AI reveals a cautious and critical attitude. Respondents acknowledge the relevance of AI in daily life and find it interesting. However, their views on AI's impact on making life more meaningful and its potential career advantages are less positive, tending towards neutrality or slight disagreement.

**OBSERVANCE AND USE OF AI TECHNOLOGIES**

To gauge the familiarity of respondents about the AI technologies, the researcher collected the following data on a dichotomous scale (Yes/No).

**TABLE 6:**

**DISTRIBUTION OF THE RESPONDENTS ACCORDING TO THEIR OBSERVATION / USE OF AI TECHNOLOGIES.**

<i>Observed or used AI Technologies</i>	<i>Yes</i>		<i>No</i>	
	<i>F</i>	<i>%</i>	<i>f</i>	<i>%</i>
<i>Chatbots</i>	82	63.08	48	36.92
<i>Intelligent tutoring system</i>	71	54.62	59	45.38
<i>Automated grading system</i>	80	61.54	50	38.46
<i>Adaptive learning platforms</i>	79	60.77	51	39.23
<i>Predictive analytics for student performance</i>	66	50.77	64	49.23
<i>Virtual reality or augmented reality for education purpose</i>	65	50.00	65	50.00
<i>Personalized learning algorithms</i>	128	98.46	02	1.54

The table 6, shows the personalized learning algorithms with 98.46% are the most familiar and widely recognized AI technology. Chatbots with 63.08%, automated grading systems with 61.54% and adaptive learning platforms with 60.77%, are also widely known by respondents. The familiarity with intelligent tutoring systems (54.62%), predictive analytics for student performance

(50.77%), and virtual or augmented reality for educational purposes (50%) is nearly evenly divided among respondents.

### **FREQUENCY OF THE OBSERVATION AND USE OF AI TECHNOLOGIES.**

For determining the frequency of using AI technologies, the researcher collected data on a 5 point Likert Scale (Scale 1= Never 2= Rarely, 3= Sometimes, 4= Often, 5= Always). The results are given in the table below.

**TABLE 7:**

#### **MEAN VALUE AND STANDARD DEVIATION, ACCORDING TO THE USE OF AI TECHNOLOGIES BY RESPONDENTS**

<i>Use of AI technologies</i>	<i>Mean</i>	<i>S.D</i>
<i>Personalized learning algorithms</i>	3.38	0.91
<i>Automated grading system</i>	2.34	1.30
<i>Chatbots</i>	2.29	1.17
<i>Adaptive learning platforms</i>	2.21	1.19
<i>Intelligent tutoring system</i>	2.08	1.18
<i>Predictive analytics for student performance</i>	1.97	1.15
<i>Virtual reality or augmented reality for education purpose</i>	1.87	1.02

Table 7, presents an analysis of the frequency of use of various AI technologies by respondents. Personalized learning algorithms have the highest mean value of 3.38, suggesting that these technologies are used sometimes to often, though leaning more towards sometimes. The automated grading system, with a mean score of 2.43, chatbots with a mean score of 2.29, and adaptive learning platforms with a mean score of 2.21 respectively. These mean values indicate that these technologies are used slightly more than rarely, but still less frequently, falling between rarely and sometimes, but closer to rarely. The intelligent tutoring system, with a mean value of 2.08, and predictive analytics for student performance, with a mean score of 1.97, rank 5th and 6th respectively, indicating usage that is on the borderline of rare. Lastly, virtual reality or augmented reality for educational purposes ranks seventh, with a mean of 1.87. This indicates that these technologies are rarely used, as the mean falls between rare and never, but closer to rare.

#### **Use of AI application in Professional Life**

The researcher collected the data about the Knowledge of the following AI applications in professional life by respondents on a binary scale (Yes/No).

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**TABLE 8:  
DISTRIBUTION OF THE RESPONDENTS ACCORDING TO THEIR FAMILIARITY OF THESE AI APPLICATIONS.**

<i>Knowledge of AI applications</i>	<i>Yes</i>		<i>No</i>	
	<i>f</i>	<i>%</i>	<i>f</i>	<i>%</i>
<i>Gradescope</i>	122	93.85	08	6.15
<i>ChatGPT</i>	125	96.15	05	3.85
<i>Grammarly</i>	126	96.92	04	3.08
<i>QuillBot</i>	126	96.92	04	3.08
<i>Education Copilot</i>	123	95.61	07	5.38
<i>Duolingo</i>	82	63.08	48	36.92
<i>SlidesAI</i>	71	54.62	59	45.38
<i>Tutor AI</i>	80	61.54	50	38.46
<i>Classpoint AI</i>	79	60.77	51	39.23
<i>Brainly</i>	66	50.77	64	49.23
<i>Meta AI</i>	65	50.00	65	50.00
<i>Formative AI</i>	69	53.08	61	46.92
<i>Scite AI</i>	20	15.38	110	84.62

*The table 8, shows the distribution of respondents according to their knowledge of various AI applications. Grammarly and Quill Bot with 96.92% are the AI applications with the highest level of familiarity among respondents. ChatGPT is close behind with 96.15% familiarity, followed by Education Copilot with 95.61% and Gradescope with 93.85%. This suggests that respondents are quite familiar with and identify these applications. Applications such as Duolingo (63.08%), Tutor AI (61.54%) and Classpoint AI (60.77%) show a simple majority of respondents are familiar with them. Slides AI (54.62%), Formative AI (53.08%), Brainly (50.77%) and Meta AI (50.00%) shows almost half of the respondents are familiar with them. Lowest level of knowledge is observed with Scite AI (15.38%).*

*In the Anyother option, two respondents named Wordvoice AI, while Perplexity AI, Gemini AI, and Census AI were nominated by one respondent.*

## **FREQUENCY OF USING THESE AI APPLICATIONS IN PROFESSIONAL LIFE**

*The researcher collected the data about the frequency of using these AI applications in professional life by respondents on 5 point Likert scale (Scale 1= Never 2= Rarely, 3= Sometimes, 4= Often, 5= Always). The results are given in the table below*

**TABLE 9:  
MEAN VALUE AND STANDARD DEVIATION ACCORDING TO THE USE OF AI APPLICATIONS.**

<i>Use of AI applications</i>	<i>Mean</i>	<i>S.D</i>
<i>Grammarly</i>	<i>3.48</i>	<i>0.96</i>
<i>Quill Bot</i>	<i>3.27</i>	<i>0.92</i>
<i>Education Copilot</i>	<i>3.17</i>	<i>0.97</i>
<i>Gradescope</i>	<i>3.06</i>	<i>1.04</i>
<i>ChatGPT</i>	<i>2.70</i>	<i>0.85</i>
<i>Tutor AI</i>	<i>2.34</i>	<i>1.30</i>
<i>Duolingo</i>	<i>2.29</i>	<i>1.17</i>
<i>Classpoint AI</i>	<i>2.21</i>	<i>1.19</i>
<i>SlidesAI</i>	<i>2.08</i>	<i>1.18</i>
<i>Formative AI</i>	<i>2.05</i>	<i>1.17</i>
<i>Brainly</i>	<i>1.97</i>	<i>1.15</i>
<i>Meta AI</i>	<i>1.87</i>	<i>1.02</i>
<i>Scite AI</i>	<i>1.19</i>	<i>0.48</i>

*The data in Table 9 shows how frequently various AI applications are used. Grammarly stands out as the most frequently used application with a mean score of 3.48, indicating that users employ it sometimes to often range. Quill Bot, with a mean score of 3.27 ranked 2<sup>nd</sup> and Education Copilot has a mean score of 3.17 ranked 3<sup>rd</sup>, showing it is also used fairly as their means lie between sometimes to often range but more close to sometimes. Gradescope ranks 4<sup>th</sup>, with a mean score of 3.06, indicating sometimes use. ChatGPT, with a mean score of 2.7 ranked 5<sup>th</sup>, is used less frequently, typically between rarely and sometimes but more close to sometimes.*

*Tutor AI, ranking 6<sup>th</sup>, has a mean score of 2.34, Duolingo with a mean score of 2.29 ranked 7<sup>th</sup>, Classpoint AI with mean scores of 2.21 ranked 8<sup>th</sup>, showing it is used between rarely to sometimes but more close to rarely. SlidesAI, and Formative AI has mean of 2.08, and 2.05, respectively. These applications are*

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*used rarely. Brainly and Meta AI, with mean scores of 1.97 and 1.87, show infrequent use, ranging near to rare usage. Finally, Scite AI with the lowest mean score of 1.19, is almost never used, indicating minimal engagement from users.*

### DISCUSSIONS

*The demographic profile of this study (with sample size; N= 130) illustrates a varied and balanced sample of educators. The diversity in age, experience, education level, teaching role, and geographic location (see table 1) ensures that the study captures a wide range of perspectives, which is critical for developing comprehensive and effective strategies for AI integration in education.*

*The most of the teachers have a good sense of how AI can help in education. They seem positive about it. But when it comes to real understanding of what AI is and how to use it well in educational settings, there is still a lot of uncertainty. Many teachers are not fully confident about choosing the right AI tools or handling AI related tasks. They don't know much about how AI actually works behind the scenes (table 2). Gocen and Aydemir (2020) explored that mostly educationists have a positive attitude towards AI. Shirin (2022) found that the educators viewed it as a healthy possibility that AI should be embedded in the education strategies. However Kim and Kim (2022) found that teachers had an average understanding of AI, with a relatively negative perception.*

*The analysis of respondents' perceptions, behavioral commitment, and ethical concerns regarding AI reveals a cautious and critical attitude. Respondents acknowledge the relevance of AI in daily life and find it interesting. However, their views on AI's impact on making life more meaningful and its potential career advantages are less positive, tending towards neutrality or we can say slight disagreement (table 3).*

*In terms of behavioral commitment, respondents show limited engagement with AI. The highest-ranked behavior, actively participating in AI-related learning activities, falls within a neutral to disagree range tending more towards disagreement. Other behaviors, such as the intention to continue using AI, exploring new features, explaining AI to others, and staying updated with AI technologies, reflect a general reluctance to engage with AI (table 4). Shirin (2022) discovered that university teachers had minimal understanding of AI, but recognized its potential as an educational tool. They considered it as an*

educational tool and are willing to incorporate AI in education in future. An et al. (2022) suggested that teachers' behavioral commitment to incorporate AI in future depends on their technical knowledge, perceived benefits and social influence. Polak et al. (2022) found that educators are highly motivated to implement AI tools and AI based content. But here we can see somehow negative attitude. This reluctance is may be due to lack of technical knowledge.

Ethical concerns are significant among respondents. There is strong agreement that AI misuse could pose risks, and AI systems should respect privacy and benefit everyone. The need for accountability in AI usage and adherence to ethical and legal standards is also supported (table 5).

Table 6 and 7 shows that AI is still quite new for most teachers. They are familiar with a few tools but have not really brought a lot of these technologies into their everyday teaching yet. It shows that there is a real need for more training, and time to get teachers more comfortable in using AI for teaching purpose.

Teachers seem most comfortable with applications like Grammarly and QuillBot. These are being used fairly often compared to others. Gradescope is also being used but not as much. ChatGPT is getting some use too. But it is not as common as the writing tools. The applications like Tutor AI, Duolingo, Classpoint AI, and SlidesAI, the usage drops more. Most of the teachers are using them only once in a while. Tools like Formative AI, Brainly, Meta AI, and especially Scite AI are rarely used by teachers. Scite AI, in particular, seems almost unknown among teachers (table 8 and 9). It shows that teachers mostly use AI tools which help them with writing and grading. Other tools, especially more advanced ones are barely used. Teachers seem comfortable with a few common AI application but have not explored many of the newer or more specialized ones yet.

Sysoyev (2023), mentioned that the integration of AI tools in education is still in its early stages. In general, university instructors have a limited knowledge of the organizational, teaching, and learning potential of AI tools. Many educators have segmented knowledge, which mainly relates to their professional activity in teaching specific disciplines, and are unable to paint a holistic picture of the potential of AI in education. At the same time, most university instructors report a neutral stance or enthusiasm to use AI tools in teaching activities. The practical application of AI tools in the educational process is confined to a few circumstances when specific technologies are used to teach certain components of a discipline.

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### CONCLUSION

1. Respondents perceive AI's potential benefits in education positively. However, their grasp of specific AI tasks, tool usage, and underlying principles appears more limited, indicating room for further education and skill development in these areas. Despite widespread familiarity with AI applications like Grammarly and Quill Bot, actual usage varies significantly.
2. Respondents demonstrate a cautious stance towards AI, acknowledging its relevance in daily life but expressing reservations about its broader impacts. While they find AI intriguing and recognize its practical benefits, they show less optimism regarding its potential to significantly enhance career advantages. Their engagement with AI-related learning activities and adoption of new technological features is limited, reflecting a reluctance to actively participate.
3. Ethical concerns are pronounced, with strong agreement on the risks of AI misuse, the importance of privacy protection, the need for ethical accountability and adherence to legal standards in AI implementation.

### SUGGESTIONS

1. Increase awareness about AI's potential and limitations through seminars, newsletters, and informational sessions, emphasizing how AI complements traditional teaching methods and showcasing success stories of AI enhancing teaching roles.
2. Training programs should be organized for teachers to address both conceptual understanding and practical applications of AI, providing hands-on experience with tools and incorporating feedback loops.



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