



## Knowledge and Attitudes of Faculty Members Regarding Artificial Intelligence (AI): A Case Study in Higher Education

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### ARTICLE INFO

#### Article History:

Received: 11 January 2024

Received in revised form: 19 February 2024

Accepted: 27 February 2024

DOI: 10.14689/ejer.2024.110.14

#### Keywords

Artificial Intelligence, Knowledge, Attitudes, Higher Education, Faculty Members.

### ABSTRACT

**Aim:** The study was conducted to improve our knowledge of the current level of knowledge and attitudes towards artificial intelligence among university faculty members at Abu Dhabi University. **Method:** A questionnaire containing 35 items was distributed to 116 faculty members (n=116) using the descriptive approach method. It was found that the perceptions of faculty members at Abu Dhabi University about their level of knowledge about artificial intelligence were at a high level, with an arithmetic average of 4.03. **Results:** It was found that the level of their attitudes towards artificial intelligence

was also at a high level with an average of 3.82. **Conclusion:** Findings have confirmed that the level of knowledge of female faculty members and their attitude towards using artificial intelligence is higher than the level of knowledge of male faculty members. Depending on the category of college (in favor of the Law College) and finally, there was no statistical significance according to academic position.

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## Introduction

Several studies have assessed the knowledge of AI among various groups, including the public, policymakers, and healthcare professionals (Celik et al., 2022). A survey conducted by the Pew Research Centre found that only 17% of US adults are knowledgeable about AI, while 58% have heard about it but do not know much. Another study by the National Science Foundation found that AI knowledge among US policymakers is limited, with only 10% reporting a high level of knowledge. In healthcare, a study by the American Medical Association found that only 15% of physicians are knowledgeable about AI. Studies have also assessed attitudes toward AI among various groups. A survey conducted by Gallup found that most US adults have a positive attitude toward AI, with 79% believing that AI has more advantages than disadvantages. However, another survey by the Brookings Institution found that 61% of US adults are concerned about the impact of AI on jobs. In healthcare, a study by

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the American College of Radiology found that radiologists have mixed attitudes toward AI, with some perceiving it as a threat to their jobs while others view it as a tool to improve patient care (Holmes et al., 2022). The implementation and use of AI technologies vary across different industries (Joshi, Rambola, & Churi, 2021).

In healthcare, AI is being used for various applications, including diagnosis, drug discovery, and clinical decision-making (Tunjera & Chigona, 2023). However, the implementation of AI in healthcare also poses significant challenges, including data quality, privacy, and security. In finance, AI is being used for fraud detection, risk assessment, and customer service (Onesi-Ozigagun et al., 2024). However, concerns about bias and transparency have been raised, particularly in credit scoring algorithms. In transportation, AI is being used for autonomous vehicles and traffic management. However, safety concerns and regulatory issues remain significant challenges (Baidoo-Anu & Ansah, 2023). The development and deployment of AI technologies also pose significant challenges, including ethical and social implications, technical limitations, and concerns about bias and transparency. Ethical concerns include issues related to privacy, transparency, accountability, and bias (Perrotta & Selwyn, 2020). Technical limitations include challenges related to data quality, algorithmic complexity, and system interoperability.

Social implications include concerns about the impact of AI on employment, education, and social inequality (Adigüzel, Kaya, & Cansu, 2023). The knowledge, attitudes, practices, and challenges of AI are critical areas that require attention from various stakeholders, including policymakers, industry leaders, and researchers (Yau et al., 2023). Understanding these factors is essential for the responsible and ethical development and deployment of AI technologies in different domains (Mhlanga, 2023). Further research is needed to address the challenges and opportunities of AI and to ensure that AI technologies are developed and used in a way that benefits society. The current study will investigate the current level of knowledge and attitudes towards artificial intelligence among university faculty in the UAE, as well as the challenges and benefits of using AI in higher education institutions. The study also aims to identify the main applications of AI used by faculty members in UAE-based universities.

The research was designed with an objective to examine the level of knowledge and attitudes of university faculty members in higher education institutions in the UAE in relation to artificial intelligence. Furthermore, the study will address three questions. Firstly, what is the current level of knowledge of using AI among faculty at Abu Dhabi University? Secondly, what is the current level of attitude towards AI among faculty at Abu Dhabi University? Thirdly, does the level of knowledge, and attitude of using AI, vary, among the faculty members according to gender, academic position, and years of experience?

## Literature Review

AI has a significant importance in routine life. The use of AI in academic learning and performance is critical over the time (Fitria, 2021). In the higher education, AI gained a significance importance where smart working approach is developed by it. The teachers in different colleges and universities are using AI for their working (Kim et al., 2020). The fair use of AI is in preparation of learning material for the students. It helps to understand the human behavior and the context of any material development. The smart approaches of AI are significant for advancing the behavior of students towards their learning (Kim, Lee, &

Cho, 2022). The practices of students to improve their better approach of working is helpful in way of their performance. Students plan to improve their working approach which is significant in organizational advancements (Chan, 2023). However, it is the key responsibility of the teachers to introduce the use of AI to the students for betterment in their learning. The ethical use of AI is to get assistance and smart working behavior (Lameras & Arnab, 2021). AI helps to plan, create and design the course material which can be helpful for both teachers and students to improve their understanding. The advancement in AI over the time is also found in mobile phones used by the students (Nazaretsky et al., 2022). The interaction of students is improved towards the use of AI which is also good factor for the teachers to introduce it for improving the learning behavior of students. Many students are encountered with AI in different context, which can help the students to advance their learning behavior (Misirli & Ergulec, 2021). Fair way of using AI is also found in university teachers which helps them to plan the teaching material and get assistance in other research activities. Hence, AI is considered as a way forward for advocating the learning of students when it is fairly and accurately used by the teachers (Holmes & Tuomi, 2022).

AI is also used by teachers for research purpose because it helps to find the material and arrange it (Alam, 2021). The smart working way of teachers with the use of AI can improve their understanding regarding AI which can help to improve the learning approaches for working. Advancements in AI are necessary to achieve strategic goals which are helpful to achieve the organizational advancements (Whalen & Mouza, 2023). Successful use of AI for research purpose helps to identify best research methodology which is significant for the students to improve their learning. The significant approach in developing research methodology is a way forward for advancements of AI (Wu, 2023). Appropriate use of AI for research purpose can foster the understanding of teachers. The advanced generative AI is being used in every kind of learning and teaching. In educational institutes, language based generate AI has its own value which is a way forward to develop proper understanding for significant working (Salas-Pilco, Xiao, & Hu, 2022). The fair approach to use AI helps the students as well in their learning. Students can use AI to design their classroom material and have significant approach in their work development. Appropriate way of technological advancement and significance use of AI in the medical field is also used for improve their learning behavior of the students (Celik, 2023). The fair working approaches in AI can improve the knowledge and best practices for learning. Accordingly, there is also need to improve the customization of AI for the use of students and their learning which can improve the culture of students and their working (Alam & Mohanty, 2022). Hence, teachers are also required to have appropriate support for their learning and integration of AI for advancement in students' performance (Chiu et al., 2023). New modules of AI would be helpful for the students to advance their learning behavior which is a way forward for technological development.

Academic experience and gender of teachers also deviate the use of AI (Chounta et al., 2022). The teachers of old generation are hard to adapt the use of AI for their academic purpose. These teachers prefer to work manually because of their expertise (Limna et al., 2022). It is required to provide them proper training for the use of AI which can help the teachers to advance their learning and material preparation with the use of AI. The strategic approaches of the teachers for use of AI are necessary to develop proper working approaches for AI development (Schiff, 2022). The new generation teachers are more open to use AI which is a significant factor to integrate it for appropriate learning. The students

and teachers who having different approaches are required to work differently (Adigüzel et al., 2023). The advancements in teachers' attitude of working is a way forward to develop better opportunities for their working. The stable working approach of teachers is necessary for improving their learning which is a way forward for their academic performance (Mhlanga, 2023). The strategies are required for advocating best practices for teachers which are necessary to foster their culture of learning performance. Hence, the use of AI is emerged for teachers which can help them to develop their strategies in better way, and foster culture of smart work (Celik et al., 2022). The advancements in the way of smart working can help the teachers to improve their strategic working which is helpful to improve their learning performance. University administration is also required to ensure the faculty is trained with effective working approach which can help the students with advancement in culture of innovation and working (Zhai et al., 2021). The reliable training and workshops for teachers can lead to best practices which are necessary for advancement in students learning (Yau et al., 2023). Besides, the necessary actions of teachers are a possible way forward to ingrate AI for the research practices.

## Methodology

### Study Approach

This study will use a qualitative method. The participants of the study will be faculty members from UAE-based universities who are actively involved in teaching. Sampling: The sampling technique will be a stratified random sampling method. The faculty members will be stratified based on their field of study and then randomly selected from each stratum.

### Participants of Study

The study participants consist of all male and female faculty members across all colleges of Abu Dhabi University who are still working at the university in the 2022/2023 academic year. The total participants were 116 faculty members, as shown in Table 1 and Figure 1.

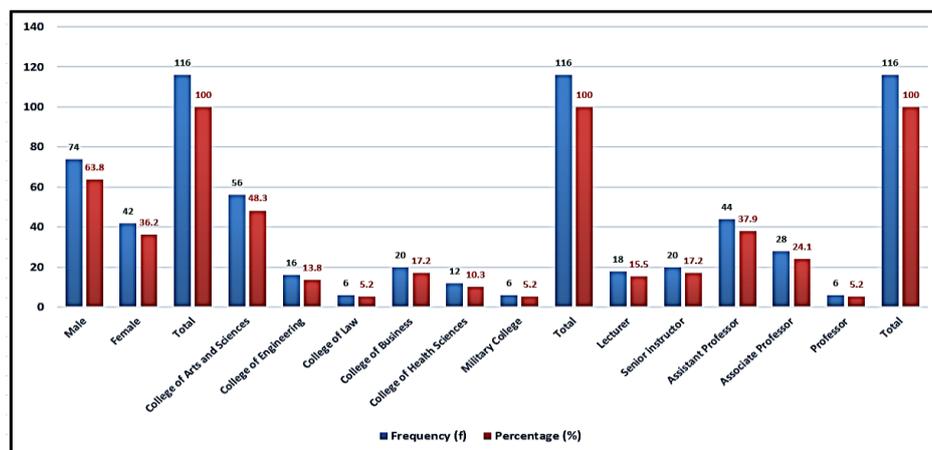


Figure 1: Demographic Information of Students.

**Table 1**

*Demographic Information of Students*

Study Variables	Variables Levels	Frequency (F)	Percentage (%)
Gender	Male	74	63.8
	Female	42	36.2
	Total	116	100.0
College	College of Arts and Sciences	56	48.3
	College of Engineering	16	13.8
	College of Law	6	5.2
	College of Business	20	17.2
	College of Health Sciences	12	10.3
	Military College	6	5.2
	Total	116	100.0
Academic Position	Lecturer	18	15.5
	Senior instructor	20	17.2
	Assistant Professor	44	37.9
	Associate Professor	28	24.1
	Professor	6	5.2
	Total	116	100.0

**Study Instrument**

The questionnaire was surveyed to respondents during the second semester of the 2022/2023 academic year. The questionnaire consisted of two parts: demographic information and scale items.

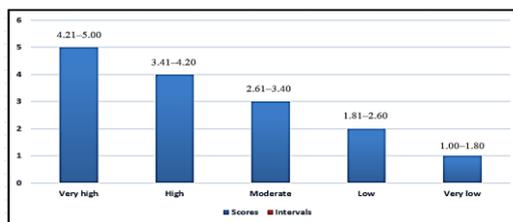
**The Validity of the Instrument**

We asked eight arbitrators with expertise in the field of education (8 faculty members from UAE Universities) to provide their opinions regarding the items of the questionnaire. Based on deletion, amendment, and addition, the educational specialists offered comments and modifications. To achieving the research objectives, the modified questionnaire included 35 elements.

**Reliability of the Instrument**

The study conducted a pilot study and collected a sample of 40 respondents. Coefficient of reliability such as Cronbach alpha was tested. The findings for each scale above 0.70 confirmed the reliability of study scale.

**Data Analysis Measures**



**Figure 2:** A Scale and Score Interval is Used to Evaluate Scale Data.

A five-point Likert scale was used for collection of data. Previous studies in literature also used five-point scale to collect appropriate data for the research (Figure 2). This scale was considered appropriate for the respondents to understand and response appropriately.

### Data Analysing Tool

Statistical package for social sciences (SPSS) version 29 was used for statistical analysis. We performed the tests including “percentages, means, standard deviations, independent t-tests, one-way ANOVA, and Scheffe tests”.

## Results

### Findings of the Study Attributed to First Question

Firstly, we analyzed findings to answer the question: what is the current level of knowledge of Using AI among faculty at Abu Dhabi University? We analyzed the average scores and standard deviations of the faculty participants’ answers to each item of the study tool (1-14) related to the first question. The findings shown in Table 2 show that the mean for responses for all items (1-14) was 4.03 (SD 0.84), indicating that the faculty members point of view on the level of knowledge of Using AI among faculty at Abu Dhabi University was High.

**Table 2**

*Faculty Members' Knowledge of Using AI*

No.	Paragraphs	Mean	SD	Description
Q1	I am familiar with the concept of Artificial Intelligence	4.17	0.70	Moderate
Q2	I use various AI tools in teaching, learning, and assessment.	3.70	0.99	High
Q3	I find AI more useful in teaching and learning than in assessment.	3.76	1.01	High
Q4	I use AI tools as these make learning more interesting and impactful.	4.20	0.75	High
Q5	I know about the application of AI in the Education field	4.06	0.80	High
Q6	I am familiar with the basics of artificial intelligence, such as its definition and its techniques/features.	4.21	0.71	V. High
Q7	I understand the difference between artificial intelligence, machine learning, and deep learning.	3.63	1.17	High
Q8	I am familiar with the concept of big data and its impact on AI.	3.90	0.96	High
Q9	I am aware of the ethical / social implications of artificial intelligence.	4.28	0.59	V. High
Q10	I am familiar with the applications of AI in various industries, such as healthcare, finance, and transportation.	3.97	0.85	Moderate
Q11	I am aware of the fact that AI has limitations in teaching & learning.	4.19	0.70	Moderate
Q12	I am aware that AI has inaccuracies / errors.	4.24	0.72	V. High
Q13	I am aware that AI applications are major / specialization specific and may not be generalized.	4.14	0.87	Moderate
Q14	I am aware of the importance logical reasoning and causal analysis of AI applications.	3.96	0.93	Moderate
Total		4.03	0.84	High

**Findings of the Study Attributed to Second Question**

We analyzed the findings to answer the question: what is the current level of attitude towards AI among faculty at Abu Dhabi University? We analyzed the average scores and standard deviations of the faculty participants' answers to each item of the study tool (15-35) related to the second question. Table 3 shows that the mean for responses for all items (15-35) was 3.82, (SD 0.97), indicating that the faculty members point of view on the level of attitude towards AI among faculty at Abu Dhabi University was moderate.

**Table 3**

*Faculty Members' Attitude Towards AI*

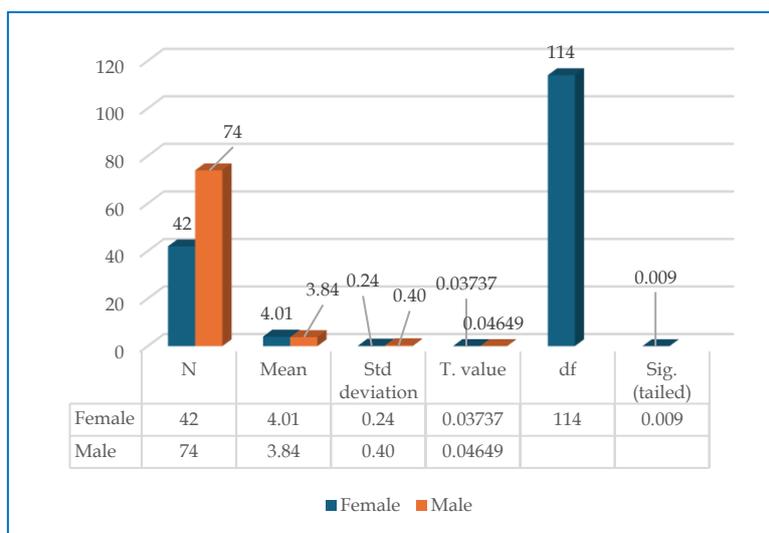
No.	Paragraphs	Mean	SD	Description
Q15	I believe that the use of AI in education is highly beneficial.	4.14	0.86	Moderate
Q16	I think that AI has the potential to greatly enhance the learning experience for students.	4.12	0.92	High
Q17	I am confident in effectively integrating AI into my teaching.	3.90	0.87	High
Q18	I am optimistic about the future of AI in education.	3.93	0.97	High
Q19	I think that AI has the potential to reduce the role of teachers in the classroom.	3.12	1.20	High
Q20	I am worried about the ethical implications of using AI in education.	3.83	0.94	High
Q21	I believe AI-powered educational content is not always appropriate	3.62	0.89	High
Q22	AI-powered learning activities will enhance the efficiency (less errors / less resources) of the higher education system	3.53	0.99	High
Q23	Educational content prepared by AI technology is useful	3.91	0.86	Moderate
Q24	AI technology is not easy to learn	2.64	0.98	Moderate
Q25	I can use AI-based applications even if I am not familiar with the underlying AI technologies	3.99	0.92	Moderate
Q26	Personalized content can be prepared using AI-technology	3.88	0.95	Moderate
Q27	My institute encourages its faculty to use modern technology	4.26	1.06	Moderate
Q28	People should learn AI technology for the future need of the higher education sector	4.41	0.81	Moderate
Q29	I am willing to use AI technology for developing smart content	4.34	0.78	Moderate
Q30	I shall recommend all the stakeholders in higher education explore AI technology for their academic purpose	4.15	0.85	Moderate
Q31	The application of AI in higher education will make education more interactive	3.98	1.10	Moderate
Q32	The application of AI in higher education will make it cost-effective	3.59	1.15	Moderate
Q33	The application of AI in higher education will make the teaching-learning activity more interesting	3.97	1.02	Moderate
Q34	I find the use of traditional teaching methods better in comparison to AI in the classroom.	3.14	1.15	Moderate
Q35	I believe that AI training should be a mandatory part of higher education	3.74	0.98	
Total		3.82	0.97	Moderate

**Findings of the Study Attributed to Third Question**

We analyzed data to find the answer for question: does the level of knowledge, and attitude of using AI, vary, among the faculty members according to gender, academic Position, and Years of experience? We performed T-testing and one-way ANOVA to determine the significance of variations between averages, as well as LSD post-hoc comparison test was conducted. Study variables are listed below as well as the results of the answers given by the study subjects.

*Gender Variable*

According to Table 4 and Figure 3, T-tests were used to determine the significance of the differences between averages of knowledge and attitude to AI among faculty members by gender. As presented in Table 4, and Figure 3, the findings clearly illustrated that the computed t value was 2.393, which is larger than the (t) table, indicating the presence of significant differences between the mean values for males and females, at the significance level of 0.009, which is less than the required statistical significance level (0.05) in favour of females. This result means that the level of knowledge of female faculty members and their attitude towards using artificial intelligence is higher than the level of knowledge of male faculty members.



**Figure 3:** Means and Standard Deviations of the Students' Answers Based on Gender.

**Table 4**

*A Means and Standard Deviation for the Responses of Faculty Members by Gender*

Gender	N	Mean	SD	Mean Difference	T. Value	df	Sig.
Female	42	4.01	0.24	0.16248	2.393	114	0.009*
Male	74	3.84	0.40				

\* Statistically significant at (p<0.05)

College Variable

An ANOVA was used to find the significance of the differences between faculty members' average knowledge and attitude to AI according to college variables, as seen in the Table 5 and Figure 4.

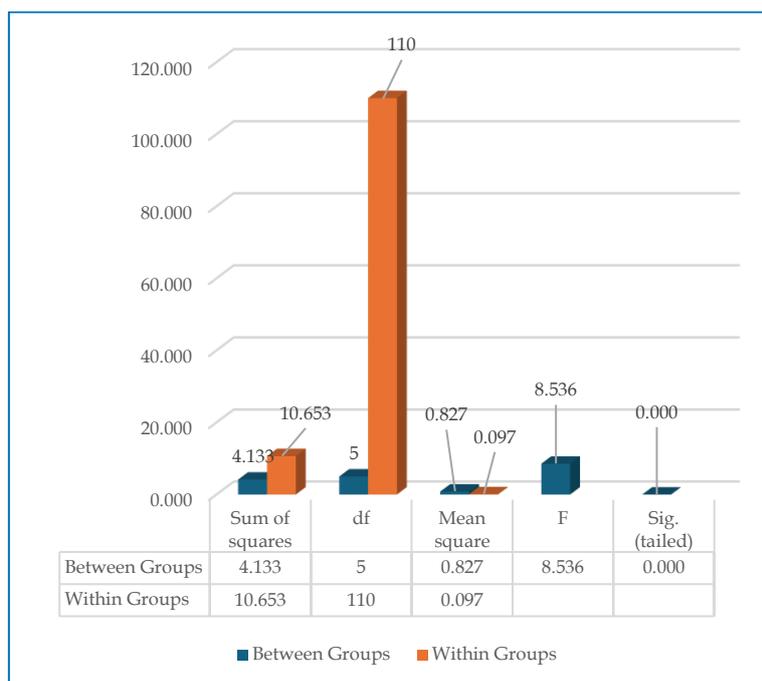


Figure 4: One-way ANOVA Test for the College Variable Among Faculty Members.

Table 5

One-way ANOVA Test for the College Variable Among Faculty Members

		Sum of Squares	Df	Mean Square	F	Sig. (Tailed)	Sig. Level
College variable	Between Groups	16.394	8	2.049			
	Within Groups	595.321	1733	0.344	5.966	0.001	Significant
	Total	611.715	1741				

\* Statistically significant at (p<0.05)

Table 5 and Figure 4 illustrated that there is statistical significance in the variables of College and Students' Perspectives, as the p-value was 0.000, which is smaller than the required 0.05 significance level. For these comparisons, the LSD test was used to identify the source of the differences, and the results are shown in Table 6. The findings highlights that the source of the differences between faculty members' average knowledge and attitude to AI according to college variables was in favour of faculty member of the Law College.

**Table 6**

LSD Test Results According to the Variable "College"

College	College	Mean Difference	Sig.
College of Arts and Sciences	College of Engineering	-0.06306	0.476
	College of Law	-0.19579	0.146
	College of Business	.43495*	0.000
	College of Health Sciences	-0.13870	0.164
	Military College	-0.03865	0.773
College of Engineering	College of Arts and Sciences	0.06306	0.476
	College of Law	-0.13274	0.375
	College of Business	.49800*	0.000
	College of Health Sciences	-0.07564	0.526
	Military College	0.02440	0.870
College of Law	College of Arts and Sciences	0.19579	0.146
	College of Engineering	0.13274	0.375
	College of Business	.63074*	0.000
	College of Health Sciences	0.05710	0.714
	Military College	0.15714	0.384
College of Business	College of Arts and Sciences	-.43495*	0.000
	College of Engineering	-.49800*	0.000
	College of Law	-.63074*	0.000
	College of Health Sciences	-.57365*	0.000
	Military College	-.47360*	0.001
College of Health Sciences	College of Arts and Sciences	0.13870	0.164
	College of Engineering	0.07564	0.526
	College of Law	-0.05710	0.714
	College of Business	.57365*	0.000
	Military College	0.10005	0.522
Military College	College of Arts and Sciences	0.03865	0.773
	College of Engineering	-0.02440	0.870
	College of Law	-0.15714	0.384
	College of Business	.47360*	0.001
	College of Health Sciences	-0.10005	0.522

\*. The mean difference is significant at the 0.05 level.

Academic Position

**Table 7**

One-way ANOVA Test for the Academic Position Variable Among Faculty Members.

		Sum of Squares	Df	Mean Square	F	Sig. (Tailed)	Sig. Level
Academic year	Between Groups	0.696	4	0.174	1.370	0.249	Not Significant
	Within Groups	14.090	111	0.127			
	Total	14.786	115				

\* Statistically significant at (p<0.05)

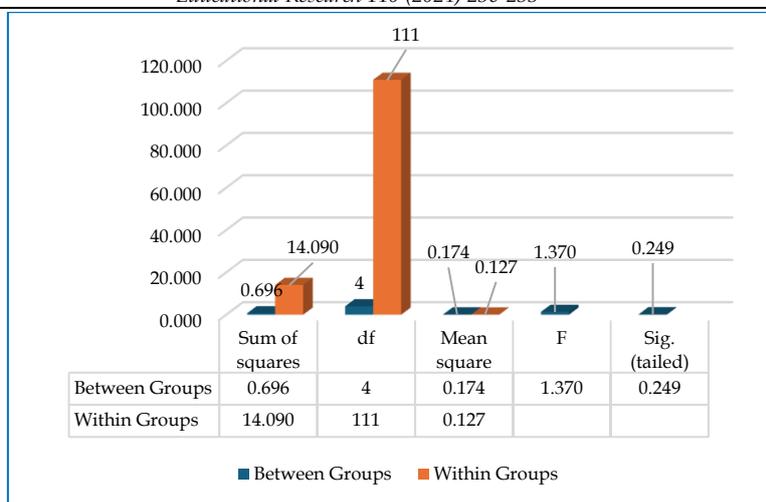


Figure 5: One-way ANOVA Test for Academic Position Variable Among Faculty Members.

An ANOVA was used to find the significance of the differences between faculty members' average knowledge and attitude to AI according to academic position variable, as seen in the Table 7 and Figure 5. The findings demonstrate there are no statistically significant differences in the views of faculty members depending on the academic status variable, as the probability value is 0.249, which is greater than the required statistical significance.

### Discussion

The findings of this research answered all three questions using empirical findings. The findings of current study are consistent with the discussion and conclusions of previous studies. Previously, scholars reported that AI use for teachers is necessary as it can help them to improve their learning performance (Tunjera & Chigona, 2023). The necessary expertise for the teachers is to ensure they have reliable working approach for integration of AI. The strategic advancements in teachers' working are required to develop a culture of positive working (Tedre et al., 2021). The strategic factor for development of teachers' attitude towards the appropriate learning is to deal with significant ideas and performance of teachers. Many teachers in universities have no knowledge to use AI properly for their academic purpose (Lee & Perret, 2022). It is necessary for the management to ensure the training for these teachers to improve their understanding for the use of AI. Similarly, the attitude of the teachers can be improved to use AI which is possible with their strategic approach to work on AI practices (Liu & Ren, 2022). The reliable working methodology to improve the understanding of teachers are to ensure they learn better and their performance is also better for the use of AI (Ouyang & Jiao, 2021).

AI is based on different language modules which can help teachers to perform smart practices for their learning (Baidoo-Anu & Ansah, 2023). The strategic development for the use of AI can help teachers to perform better and integrate a level of learning. The performance of students is also required to be improved over time which can help teachers to learn better and integrate AI in their working (Ahmad et al., 2022). AI also has

importance for researchers as they can improve their performance in better way. The integration of AI for teachers in their academic learning is smart approach to perform (Joshi et al., 2021). Meanwhile, teachers of different genders have different approaches for their academic performance. The stable working attitude helps the teachers to improve their performance which can foster their culture and innovation in the way of performance (Chen et al., 2022). The approaches for AI in learning can help the teachers to integrate better learning attitude which helps to advance their performance strategically. AI can help the teachers to improve their practices gradually which is a strategic way forward for advancing the learning performance (Perrotta & Selwyn, 2020). Furthermore, AI in research preparation also helps the teachers to consider it fairly in their working performance. Approaches to adopt AI in working can improve the performance of teachers which is critical in the advancements on their learning (Williamson & Eynon, 2020).

However, teachers are required to develop a positive attitude towards the use of AI (Ng et al., 2023). AI is overlapping the traditional teaching practices which is a way forward to advance their learning. Female and male teachers have different attitude to integrate AI in their learning (Guo et al., 2021). It is critical for them to strategically work on their practices and improve the use of AI to provide better teaching experience. Similarly, teachers are required to motivate students for their better learning which can be a significant factor for their reliable performance (Ayanwale et al., 2022). Strategies developed by teachers should be based on the use of AI as it is a way forward for their expertise in classroom. Female teachers are also required to improve their working experience which can help them to advance their learning strategies which are reliable for their better performance (Onesi-Ozigagun et al., 2024). Improvements in use of AI for male teachers is also critical as it helps them to understand it for modern day use. The use of AI in teaching is a significant factor which can improve the practices for them that are critical to advance their learning (Holmes et al., 2022). Thus, university administration is responsible to provide effective training to the teachers which are necessary to advance the performance of learning and critical improvements in it. Similarly, it is necessary for the teachers to improve their performance with AI which can help to advance the culture of learning (Cope, Kalantzis, & Searsmith, 2021). It will be helpful for better working on their practices to advance the knowledge of students with significant strategies developed for them using AI. The practices for the use of AI would improve the understanding of teachers' overtime which would be helpful for them to critically improve the learning performance (An et al., 2023). AI related strategies and practices should be developed to improve the knowledge of students in the classroom. It would also be useful for fair practices with AI which can help to advocate practices for better learning.

### Implications

The current study is pioneering to study the knowledge and attitude of faculty members for AI. The existing studies in body of knowledge have limited discussion on this aspect. The study has conducted significant findings in literature. To begin with, it reports that knowledge of the faculty for AI is high in Abu Dhabi University. It confirms that the faculty members in Abu Dhabi University are using knowledge for advancing the progress of students. The integration of AI in students is noted by the teachers which is significant improvement in learning behavior of the students. Furthermore, the study found that attitude of teachers in Abu Dhabi is also significant towards AI. The improved the body of knowledge that teachers in Abu Dhabi university are interested to use AI in their work which helps them to smartly manage the progress. The previous studies in knowledge have

less significant discussion by interpreting these relationships. Hence, the following research improved the body of knowledge with significant addition to the findings. The study also discusses the level of knowledge towards AI based on gender, academic positions and years of working. Therefore, the study is emerged as a significant work which advanced the body of literature regarding the use of AI.

The practical recommendations of the current study advocate the use of AI in the future studies. The research demonstrates that AI should be used effectively which can advance the body of knowledge and understanding of teachers. The use of AI also should be integrated into the faculty members routine working. The fair and ethical use of AI can assist the teachers to work smartly and use this technology for best teaching practices. These practices can significantly influence the body of knowledge which can foster the culture of AI working. Besides, the study demonstrates the use of AI for significance advancement in working which would help the teachers in presentation design and class tutorials. In this way, the practical working to improve AI is a significant addition to knowledge which foster a culture of signification addition towards the practices of teachers. Therefore, faculty members of the other universities are also motivated to improve their knowledge and attitude towards the use of AI which would have a lasting impact on the knowledge. Previously, the practices of teachers were different for performing different tasks, while the use of AI has improved their working approaches towards the smart working and advancing in AI approach development.

### **Future Directions**

The findings of current research are important to highlight the attitude and knowledge of faculty members towards the use of AI, but the findings have some limitations. Firstly, the findings of study can't be generalized as the data was collected from selective population only from one university. It will be a significant contribution to the knowledge if scholar collect data from diverse populations considering different faculty members. Another limitation of the study is its methodology, as ANOVA method was used in it. Many studies of social sciences use partial least square - structural equation modeling for significant contribution to the literature. Hence, the future studies are required to analyze data using structural equation model. It would be a noteworthy contribution to literature for analyzing the results and answering the questions.

### **Declarations**

#### *Consent Statement*

All participants of this study completed a consent form introduce to them online.

#### *Data Availability*

The data is available with the corresponding author upon request.

#### *Conflicting Interests*

The author declares no conflicting interest.

### Funding

This author received no fund, commercial, or not-for-profit sectors.

### References

- Adıgüzel, T., Kaya, M. H., & Cansu, F. K. (2023). Revolutionizing education with AI: Exploring the transformative potential of ChatGPT. *Contemporary Educational Technology, 15*(3), ep429. <http://hdl.handle.net/10679/9079>
- Ahmad, S. F., Alam, M. M., Rahmat, M. K., Mubarik, M. S., & Hyder, S. I. (2022). Academic and administrative role of artificial intelligence in education. *Sustainability, 14*(3), 1101. <https://doi.org/10.3390/su14031101>
- Alam, A. (2021). Should robots replace teachers? Mobilisation of AI and learning analytics in education. In *2021 International Conference on Advances in Computing, Communication, and Control (ICAC3)* (pp. 1-12). IEEE. <https://doi.org/10.1109/ICAC353642.2021.9697300>
- Alam, A., & Mohanty, A. (2022). Facial Analytics or Virtual Avatars: Competencies and Design Considerations for Student-Teacher Interaction in AI-Powered Online Education for Effective Classroom Engagement. In *International Conference on Communication, Networks and Computing* (pp. 252-265). Springer. [https://doi.org/10.1007/978-3-031-43145-6\\_21](https://doi.org/10.1007/978-3-031-43145-6_21)
- An, X., Chai, C. S., Li, Y., Zhou, Y., Shen, X., Zheng, C., & Chen, M. (2023). Modeling English teachers' behavioral intention to use artificial intelligence in middle schools. *Education and Information Technologies, 28*(5), 5187-5208. <https://doi.org/10.1007/s10639-022-11286-z>
- Ayanwale, M. A., Sanusi, I. T., Adelana, O. P., Aruleba, K. D., & Oyelere, S. S. (2022). Teachers' readiness and intention to teach artificial intelligence in schools. *Computers and Education: Artificial Intelligence, 3*, 100099. <https://doi.org/10.1016/j.caeai.2022.100099>
- Baidoo-Anu, D., & Ansah, L. O. (2023). Education in the era of generative artificial intelligence (AI): Understanding the potential benefits of ChatGPT in promoting teaching and learning. *Journal of AI, 7*(1), 52-62. <https://doi.org/10.61969/jai.1337500>
- Celik, I. (2023). Towards Intelligent-TPACK: An empirical study on teachers' professional knowledge to ethically integrate artificial intelligence (AI)-based tools into education. *Computers in Human Behavior, 138*, 107468. <https://doi.org/10.1016/j.chb.2022.107468>
- Celik, I., Dindar, M., Muukkonen, H., & Järvelä, S. (2022). The promises and challenges of artificial intelligence for teachers: A systematic review of research. *TechTrends, 66*(4), 616-630. <https://doi.org/10.1007/s11528-022-00715-y>
- Chan, C. K. Y. (2023). A comprehensive AI policy education framework for university teaching and learning. *International Journal of Educational Technology in Higher Education, 20*(1), 38. <https://doi.org/10.1186/s41239-023-00408-3>
- Chen, X., Zou, D., Xie, H., Cheng, G., & Liu, C. (2022). Two decades of artificial intelligence in education. *Educational Technology & Society, 25*(1), 28-47. <https://www.jstor.org/stable/48647028>
- Chiu, T. K. F., Moorhouse, B. L., Chai, C. S., & Ismailov, M. (2023). Teacher support and student motivation to learn with Artificial Intelligence (AI) based chatbot. *Interactive Learning Environments, 1-17*. <https://doi.org/10.1080/10494820.2023.2172044>

- Chounta, I.-A., Bardone, E., Raudsep, A., & Pedaste, M. (2022). Exploring teachers' perceptions of Artificial Intelligence as a tool to support their practice in Estonian K-12 education. *International Journal of Artificial Intelligence in Education*, 32(3), 725-755. <https://doi.org/10.1007/s40593-021-00243-5>
- Cope, B., Kalantzis, M., & Sears-Smith, D. (2021). Artificial intelligence for education: Knowledge and its assessment in AI-enabled learning ecologies. *Educational Philosophy and Theory*, 53(12), 1229-1245. <https://doi.org/10.1080/00131857.2020.1728732>
- Fitria, T. N. (2021). Artificial intelligence (AI) in education: Using AI tools for teaching and learning process. *Prosiding Seminar Nasional & Call for Paper STIE AAS*, 4(1), 134-147. <https://prosiding.stie-aas.ac.id/index.php/prosenas/article/view/106>
- Guo, J., Bai, L., Yu, Z., Zhao, Z., & Wan, B. (2021). An AI-application-oriented in-class teaching evaluation model by using statistical modeling and ensemble learning. *Sensors*, 21(1), 241. <https://doi.org/10.3390/s21010241>
- Holmes, W., Porayska-Pomsta, K., Holstein, K., Sutherland, E., Baker, T., Shum, S. B., Santos, O. C., Rodrigo, M. T., Cukurova, M., & Bittencourt, I. I. (2022). Ethics of AI in Education: Towards a Community-Wide Framework. *International Journal of Artificial Intelligence in Education*, 32, 504-526. <https://doi.org/10.1007/s40593-021-00239-1>
- Holmes, W., & Tuomi, I. (2022). State of the art and practice in AI in education. *European Journal of Education*, 57(4), 542-570. <https://doi.org/10.1111/ejed.12533>
- Joshi, S., Rambola, R. K., & Churi, P. (2021). Evaluating artificial intelligence in education for next generation. *Journal of Physics: Conference Series*, 1714(1), 012039. <https://doi.org/10.1088/1742-6596/1714/1/012039>
- Kim, J., Lee, H., & Cho, Y. H. (2022). Learning design to support student-AI collaboration: Perspectives of leading teachers for AI in education. *Education and Information Technologies*, 27(5), 6069-6104. <https://doi.org/10.1007/s10639-021-10831-6>
- Kim, J., Merrill, K., Xu, K., & Sellnow, D. D. (2020). My teacher is a machine: Understanding students' perceptions of AI teaching assistants in online education. *International Journal of Human-Computer Interaction*, 36(20), 1902-1911. <https://doi.org/10.1080/10447318.2020.1801227>
- Lameras, P., & Arnab, S. (2021). Power to the teachers: an exploratory review on artificial intelligence in education. *Information*, 13(1), 14. <https://doi.org/10.3390/info13010014>
- Lee, I., & Perret, B. (2022). Preparing high school teachers to integrate AI methods into STEM classrooms. *Proceedings of the AAAI Conference on Artificial Intelligence*, 36(11), 12783-12791. <https://doi.org/10.1609/aaai.v36i11.21557>
- Limna, P., Jakwatanatham, S., Siripipattanakul, S., Kaewpuang, P., & Sriboonruang, P. (2022). A Review of Artificial Intelligence (AI) in Education during the Digital Era. *Advance Knowledge for Executives*, 1(1), 1-9. <https://ssrn.com/abstract=4160798>
- Liu, Y., & Ren, L. (2022). The influence of artificial intelligence technology on teaching under the threshold of "Internet+": based on the application example of an English education platform. *Wireless Communications and Mobile Computing*, 2022, 1-9. <https://doi.org/10.1155/2022/5728569>
- Mhlanga, D. (2023). Open AI in education, the responsible and ethical use of ChatGPT towards lifelong learning. In *FinTech and Artificial Intelligence for Sustainable Development: The Role of Smart Technologies in Achieving Development Goals* (pp. 387-409). Springer. [https://doi.org/10.1007/978-3-031-37776-1\\_17](https://doi.org/10.1007/978-3-031-37776-1_17)
- Misirli, O., & Ergulec, F. (2021). Emergency remote teaching during the COVID-19

- pandemic: Parents experiences and perspectives. *Education and Information Technologies*, 26(6), 6699-6718. <https://doi.org/10.1007/s10639-021-10520-4>
- Nazaretsky, T., Ariely, M., Cukurova, M., & Alexandron, G. (2022). Teachers' trust in AI-powered educational technology and a professional development program to improve it. *British Journal of Educational Technology*, 53(4), 914-931. <https://doi.org/10.1111/bjet.13232>
- Ng, D. T. K., Su, J., Leung, J. K. L., & Chu, S. K. W. (2023). Artificial intelligence (AI) literacy education in secondary schools: a review. *Interactive Learning Environments*, 1-21. <https://doi.org/10.1080/10494820.2023.2255228>
- Onesi-Ozigagun, O., Ololade, Y. J., Eyo-Udo, N. L., & Ogundipe, D. O. (2024). Revolutionizing education through AI: a comprehensive review of enhancing learning experiences. *International Journal of Applied Research in Social Sciences*, 6(4), 589-607. <https://doi.org/10.51594/ijarss.v6i4.1011>
- Ouyang, F., & Jiao, P. (2021). Artificial intelligence in education: The three paradigms. *Computers and Education: Artificial Intelligence*, 2, 100020. <https://doi.org/10.1016/j.caeai.2021.100020>
- Perrotta, C., & Selwyn, N. (2020). Deep learning goes to school: Toward a relational understanding of AI in education. *Learning, Media and Technology*, 45(3), 251-269. <https://doi.org/10.1080/17439884.2020.1686017>
- Salas-Pilco, S. Z., Xiao, K., & Hu, X. (2022). Artificial intelligence and learning analytics in teacher education: A systematic review. *Education Sciences*, 12(8), 569. <https://doi.org/10.3390/educsci12080569>
- Schiff, D. (2022). Education for AI, not AI for education: The role of education and ethics in national AI policy strategies. *International Journal of Artificial Intelligence in Education*, 32(3), 527-563. <https://doi.org/10.1007/s40593-021-00270-2>
- Tedre, M., Toivonen, T., Kahila, J., Vartiainen, H., Valtonen, T., Jormanainen, I., & Pears, A. (2021). Teaching machine learning in K-12 classroom: Pedagogical and technological trajectories for artificial intelligence education. *IEEE Access*, 9, 110558-110572. <https://doi.org/10.1109/ACCESS.2021.3097962>
- Tunjera, N., & Chigona, A. (2023). Investigating Effective Ways to Use Artificial Intelligence in Teacher Education. *European Conference on E-Learning*, 22(1), 331-340. <https://doi.org/10.34190/ecel.22.1.1625>
- Whalen, J., & Mouza, C. (2023). ChatGPT: Challenges, opportunities, and implications for teacher education. *Contemporary Issues in Technology and Teacher Education*, 23(1), 1-23. <https://citejournal.org/wp-content/uploads/2023/02/v23i1editorial1.pdf>
- Williamson, B., & Eynon, R. (2020). Historical threads, missing links, and future directions in AI in education. *Learning, Media and Technology*, 45(3), 223-235. <https://doi.org/10.1080/17439884.2020.1798995>
- Wu, Y. (2023). Integrating generative AI in education: how ChatGPT brings challenges for future learning and teaching. *Journal of Advanced Research in Education*, 2(4), 6-10. <https://doi.org/10.56397/JARE.2023.07.02>
- Yau, K. W., Chai, C. S., Chiu, T. K., Meng, H., King, I., & Yam, Y. (2023). A phenomenographic approach on teacher conceptions of teaching Artificial Intelligence (AI) in K-12 schools. *Education and Information Technologies*, 28(1), 1041-1064. <https://doi.org/10.1007/s10639-022-11161-x>
- Zhai, X., Chu, X., Chai, C. S., Jong, M. S. Y., Istenic, A., Spector, M., Liu, J.-B., Yuan, J., & Li, Y. (2021). A Review of Artificial Intelligence (AI) in Education from 2010 to 2020. *Complexity*, 2021, 1-18. <https://doi.org/10.1155/2021/8812542>