Readiness for the Use of Artificial Intelligence among Secondary School Teachers in the Tuaran District, Sabah Based on Length of Service: A Pilot Study

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ABSTRACT

This pilot study is conducted to provide an initial overview of the readiness for the use of Artificial Intelligence (AI) among secondary school teachers in Tuaran, Sabah. This study focuses more on a quantitative approach in the form of a survey. In this study, the instrument by Fred D. Davis (1989) has been taken and adapted to the needs of this study. Meanwhile, this study involved only 50 respondents among secondary school teachers in the Tuaran district of Sabah, who were selected through simple random sampling. To analyze the obtained data, the researcher used descriptive statistical analysis with the Statistical Package for the Social Sciences (SPSS) software. The analysis results found that there is no significant difference in the use of AI among secondary school teachers in the Tuaran district of Sabah, with a recorded value of [F (df=3, 46) = 2.33] at a significance level of 0.09. The implication is that the level of teachers' knowledge regarding AI needs to be further strengthened through the organization of in-service training programs for all teachers so that they possess a high level of knowledge and readiness in applying AI as outlined in the Digital Education Policy.

Keywords: Artificial Intelligence (AI), Secondary School Teachers, Quantitative, Tuaran and Sabah

INTRODUCTION

The 4.0 industrial revolution happening worldwide has led to rapid advancements in digital technologies such as Artificial Intelligence (AI). The presence of AI has had a significant impact, especially in the education sector. Following the development of AI in education, researchers have begun to explore the use of AI in the education system because the education system is a crucial field for the country in producing successful and useful generations. However, it cannot be denied that the presence of AI in the education system has actually brought about a change, especially in terms of teachers' teaching and learning methods. In line with that statement, Lee Bih Ni (2025) also mentioned in her statement that the advancements in AI have changed the way today's students think and learn.

In addition, the presence of AI also brings changes to teachers, where AI supports the teaching process, ensures the teaching process is more effective, and allows teachers to adjust the methods used to the learning needs of the students. Therefore, to ensure that teachers can benefit from the sophistication of AI in the teaching process, it requires teachers who are not only proficient in using AI but also capable of understanding the suitability of AI in teaching, applying it, and being able to reflect on the AI used in the teaching process in terms of its effectiveness. To ensure that AI can be fully applied in education, the Ministry of Education (MOE) Malaysia has made AI one of the key pillars in the 2027 curriculum, with its implementation starting from primary schools as mentioned by Abdul Nasir Abd Ghafar (2024). The actions taken by the MOE demonstrate its seriousness toward AI, which should be noted by teachers not only at the primary school level but also by secondary school teachers.

Therefore, the implementation of a pilot study in the Tuaran district is important to assess the readiness of teachers in applying AI, considering that no study has been conducted in that district in Sabah. The initial findings obtained are important to provide an early overview before the actual study is conducted. Moreover,

the implementation of this pilot study can also assist stakeholders such as schools and the Tuaran District Education Office in formulating appropriate policies and programs for teachers so that teachers in the area can be literate and proficient in using AI and subsequently leverage AI usage to enhance the quality of teaching and learning.

Problem Statement

The Digital Education Policy was first introduced by MOE in 2023 (Fahmi A Rosli, 2023). The introduction of that policy is in line with the development of AI that occurred in 2022. The policy was formulated to enable teachers to conduct lessons more creatively and effectively by utilizing AI. To further empower the use of AI in teaching, AI-4-Educators was introduced by the MOE Malaysia in collaboration with the Ministry of Human Resources through HRD Corp to provide training to teachers, targeting 400,000 teachers related to the use of AI (Hasimi Muhamad, 2025).

Although the MOE has made various efforts to empower the use of AI in teaching, there are still issues faced by teachers in integrating AI. This is because Moorhouse (2024) found that there are differences in teachers' readiness levels in applying AI, particularly in the implementation of teaching and learning. The difference in teachers' readiness occurs due to the level of acceptance teachers have toward new things. This is in line with the findings of the study by Aminah Jekri and Crispina Gregory K Han (2024), where experienced teachers showed a low level of knowledge in using AI compared to novice teachers who demonstrated a high level of knowledge in integrating AI into teaching and learning. However, the study conducted by Aminah Jekri and Crispina Gregory K Han (2024) was only carried out in the Penampang district, Sabah.

Moreover, the issue of insufficient professional training among teachers, particularly in the use of AI, is a driving factor behind the difficulty teachers face in integrating AI (Noriani Hamzah and Hafizhah Zulkifli, 2025). This is because professional training is important for teachers to enable them to learn new skills, especially AI usage skills, which can then be utilized in the teaching and learning process (Balqis Abdul Wahid and Mohd Izham Mohd Hamzah, 2023). However, the study conducted by Noriani Hamzah and Hafizhah Zulkifli (2025) was among teachers who teach Islamic education in primary schools located in the state of Sabah, whereas the implementation of a study involving secondary school teachers in the district of Tuaran has not yet been carried out. Therefore, these issues necessitate the researcher to conduct a study in the Tuaran district to determine the teachers' proficiency in integrating AI into teaching based on their years of service.

Study Objectives

This study was conducted to achieve the following objectives:

1. To identify the differences in the mean scores of readiness for the use of Artificial Intelligence (AI) among secondary school teachers in the Tuaran district, Sabah, based on their length of service.

METHODOLOGY

Study Approach and Design

The researcher used a quantitative approach in the form of a survey to conduct a pilot study on AI among teachers in the Tuaran district, Sabah. However, to obtain the data for this study, a questionnaire was chosen as the research instrument. The pilot study conducted is actually in the form of a survey aimed at providing an initial overview of AI usage among teachers according to their years of service, before a real study is conducted in the area.

Population and Sample of the Study

For this pilot study, it only involves 50 secondary school teachers from schools located in Tuaran as respondents. The selection of respondents among secondary school teachers was carried out using a simple random sampling method.

Questionaire Instrument

The questionnaire used in the study consists of two parts, namely Part A and Part B. Section A is related to demographics, specifically the length of service. Whereas Section B is related to AI items. For the AI items in the study questionnaire, they were taken and adapted from the instrument developed by Fred D. Davis (2010), namely the Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology questionnaire, which consists of a total of 28 items. The assessment applied in this study uses a 5-point Likert scale consisting of Likert scale 1 (Strongly Disagree), Likert scale 2 (Disagree), Likert scale 3 (Neutral), Likert scale 4 (Agree), and Likert scale 5 (Strongly Agree).

Data Analysis Process

The researcher conducted the analysis of raw data using the Statistical Package for the Social Science (SPSS) software. The software used was version 29.0. The analysis performed on the raw data was a one-way ANOVA analysis aimed at examining the mean AI scores among teachers in the Tuaran district, Sabah, based on their length of service.

Instrument Reliability

The instrument to be used in the actual study needs to be tested for reliability. The purpose of this process is to ensure that the AI items used have high validity and stability (Zurinawati Hamzah and Rosnah Ishak, 2024). Table 1, displayed below is related to the reliability findings of the AI items.

Table 1: Instrument Reliability Analysis

Variable	Number of Item	Alpha Value
Artificial Intelligence	28	0.84
Total	**28**	**0.84**

RESEARCH FINDINGS

Table 2 below shows the feedback obtained from the study respondents regarding the readiness to use AI among secondary school teachers in the Tuaran district, Sabah, based on their years of service. The analysis conducted on AI among teachers in Tuaran, Sabah shows varying mean values. For example, teachers with 1-5 years of service in AI integration showed a high mean value of 3.95. Meanwhile, the second highest mean value is among teachers with more than 20 years of service, recording a mean of 3.93. Then, followed by teachers with 6 to 10 years of service, recording a mean of 3.85, and the lowest mean value was among teachers with 11 to 20 years of service, recording a mean of 3.62.

Table 2: Analysis of Mean Score Differences of Secondary School AI Teachers in Tuaran District Based on Length of Service

Teaching Experience	N	Mean	Standard Deviation
1-5 Years	6	3.95	0.40
6-10 Years	4	3.85	0.27
11-20 Years	22	3.62	0.46
More than 20 Years	18	3.93	0.36
Total	**50**	**3.79**	**0.43**

Table 3 below shows the findings of the one-way ANOVA inferential analysis on the use of AI among secondary school teachers in the Tuaran district, Sabah, based on years of service. Based on the analysis conducted, it was found that the value [F (df=3, 46) = 2.33 with a significance level of 0.09, which exceeds the significance level (P>0.05). Therefore, the null hypothesis stating that there is no difference in AI mean scores among secondary school teachers in the Tuaran district, Sabah according to years of service is accepted. The ANOVA analysis that was conducted showed that there is no significant difference in the use of AI among secondary school teachers located in the Tuaran district based on their length of service.

Table 3: One-Way ANOVA Analysis of AI Among Secondary School Teachers in the Tuaran District

	Sum of Squares	**df**	**Mean Square**	**F**	**Sig**
Between Groups	1.17	3	0.391	2.33	0.09
Within Groups	7.72	46	0.168		
Total	**8.90**	**49**			

DISCUSSION

The study findings have shown that there is no difference in the mean scores of AI usage readiness among high school teachers in the Tuaran district, Sabah based on their years of service. The findings of this study are in line with the results obtained from previous studies. For example, the findings of the study by Lawal et al., (2025) found that the length of service of teachers does not make a significant difference in their use of AI in teaching and learning. Moreover, the researchers emphasize that the implementation of professional development programs should be conducted for all teachers regardless of their length of service in the school.

However, it cannot be denied that there are also findings from previous studies that contradict the findings of this study. For example, the study by Sunday et al., (2025) proves that there are differences in AI usage among teachers based on their years of service. The researcher's study shows that teachers with more than 11 years of teaching experience have a higher level of AI compared to teachers with other lengths of service. For this study, novice teachers are new teachers with less than five years of service, while experienced teachers are those with more than six years of service. The findings of the study by Sunday et al., (2025) are supported by the findings of the study by Yue et al., (2024) where experienced teachers have a higher confidence in using AI compared to novice teachers.

In contrast, the study conducted by Aminah Jekri and Crispina Gregory K Han (2024) found that novice teachers with a service period of 1 to 5 years have a higher level of AI usage because most new teachers have a strong desire to learn new things, including the use of AI. Even Murniyetti et al., (2023) found that teachers with less than 5 years of service have a much higher level of AI competence because teachers in that service period are more open to accepting changes in the education system, especially the presence of AI in education.

Study Limitations

The study conducted has several limitations that deserve attention. First is the scope of the study, where this research only focuses on one district in Sabah. Therefore, the findings from this study cannot be equated with the teacher population in other districts because there are significant differences, especially in terms of the level of AI usage, school infrastructure facilities, and school culture. Not only that, but this study also focuses on only one type of demographic, namely the length of service, without evaluating other demographics such as age and gender. Therefore, further studies need to be conducted on a larger scale, covering all districts in the state of Sabah, and using a mixed-methods research design (quantitative and qualitative) to gain a deeper understanding of the actual needs of teachers in order to prepare them for the application of AI-assisted teaching.

CONCLUSION

Overall, the use of AI among teachers in the Tuaran district does not differ in terms of length of service. This shows that teachers have an open attitude toward embracing new changes, particularly AI, in teaching and learning. The findings of this study align with the Technology Acceptance Model (TAM), which emphasizes teachers' readiness to use technology. Although this study was conducted only in the Tuaran district, a follow-up study involving all secondary schools in the Sabah district needs to be carried out to assess the level of AI usage among secondary school teachers in Sabah as a whole. Through the implementation of the study for all secondary schools, the findings can be utilized by stakeholders particularly the MOE, to formulate policies and programs related to the use of AI.

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