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FACTORS AFFECTING THE USE OF AI APPLICATIONS AMONG EDUCATORS IN SCHOOLS

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Abstract: *Artificial intelligence is not a newly created technology, but its use is increasing after the covid-19 outbreak where there have been quite drastic developments in ICT technology and digitalization. Various AI-based platforms and applications are starting to emerge making it a necessity nowadays. The use of AI applications is also a good catalyst for the development of the education sector in Malaysia. Many studies have been conducted to identify the use of AI applications among educators. However, most of the studies involve higher education. Therefore, this study was conducted to identify the knowledge of educators related to AI applications and also the factors that influence educators in the use of AI applications in the teaching and learning process. The survey respondents consisted of educators involved as data, ICT and digitalization officers in schools around Segamat. The methodology of the study is a quantitative one that uses questionnaires and is analyzed descriptively. The findings show that educators have knowledge about AI applications, but the level of knowledge is at a moderate level. While the factors identified also showed Self-efficacy, Readiness and Literacy among educators were also at a moderate level. Efforts to disseminate the use of AI applications among educators should be implemented. In conclusion, educators need to be polished with the skills to master AI technology not only to facilitate the teaching and learning process, but also in preparation for the use of AI applications in schools in 2027.*

Keywords: *Artificial intelligence, factor influence, educators*

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Introduction

Artificial intelligence (AI) can be described as the simulation of human intelligence in a machine created to think and act like a human. It encompasses a wide range of technologies and techniques that allow computers to perform tasks that would normally require human action and thought. Among the tasks that can be implemented with artificial intelligence technology is learning, problem solving, perception, knowledge involves calculation and even decision making. The use of AI tools is also not a foreign matter for people around the world including Malaysia.

The Malaysian government has recognised the importance of AI in education, as enshrined in the Malaysian Education Action Plan 2013-2025, which emphasises the use of ICT in education. With the advent of AI technology, the national education system can be improved and enhanced to produce students who are willing to face the challenges and opportunities of the 21st century. The Ministry of Education has also announced to implement the use of artificial intelligence technology in the PdP session starting in 2027 involving primary school students to empower people's awareness of AI technology. The intention of the government and ministries has begun to show seriousness in the use of AI technology in the education sector, but there are still educators who are not yet aware of the importance of AI technology in the field of Education. In addition, there are also educators who find it difficult to change their teaching and learning methods and materials because they do not want to follow the current and existing technology.

AI technology in education certainly provides many benefits either among students or educators themselves. AI can analyze student data and in turn provide personalized learning paths tailored to the strengths, weaknesses, and learning styles of the students themselves. This allows students to learn more effectively which in turn leads to improved learning outcomes for a subject. Students can also increase knowledge through the use of AI technology when this AI application can provide suggestions, answer questions, and allow students to interact with technology (Amdan, M. A. B et al, 2024). However, there are also concerns among educators regarding the use of AI applications that also have a negative impact, namely high dependency among students and the role of teachers who are getting less attention from students (Haluza D. and Jungwirth D, 2023).

Problem Statement

The goal to increase the use and mastery of AI technology in Malaysia, especially in the field of education, is indeed the main agenda of the government with the existence of the National Artificial Intelligence roadmap 2021-2025 and the Digital Education Policy. People are also encouraged by AI technology with awareness programs such as AI for the people. Various studies have been carried out covering the use of AI applications at the University and higher education levels including TVET institutions. However, studies among educators in schools are still at a low level while they are the main driving force for the implementation of AI technology in schools. Therefore, a scientific study needs to be carried out to identify the perception of educators in schools regarding AI applications and identify factors that influence educators in the use of AI applications in the field of Education.

Research Objectives

This study aims to identify the factors that influence educators in schools regarding the use of AI applications. The objectives of the study are :

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a) identify exploratory knowledge of AI applications among educators in schools.
b) identify factors that influence educators to use AI applications among educators in schools

Method & Material

The use of AI technology can make it easier for educators to plan the teaching and learning process better, in turn can provide teaching aids more interesting and effective. In addition, the AI application also helps educators in providing ideas related to activities inside and outside the classroom that are appropriate to the subject being taught. (Sharifuddin, N.S and Hashim, H, 2024). The use of relatively new AI technology among educators needs to be accompanied by appropriate training, as educators are aware of the importance of AI applications in education and educators can prepare for the implementation of AI in schools by 2027. (Bujang et al, 2020). Studies related to the use of AI applications at the higher education level in Malaysia have been carried out quite a lot compared to educators in schools in Malaysia. Table 1 shows previous studies that have been carried out related to the use of AI applications, especially in the field of Education.

Table 1: Literature review about AI Tools studies.

Title	Scope / respondents	Author
Perceptions of and Behavioural Intentions towards Learning Artificial Intelligence in Primary School Students	Students	(Chai C.S et al, 2021)
Drivers of Artificial Intelligence Usage in Teaching Among Academicians in Higher Education Institutions	Academician in Higher Institutions	(Osman, Z. et al, 2023)
Students' Perception Towards The Usage of Artificial Intelligence In Tertiary Education	Students in Higher Institutions	(Thivyamalar, W. et al, 2023)
Investigating AI-based academic support acceptance and its impact on students' performance in Malaysian and Pakistani higher education institutions	Students in Higher Institutions	(Dahri, N.A et al, 2023)
Exploring the factors affecting the adoption AI techniques in higher education: insights from teachers' perspectives on ChatGPT	Teachers /educators	(Habiba Al-Mughairi and Preeti Bhaskar, 2023)

The design of the study used is a descriptive study using a quantitative approach. While the instrument used is a questionnaire item adapted from previous studies conducted Perceptions of and Behavioural Intentions towards learning Artificial Intelligence in Primary School Students (Chai C.S et al, 2021). The questionnaire used was to identify the exploratory knowledge of AI applications among educators and identify factors that influence educators in the use of AI applications.

The sections contained in the questionnaire are part a (demographics of respondents), Part B which consists of factors that influence educators to use AI applications for educational purposes. The survey respondents consisted of 80 educators involved in the implementation of ICT and digitalization in schools in Segamat, Johor. Questionnaires using a 5-point Likert scale were distributed online to respondents. The data obtained were analysed using IBM SPSS Statistics version 23.

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Findings

Respondent's profile

The respondents of this study consisted of educators involved in the dissemination and use of ICT and digitalization in schools around Segamat. Table 2 shows the demographic information of respondents.

Table 2: Respondent's profile

Gender	Quantity	Percentage
Male	29	36.25 %
Female	51	63.75 %

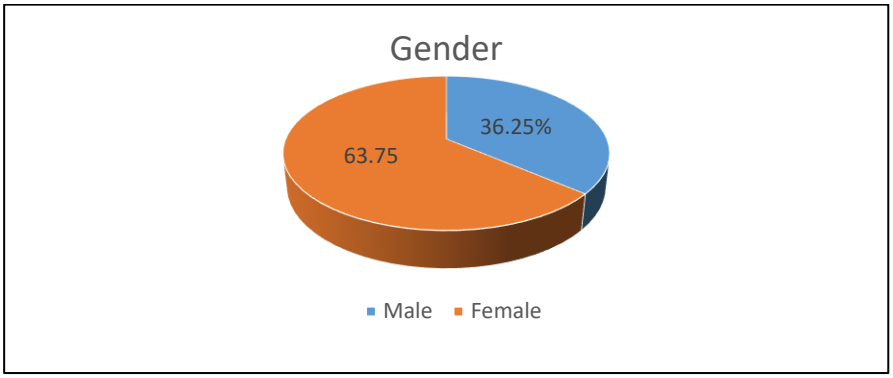

Figure 1 : Gender for respondents

Based on Table 2 and Figure 1, 63.75% of the respondents were female and 36.25% male were invloved in this study.

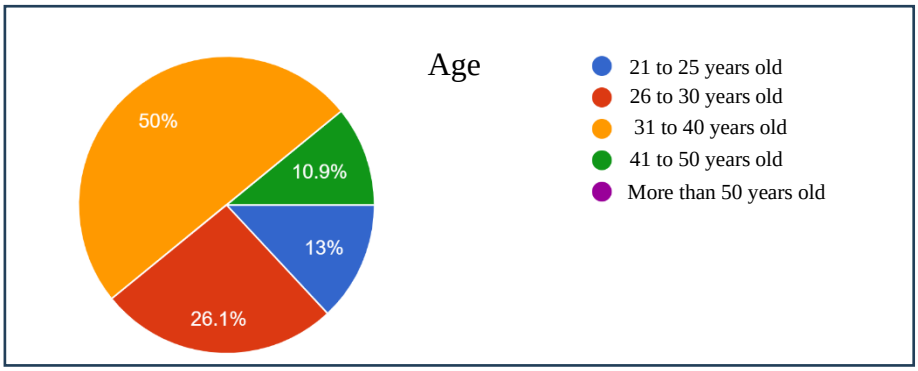

Figure 2: Age of respondents.

Figure 2 shows the age of the respondents whereby 50% of the respondents are 31 to 40 years old, then 26.1% of the respondents are 26 to 30 years old, 10.9% of the respondents are 41 to 50 years old and there were 13% of the respondents were more than 50 years old. This data shows that most of the respondents were at average age that they still can learn new technology such as AI tools.

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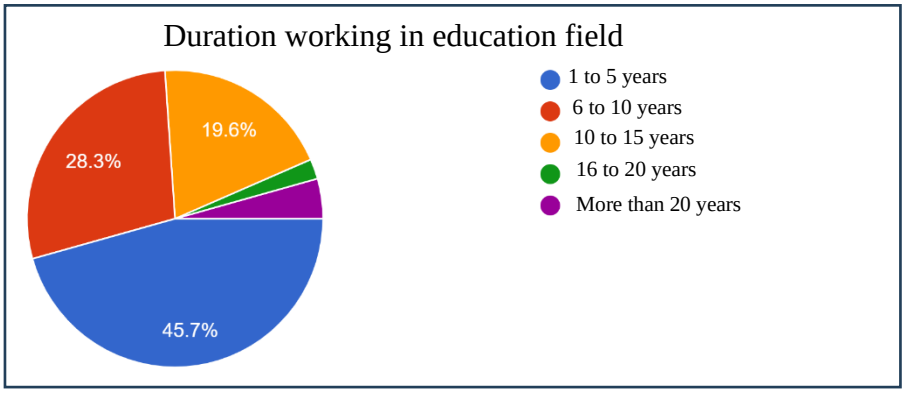

Figure 3: Duration working in education field

Based on Figure 3, it was found that most of the respondents had served in the education sector for a short period of time whereby 45.7% of the respondents can be described as junior. Then 28.3% of the respondents were working for 6 to 10 years, 19.6% of them were working for 10 to 15 years and the other respondents were working in education field for more than 16 years.

Factor influence educators to use AI applications for teaching and learning purposes.

There were five scopes of factor that being chosen in this study such as Self-efficacy, Readiness, and Literacy. All the data gathered were based on the 5-scale Likert scale.

Self-efficacy

Table 3: Self-efficacy among educators

Item	Details	Mean
Q1	I am confident that I can understand how to implement AI technology in the classroom	3.01
Q2	I am confident that I will succeed in AI technology.	3.42
Q3	I am confident that I can learn the basic concepts of AI technology.	3.90
Q4	I am confident that I can implement the learning and teaching process well with the help of AI technology.	4.01

Table 3 shows the data gathered for Self-efficacy components. The highest mean belongs to the confident level for respondents that they can implement AI application in their teaching and learning process.

Readiness

Table 4: Readiness among educators

Item	Details	Mean
Q1	I believe it is much easier to use products and services that use AI technology.	3.75
Q2	I am sure that AI technology will follow the instructions I give.	3.51
Q3	I am convinced that AI technologies facilitate the implementation of daily work processes.	3.45
Q4	I use the latest AI technology.	3.50

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Q5	I am confident that AI technology allows me to customize things to meet my own needs.	3.91

Table 4 shows the data gathered for Readiness components. The highest mean belongs to the confident level for respondents that AI technology allows them to customize things to meet their own needs.

Literacy

Table 5: Literacy about AI application usage among educators

Item	Details	Mean
Q1	I am confident in using AI technology-assisted voice recognition software to find information.	3.72
Q2	I am convinced that AI technology can be used to recognize images.	3.30
Q3	I can confidently use AI technology translation tools online.	4.01
Q4	I can confidently interact with AI technology assistants through speech recognition	3.51

Table 5 shows the data gathered for Literacy components. The highest mean belongs to the confident level for respondents to use AI technology translation tools online.

Discussion

Through this study, it was found that educators in schools around Segamat are aware of the existence of AI applications and the level of use of these educators is at a moderate level and can be improved with the implementation of several initiatives. Among the initiatives that can be implemented include exposure to the wider use of AI applications.

As for the Readiness component, most of the respondents were also at a moderate level where most of them already had experience in the use of AI applications for teaching and learning purposes. In addition, the Self-efficiency component was also found to be at a moderate level where most respondents were very confident in the level of accuracy and functionality of AI applications in helping to streamline the teaching and learning process.

Conclusion

In conclusion, through this study, the knowledge of educators in schools around Segamat is very supportive of the use of AI applications in the field of education, especially in facilitating and launching the teaching and learning process in schools. Through the study also, the factors of self-efficiency, readiness and literacy can be identified among the educators. To further increase the level of use of AI applications among educators, training and best practice-based programs should be implemented to provide guidance to educators and prepare them by 2027.

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