The Integration of Artificial Intelligence in Pantun (Malay Quatrain): A Revolution in Creative Teaching and Learning

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ABSTRACT

The integration of artificial intelligence (AI) into the teaching and learning of *pantun* (Malay quatrain) represents a new revolution in contemporary education, fostering a more creative and innovative approach to learning. This study aims to explore the potential of AI in enhancing the teaching and learning process among students. Generally, with the integration of AI, the analysis of pantun works can be researched more comprehensively, including a deeper examination of rhyme schemes, values, and moral lessons embedded within them. AI assists students to discover the implicit meaning in pantun works more clearly besides offering them an opportunity to create new pantun easily. This study was carried out by making a survey of the previous studies to examine the extent to which AI has the potential to create engaging teaching and learning processes, particularly in the context of *pantun* education. Meanwhile, to reinforce the findings from previous studies, an interview session was conducted with six expert informants in the field of literature education. The session employed the Triple-E framework developed by Liz Kolb (2017) as the interview instrument. The analysis of the interview findings aimed to assess the potential usability of AI through three components: student engagement, enhancement of learning goals, and the development of *pantun* learning objectives. The potential usability of AI was assessed using the same framework with eleven students, consisting of Form Six students enrolled in the Malay Literature course. The study findings revealed that the integration of AI in the teaching of *pantun* could enhance student engagement, particularly in terms of motivation and active participation. The expected findings also indicated that AI not only facilitates a new revolution in the approach to learning *pantun*, but also strengthens the educational environment by fostering greater creativity in the current era of technology-driven education.

Keywords: Artificial intelligence. Pantun (Malay quatrain), Creative Teaching, Triple-E framework.

INTRODUCTION

Pantun is a form of literary work categorized under non-narrative folk literature. Traditionally, pantun was orally performed by the early Malay community. Its creation reflects a high level of ingenuity, embodying the depth of Malay intellectual thought and contributing to the formation of their archetypal identity. According to Eizah et al. (2023), *pantun* has the ability to depict the early Malay community since its encompasses the entirety of human life and existence. Indeed, the pantun is rich in values and history, which remain highly relevant for many individuals, particularly students. Traditionally, the teaching of pantun was used to be conducted in a conventional manner, using memorization and mnemonic methods. However, teaching *pantun* in more creative ways has begun to expand, driven by the rapid advancement of artificial intelligence (AI) technology. Through AI, the learning of pantun can adopt a new approach by integrating automatic generation tools to craft pantun in a creative and engaging manner. Additionally, the integration of AI not only plays a role in generating pantun but also encourages student creativity in discovering new methods to learn pantun. The use of artificial intelligence as a modern technological component in the study of pantun will undoubtedly act as a catalyst for developing, expanding, and preserving pantun as a significant field of knowledge that is essential for the younger generation today.

REVIEW OF PAST STUDIES

Research on artificial intelligence (AI) has been actively carried out by many scholars, both locally internationally. This trend highlights the development of structures and transformations in the teaching of

literature within our country. In the context of teaching methods, the instruction of literature, particularly pantun, has traditionally focused on conventional approaches such as rote memorization and literal comprehension.

The recent work of Ahmad Fikri and Zamri (2024) highlights the issue of the lack of aesthetic teaching approaches to pantun among primary school teachers. Their quantitative study revealed the need to develop innovative methods for teaching pantun. In their writing, they argue that pantun teaching methods should be revitalized by introducing approaches that are more relevant to the needs of students of todays. The integration of technology, such as AI, serves as one initiative to transform the learning and teaching of pantun into a more creative and engaging experience.

Student-friendly teaching methods that incorporate technology, such as AI, should be brought to the fore to create a positive impact on the learning process of *pantun*. This perspective aligns with an article by Eizah et al. (2023), which highlights the use of AI as a teaching aid to enhance creativity and simplify the creation of literary works like *pantun*. Their qualitative study aimed to identify the effects of using ChatGPT in the creation of Malay pantun.

Another study by Ariffin and Ain (2023) specifically examines how AI has the potential to serve as a tool for enhancing and supporting creativity in literature. Their qualitative research found that creativity-support tools like AI could effectively facilitate the creative process in literature. This is evident in its ability to assist authors in generating new ideas, thereby enabling the development of more compelling literary works.

The study by Gligorea et al. (2023) emphasize the general use of digital tools, including AI, in assisting teachers to plan and design teaching modules that better meet students' needs. This systematic literature review revealed that AI plays a crucial role in optimizing learning processes, enhancing student engagement, and improving academic performance. However, the use of AI as a method for teaching pantun remains scarce and underexplored. Despite that, developments in AI research related to the teaching and learning of poetry have started to garner some attention. For example, recent studies included the use of AI as a teaching tool for poetry education in China (Zhu et al., 2023) and the integration of digital learning and AI (Ifwat Amzar & Mohamad Judi, 2024). In addition, the recent research by Arif et al. (2024) offers a comprehensive bibliometric analysis, revealing that studies on the use of AI as a learning aid have gradually increased across Asian countries. AI has been adopted as an intelligent personal assistant for language learners.

Based on the overviews of several studies discussed beforehand, it is concluded that there remain significant gaps in research concerning AI as a revolutionary tool in the teaching and learning of *pantun* (Malay poetic forms). Nevertheless, its development is gradually gaining traction in scholarly literature. However, the context of teaching and learning in the field of literature has yet to receive adequate attention from most scholars. In fact, AI holds great potential as a value-added component in the instruction of literature, particularly *pantun*. Many studies emphasize the importance of AI as an auxiliary tool capable of enhancing creativity in learning besides allowing educators to design exercises that are more relevant to the needs of contemporary students. Furthermore, not only AI bolsters the learning process but also creates a more flexible framework for language and literature education, aligning with current governmental aspirations in the era of digital education and development.

Artificial Intelligence in Literature

Artificial Intelligence (AI) is making a significant transformation across various fields, including literature. Fundamentally, the integration of AI in literature is rapidly evolving, bringing about notable changes to the creation of new literary works. This phenomenon is evident in the study by Gligorea et al. (2023), which explains how advancements in technology, such as AI, can assist writers in generating ideas, constructing narratives, and engaging in collaborative writing. However, the expansionary role of AI in literature also poses challenges, particularly regarding ethical issues such as copyright, creativity, and potential biases in AI-generated content. These concerns include the risk of producing narratives that excessively adhere to prevailing trends within the datasets, as discussed in the work of Nugraha and Sufanti (2023).

The development of Artificial Intelligence (AI) in *Pantun* has indeed begun to progress gradually, bringing a

new dimension into the literary realm, where this technology not only increases the understanding of the structural elements of *pantun* works but also serves as a creative tool for generating *pantun*. This process is executed through the use of algorithms (Joseph, 2023) integrated into AI models, enabling AI to replicate intricate linguistic patterns and the structure of traditional poetry. Thus, AI is capable of producing *pantun* that closely mirrors human-created works. Furthermore, the *pantun* generated by AI is claimed to retain figurative elements and aesthetic qualities akin to the original criteria of traditional literature. While AI-generated *pantun* may be difficult to distinguish from human-created *pantun*, ongoing debates persist regarding the authenticity and true creativity of such works, given that AI merely reorganizes learned data rather than creating based on emotional or cultural experiences, as humans do. This is depicted in Figure 1, which proves that AI is trained on the characteristics of authentic *pantun*. Furthermore, the application of AI in *pantun* generation is depicted in Figure 2, clearly showcasing how AI can construct *pantun* with precise features that meet the aesthetic criteria of Malay *pantun*. As AI is trained on previous literary works, questions arise concerning the copyright of original works and the ownership of machine-generated results. This necessitates the establishment of clearer guidelines to safeguard the integrity of literary works.
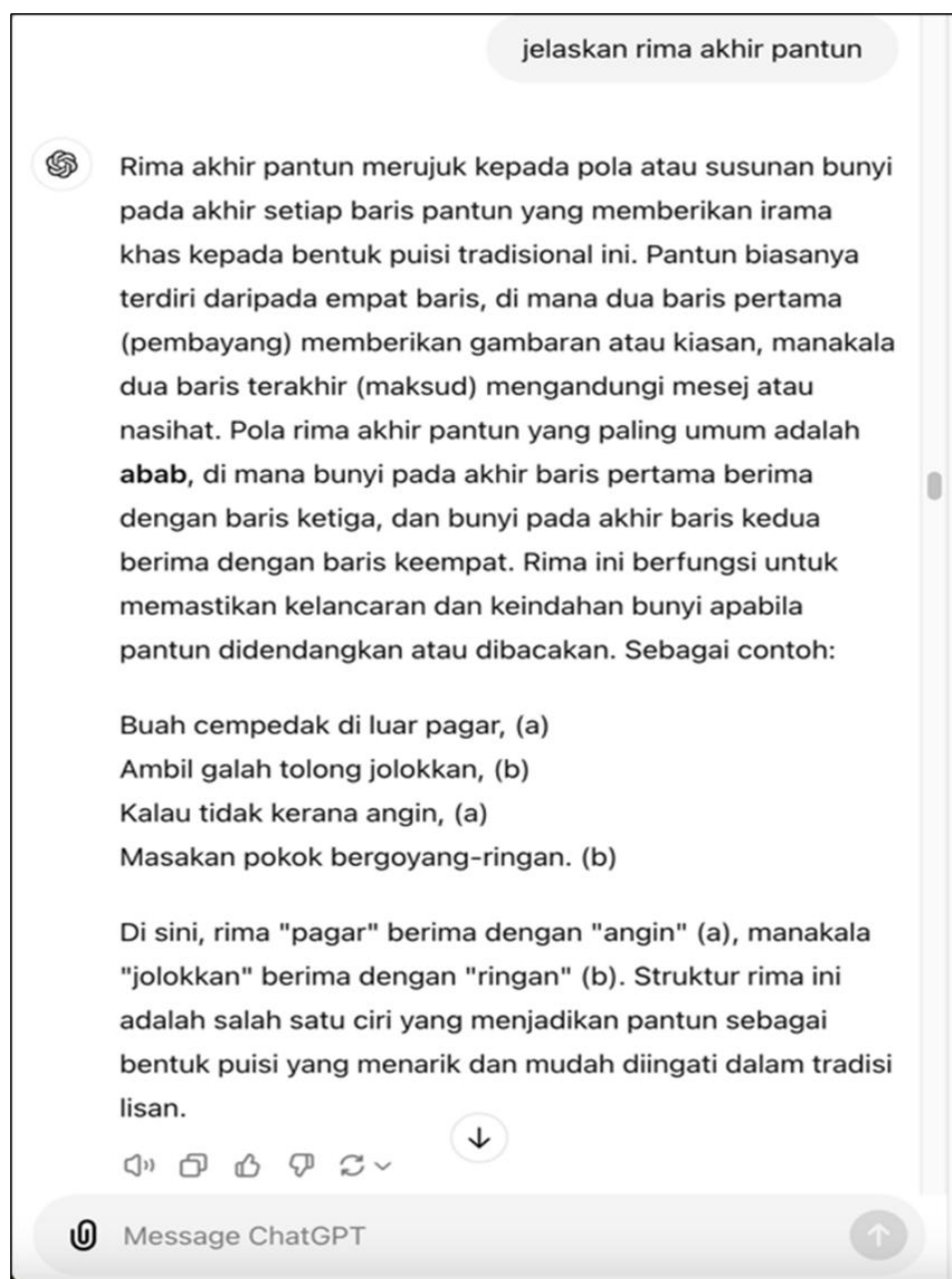

Figure 1. Illustration of the prompts used in training AI ChatGPT to accurately depict the characteristics of Malay Quatrain (*Pantun*)
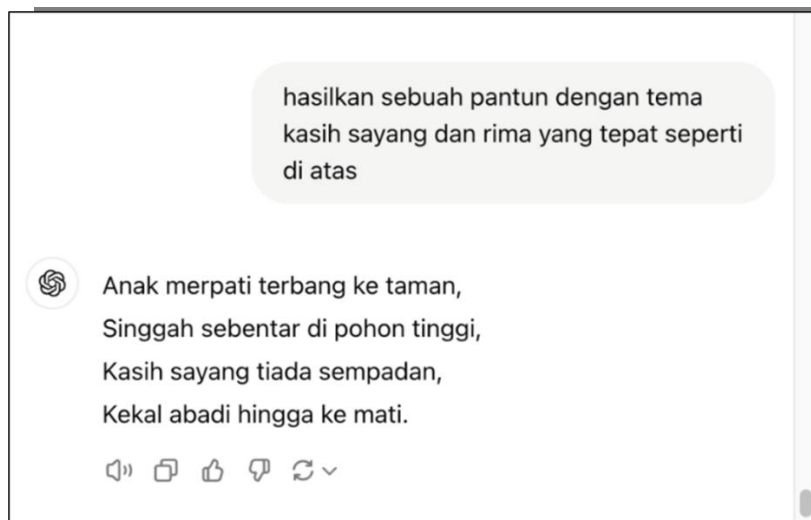
Source: https://chatgpt.com

Figure 2. Illustration of AI ChatGPT prompts for generating Malay Quatrain (*Pantun*) on specific themes after the ChatGPT training process

Source: https://chatgpt.com

The usability of AI requires a thorough evaluation of its potential to ensure its significance and applicability for end users. In fact, there are numerous models available for evaluating technological materials. Among the theories and models that can be applied are the Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh, Morris, Davis, and Davis (2003); the Technology Acceptance Model (TAM) by Davis (1986); the Triple-E Framework by Liz Kolb (2011); and the Pedagogical Usability Model by Norkelainen (2006). This study employs the Triple-E Framework as the foundation for evaluating the potential of AI in the teaching and learning of *pantun* (traditional Malay poetry), as it is highly suitable for examining the potential of technological adaptations in educational contexts.

This can be observed through several past studies that utilized the Triple-E Framework as a reference model for usability evaluation. For instance, Pratama (2022), in the study titled Viewing Technology Integration in Current Classrooms Through the Triple-E Framework, found that the framework provides significant advantages during the analysis process. Similarly, Gaer and Reyes (2022) supported this perspective, emphasizing that the primary purpose of applying the Triple-E Framework is to ensure that the developed technology supports student engagement while enhancing and extending learning objectives. A doctoral dissertation from the University of North Texas, authored by Sheila Erin Schatzke in 2019 and titled *A Validation Study of the Triple E Rubric for Lesson Design: A Measurement Tool for Technology Use in the Classroom*, further reinforces the significance of using the Triple-E Framework as a foundation for evaluating the potential of AI. According to Schatzke (2019), the Triple-E Framework has the potential to guide teachers in designing successful lessons using appropriate technological tools. The framework has also gained validation and support from the International Society for Technology in Education (ISTE), a renowned organization recognized for its best practices in integrating technology into teaching and learning.

According to Liz Kolb in her work entitled Learning First, Technology Second: The Educator's Guide *to* Designing Authentic Lessons (2017), the teacher's role as an individual who creates opportunities for competitive learning, aided by technological tools and resources. The Triple-E Framework, developed by Kolb, not only enhances the effectiveness of educational pedagogy but also adds significant value to the development of technological tools, including models, modules, instruments, and applications that assist in designing effective lessons. The Triple-E Framework was specifically created to bridge the gap between the use of technology in education and its application in classroom instruction. The framework's components are designed to help educators evaluate technological tools that have the potential to meet instructional and learning goals. Its evaluation rubric consists of three key components, which involve assessing (i) student engagement, (ii) the enhancement of learning goals, and (iii) the extension of learning goals. The components of the Triple-E Framework are illustrated in Figure 3 below. The rubric questions provided are particularly useful for evaluating the potential of AI in teaching *pantun* (traditional Malay quatrain)
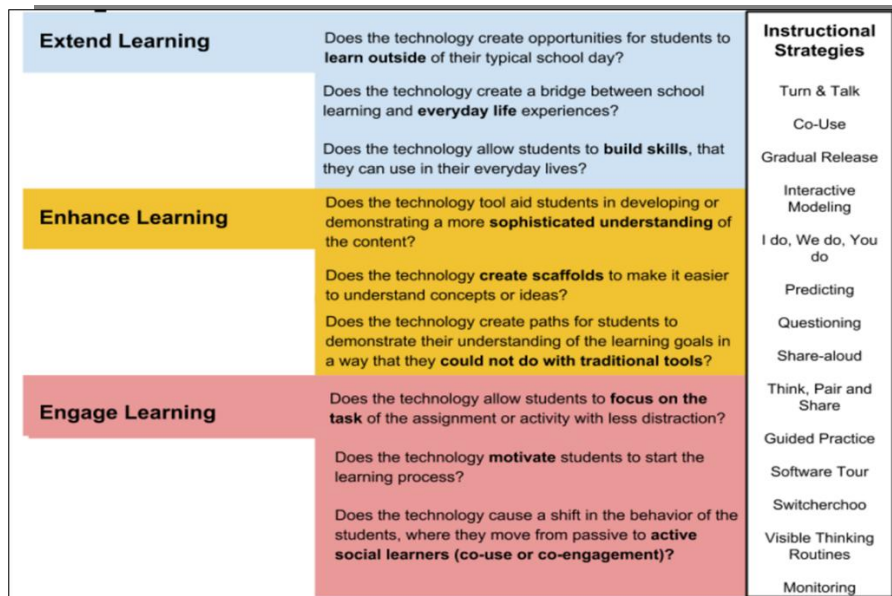
Figure 3. Triple-E framework by Liz Kolb (2017)

Source: https://www.tripleeframework.com/framework-models.htm

RESEARCH METHODOLOGY

This study aims to examine the integration of artificial intelligence (AI) into the teaching of AI. Before gathering substantial data, a comprehensive literature review was conducted using the Google Scholar and Scopus platforms to obtain information relevant to the application of AI in creative and literary education. This review also served to establish the theoretical foundation or reference model for this study. Subsequently, data triangulation was employed through interviews with six experts in the fields of literary education and technology to obtain specific insights into the potential of AI in teaching literature.

The selection of interview respondents consisted of a homogeneous group. The rationale behind this selection was that these respondents could provide rich data with a variety of perspectives, ensuring precise responses due to their different backgrounds but similar experience (Merriam, 2009; Adler & Ziglio, 1996). The chosen sample comprised experienced teachers. Berliner (2004a, 2004b) stated that a teacher is considered an expert if they have taught for at least five years. According to Gambatese et al. (2008), academics can also be regarded as experts in fields they are passionate about. Consequently, the respondents in this study were teachers of Kesusasteraan Melayu Komunikatif (Communicative Malay Literature) with a minimum of five years of experience in teaching Malay literature. The demographic information of the respondents is presented in Table

Table 1. Respondent Interview Expert Profile

No	Name	Age	Gender	Teaching experience	Experience in Literature Field	Education Level
1	GB1	58	P	27 years	22 years	Master's
2	GB2	48	P	28 years	18 years	Master's
3	GB3	47	P	18 years	15 years	Doctorate
4	GB4	52	L	19 years	18 years	Master's
5	GB5	40	L	12 years	6 years	Bachelor's
6	GB6	43	L	15 years	10 years	Master's

Meanwhile, three experts were appointed to review the interview transcripts to ensure validity in terms of

language and content. A pilot study was also conducted with respondents who shared similar characteristics to the actual participants. The purpose of the pilot study was to anticipate better quality interview questions in order to gather more comprehensive information and to estimate the time required for each interview (Ahmad Fikri et al., 2022). Following the actual interviews, the transcripts were completed and returned to the respondents for verification. The interviews were analysed thematically by assigning codes to each respondent's input. The interview data were classified, coded, and analysed using a coding method to generate themes (Huberman & Miles, 2012). The main question posed to respondents for data collection was: What is the necessity of Artificial Intelligence (AI) in the teaching of Malay Quatrain (Pantun)?

Following the interviews, the assessment of AI using a rubric-based checklist was administered to eleven students enrolled in Malay Literature at the Form Six level. The rationale for selecting literature students was to evaluate the potential of AI from the perspective of its future end-users. The checklist was constructed using the Triple-E framework introduced by Kolb (2017). This assessment aimed to explore the potential of AI through manual analysis methods. The small and focused sample size was significant as it directly examined AI's potential rather than evaluating its effectiveness on a broader scale.

Below is the interpretation table developed by Liz Kolb (2017), used for analysing the usability or potential of technological tools and applications.

Table 2. Liz Kolb (2017) Interpretation

Score	Interpretation
13 -18	Exceptional connection between learning goals and tool
7-12	Some connection between learning goals and tool
Below 6	Low connection between learning goals and tool

FINDINGS AND DISCUSSION

Data from the interviews conducted in this study indicates that integrating AI into the teaching of *pantun* is highly necessary for application among students. AI indicated significant potential to support teaching and learning processes (T&L) and even to expand the scope of literature. Several factors underscore the necessity of AI integration in the teaching and learning of *pantun*, as illustrated in **Figure 4**
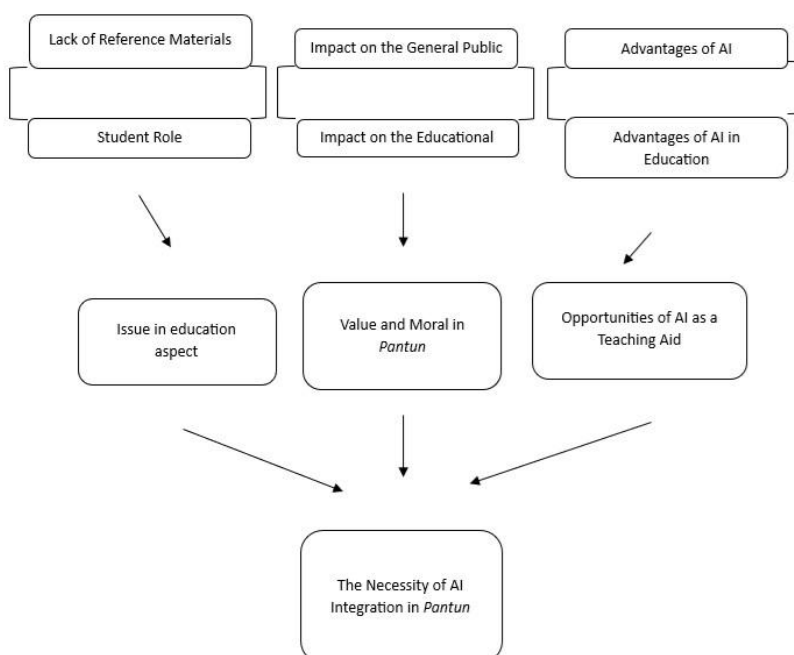

Figure 4. Thematic Analysis of AI Potential in the Teaching of Pantun

The analysis of the interview data showed three fundamental themes as the primary factors influencing the potential and necessity of integrating AI into the teaching and learning of pantun. The first theme centres on issues in learning. Nearly all informants—GB1, GB2, GB3, GB4, and GB5—expressed that a key issue affecting the potential use of AI is the lack of literary reference materials and the role of students, particularly their attitudes toward learning and their knowledge of pantun. The scarcity of reference materials diminishes students' curiosity and interest in reading and analysing pantun works. This, in turn, leads to a lack of enthusiasm for exploring traditional Malay *pantun*. Furthermore, it was found that sources in the form of new media are difficult to access. This statement can be proven in the following interview.

Pantun is a heritage of the community, but what I observe here is that the materials and resources for learning are still lacking, particularly in terms of books. This issue has become pressure for students, as the materials used to teach pantun are still insufficient.)

(Informant GB4)

"So, what I think is that literary materials like pantun in schools should be increased. The resources should be so increased that students have more choices to continue learning these literary works

(Informant GB5)

"When we ask students about the values, themes, or settings in a *pantun* work, they definitely won't know. They're lazy to read and uninterested in reading literary works. They really don't know what literature is."

(Informant GB1)

Next, based on the findings of the interview analysis, one of the key reasons for the necessity of AI in the context of teaching and learning *pantun* (traditional Malay poetry) relates to the second identified theme, namely the values and morals contained in *pantun*. Two informants—Informants GB3 and GB4, along with all other informants, stated that *pantun* contains a wealth of values and moral lessons that can be instilled among readers. *Pantun* offers numerous values and morals that can serve as exemplary guidance for society. Furthermore, these values and morals can act as references and archetypes for their lives. This perspective is proven by the following interview statements:

… the values embedded in Malay literature can serve as a guide, particularly in family life, with children, and subsequently within the local community."

(Informant GB3)

...the local community can utilize literary sources as references for living."

(Informant GB4)

Furthermore, AI has the potential to be integrated into the teaching of *pantun* due to the current advancements in technology and new media, which play a significant role in expanding literature, particularly in areas such as *pantun*. It is evident that technological developments act as a catalyst for various AI applications, such as ChatGPT, Bing AI, Character AI, and many others. Most informants expressed the view that the integration of AI in the teaching and learning of *pantun* enhances students' knowledge through creative processes. This need is evident when considering the significance of adapting to changing times and the specific benefits of these changes. This statement is clearly supported by GB2, GB3, and GB6.

…Looking at it from the perspective of time, the students today are different from us back then; we didn't have technological tools..."

(Informant GB3)

This new generation is more exposed to the use of smartphones, tablets, and the like, so they need to be

introduced to more interactive learning that incorporates artificial intelligence technology."

(InformantGB2)

Many students are really interested in using the Internet and technology applications, particularly those that are game-based and quickly accessible."

(Informant GB6)

Based on the findings from the interviews, it can be concluded that AI holds great potential for integration into the teaching and learning of *pantun*. The reason why three fundamental factors are needed to be established because of few issues in the learning of literature, the rich values and moral lessons embedded in traditional literature, and the current technological capabilities that can enhance the teaching and learning process of *pantun*. The following are the findings on the potential of AI in the teaching and learning of *pantun*. The implementation involved eleven study participants, all of whom were students enrolled in the Malay Literature course at the Form Six level. Each participant was given a QR code attached to a checklist form, which was adapted and developed based on the Triple-E Framework by Liz Kolb (2017). The results of the evaluation using the rubric-based checklist are detailed in **Table 2** below.

Table 2. Findings from the Checklist on the Potential Integration of AI in *Pantun* Learning

Assessment Rubrik		P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11
Student involvement	Student Focus	2	2	1	2	2	2	2	2	2	2	2
	Student Motivation	2	2	2	2	2	2	2	2	2	2	2
	Student Passive to Active	2	1	2	2	1	2	2	2	2	2	1
Learning Objective Enhancement	Complex Comprehension	2	2	2	2	2	2	2	2	2	2	2
	Supporting Concepts and ideas	2	2	2	2	2	2	2	2	2	2	2
	Understanding Learning Objective	2	1	2	2	1	2	2	2	2	1	1
Expanding Learning Objective	Create opportunities	2	1	2	2	2	2	1	2	2	1	1
	Actual Experience	2	0	0	2	1	1	2	1	2	2	2
	Developing Soft-skill	1	1	2	2	1	2	1	2	2	1	2
		17	12	15	18	14	17	16	17	18	15	15

Each agreement value given by the students is based on the recommendations by Liz Kolb (2017). The stated scoring values calculated manually using the Triple-E framework are as follows: Strongly Agree: Assigned a value of two points (2), Agree: Assigned a value of one point, disagree**:** Assigned a value of zero points (0). The score calculation for interpretation involves determining the average agreement value by dividing the total score obtained by the total number of samples (**n**) and the overall rubric score, which is eighteen. The formula for interpreting the score is stated as follows:

$$\sum \text{Skor Purata} = \frac{\text{Skor} (n_1 + n_2 + \text{ Score } \cdot)}{18}$$

Figure 5. The Calculation Formula for the Score Interpretation Using Liz Kolb's Triple-E Framework (2017)

The calculation results, using the formula proposed by Liz Kolb (2017) in the Triple-E Framework as illustrated in Figure 5, revealed that the score for the use of AI in the teaching of *pantun* fell within the range of 15.8 out of a total score of 18.0. According to the score interpretation established by Liz Kolb (2017), a range of 13 to 18 represents the highest category for assessing the usability and accessibility of a technological tool in learning. This finding suggests that AI holds significant potential. It indicated a strong capacity to support the development of numerous effective teaching strategies.

This study also found evidence of engagement, the application of effective learning practices, and opportunities for real-world integration for students. When a total score exceeds 13 points, it may be asserted that all three components of the Triple-E framework are consistently fulfilled. As a result, students are deemed highly active in completing learning tasks by utilizing AI as an instructional aid. Learners' understanding of instructional goals is enhanced in ways unattainable through conventional learning methods, and thus, their comprehension of these goals extends beyond classroom sessions. Furthermore, this group of students demonstrates the ability to connect their experiences with AI to their prior knowledge and daily lives. More specifically, the findings of the evaluation of AI's potential can be interpreted through the three components of the Triple-E framework, as shown below.

Student Engagement

Based on the findings from Table 2, eleven participants in the study, analysed through the Triple-E checklist, stated a correlation indicating that AI helped them stay more focused, with a high agreement score of 90.9%. All participants agreed that AI enhanced their motivation, while eight out of the eleven participants (72.7%) stated

that they were motivated to shift their role from passive to active learners with the integration of AI in the learning of pantun. This is underpinned by Gligorea et al. (2023), who asserted that AI plays a significant role in providing learning experiences. Meanwhile, the integration of AI does not fully involve teachers in the learning process. Teachers only act as facilitators in the students' engagement within the learning process. In this respect, with the integration of AI in learning, the process of learning pantun will encourage active and self-directed student actions. Such active involvement motivates students to engage more deeply with the content and fosters broader thinking. This matter is in consistent with the views of Eizah et al. (2023), who point out that AI enables students to broaden their creativity and simplifies the process of creating *pantun*. Gligorea et al. (2023) also further supports this view by stating that AI optimizes learning pathways, enhances engagement, and improves academic performance.

The learning process through AI integration occurs when students provide specific prompts while using AI applications such as ChatGPT. The content, analysis, and the generation of idea for *pantun* writing can also be explored simultaneously, allowing students to delve into *pantun* in an unrestricted manner, across time, space, and place. This aligns with the views of Arifin & Rosnidar (2023), who argue that AI usage supports the creative process and idea generation. In this context, it is evident that students can access AI regardless of time and location, thus facilitating self-directed learning. AI is not confined to use within the school environment but is also accessible outside of school settings, such as at home. The learning and reading environment through AI integration is determined independently by the students.

Enhancement the learning goal

In the context of improving goals, which is the second component of the Triple-E framework, the findings indicated that the integration of AI in pantun could enhance learning objectives. This is evident as, overall, the informants agreed that AI technology promotes a better understanding of the content of *pantun*. In fact, seven out of eleven participants (63.7%) agreed, stating that they understood the learning objectives through the integration of AI in *pantun*. However, the remaining participants reported difficulties in understanding the learning objectives. This can be attributed to the fact that learning with AI involves low engagement with problem-solving skills, and most of the processes involved are not part of group activities that include discussions. Therefore, constraints in such activities are believed to influence the potential of AI in enhancing students' understanding of *pantun*. Additionally, constraints related to students' access to AI, due to factors such as a lack of access to technological devices like smartphones and computers, result in restricted use of AI applications.

The overall analysis indeed depicts how the integration of AI in the *pantun* instruction significantly influences the enhancement of learning goals of *pantun*. Evidently, that AI can provide students with the convenience of accessing, understanding, and evaluating *pantun* works in a more systematic manner. This is underpinned by the statement of Arif et al. (2024), who found that the use of AI technology is beneficial in maximizing the preparation of language learning. Furthermore, AI enables each student to analyze *pantun* works from multifaceted aspects, such as theme, language style, moral values, and aesthetic elements, by simply providing specific prompts to retrieve such information.

Meanwhile, the learning process with the integration of AI will also assist students in employing higher-order thinking skills through activities such as reasoning with prompts, categorizing, and summarizing the knowledge acquired. Additionally, the exploration of *pantun* through AI technology can also be presented in various formats, such as visuals and interactive explanations that students can experience. Ariffin & Ain (2023) outlines that explanations of Malay poetry using AI differ and are not conventional. In this regard, the learning process provides students with a more meaningful experience as well as enhancing their emotions and active engagement in the context of improving teaching objectives.

Extension the learning goal

Table 2 shows that the scope for expanding learning objectives is low. The analysis found that seven out of eleven study participants, or 63.7%, reported being able to create opportunities through the integration of AI in teaching pantun. Meanwhile, only six out of eleven participants believed that the integration of AI had a positive impact on their real-life experiences. In this context, the integration of AI, in reality, does not clearly reflect its influence on students' real-life experiences. In fact, the design and development of AI did not involve students directly in the process of developing the AI application for pantun instruction. As a result, students were unaware of how to use it, leading to a lack of skills to make fully use of AI. According to Nugraha & Sufanti (2023), the use of AI, if not properly guided, can lead to information inaccuracy, resulting in a mix of misleading information.

Despite often using smartphones in their daily lives, students are considered inexperienced in utilizing these communication tools as learning aids effectively. In addition, the lack of interactive activities, such as idea sharing and discussions relevant to learning *pantun* with AI, also hinders the achievement of learning objectives. In this regard, if students are given the opportunity to engage in collaborative activities, the goals of learning can be further maximized. This aligns with the arguments presented by Arif et al. (2024), which point out that AI-integrated learning tends to function as a personal assistant for language learners, addressing their anxieties and challenges in advancing their literary learning objectives. In reality, the integration of AI into the *pantun* learning process will only reach its full potential if more focused and interactive approaches are also implemented. This is because such approaches enable students to not only understand the role of the technology but also to develop new skills through a more meaningful learning experience.

SUMMARY

In conclusion, this study found that the integration of emerging technologies, such as Artificial Intelligence (AI), holds great potential in exposing and simultaneously expanding literary forms like *pantun*. The use of AI technology in teaching *pantun* has a positive impact on the usability and accessibility of traditional literary materials. AI technology not only renders literature more flexible and dynamic as a learning resource but also offers advantages in several aspects, such as enhancing student motivation and increasing their interest through AI-based applications. In the context of education, integrating AI into the teaching and learning (T&L) of *pantun* can promote student engagement, support improvements, and advance learning objectives, particularly for students as end users.

Besides, AI technology benefits not only students but also teachers and policymakers, such as the Ministry of Education Malaysia, by positioning the development of AI applications as a key component in the National Digital Education framework and policy for literary learning. The development of AI technology should continue by incorporating other literary elements, such as prose, short stories, and poetry, to enrich learning materials and resources. A variety of models and approaches can be proposed as guiding frameworks for the use and

development of AI applications in more comprehensive formats, such as e-modules and models. Several systematic methods can be employed to design the framework for harnessing AI's potential such as the Development Design Research (DDR) approach, the Sidek Development Model, and the ASSURE Model. These approaches highlight the uniqueness and diverse capabilities of AI in supporting the development of literary resources and materials through creative teaching and learning.

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