The Assessment on Generative Artificial Intelligence (GAI) Technology in Malay Language Teaching

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ABSTRACT

Generative Artificial Intelligence (GenAI-Tech) is a branch of artificial intelligence capable of generating new and original data based on existing data. GenAI-Tech can manipulate and synthesize data to create various forms of content using algorithms to look new and realistic. However, most Malay teachers understanding of GenAI-Tech technology is very poor, especially in assessment. The discussion of GenAI-Tech using the SCORE model is not much discussed compared to the model in other strategy planning tools. Therefore, this concept paper aims to describe strategy-based assessment in GenAI-Tech Tech practice in Malaysia using the SCORE Model especially in Malay Language teaching and learning. The methodology used for this concept paper is the conceptual analysis using SCORE model that measured among five elements such as Strengths (S), Challenges (C), Options (O), Responses (R) and Effectiveness (E). The major findings show that SCORE model effectively can show the potential of GenAI-Tech by recognizing the strength, challenges, options, responses and effectiveness in Malay Language assessment educational context. By integrating GenAI-Tech, this approach encourages teachers to embrace challenges, persist through setbacks, and take ownership of their learning journey while leveraging advanced technology to enhance their teaching practices and assessment strategies. The limitation on this paper can be improved by using any other model to get variety of perspectives such as SWOT, TOWS, NOISE, and SOAR. This finding has important implications for teachers who believe their abilities can be developed through dedication, hard work, and the integration of GenAI-Tech are more likely to persevere in the face of challenges. Further research might include longitudinal studies to investigate the stability of GenAI-Tech over time and its predictive capacity for outcomes such as academic performance, career achievement, and overall well-being, particularly focusing on teachers' understanding and application of GenAI-Tech. Exploring the best way that educators can comprehend and integrate GenAI-Tech into their teaching strategies could provide valuable insights into their effectiveness, resilience, and long-term success.

Keywords: Assessment, GenAI-Tech, Malay Teachers, SCORE Model

INTRODUCTION

Artificial Intelligence (AI), first introduced in 1956, marked the beginning of the initial steps in the development of artificial intelligence by scientists. Starting in the 2000s, advancements in computer technology and the development of algorithms ushered in a new era in AI development (AiCI 2024). Generative Artificial Intelligence Technology (GenAI-Tech) began to rapidly expand globally. Therefore, this technology can be utilized in school assessments. However, many educators, especially Malay language teachers, have limited understanding of how this technology can be applied in assessments.

The strengthening of support for Artificial Intelligence (AI) in the Malay language signifies a positive indicator and brings a variety of benefits that shape the lives of society and the progress of the nation (Salmah, 2023). Therefore, teachers should be able to effectively utilize this technology in Malay language instruction. They can

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assess students using this GenAI-Tech.

We need to explore in greater depth how AI can support more effective assessment methods. The use of AI in assessments can help provide faster, data-driven feedback, but the role of academics in ensuring that these assessments are relevant and meaningful to the holistic development of students still needs to be refined (Zaleha, 2024). Therefore, in constructing assessment questions, this GenAI-Tech can assist teachers, particularly Malay language teachers.

When refined, the potential of GenAI-Tech is not much discussed in Malaysia due to its relatively limited popularity compared to resilience. Exploring the potential of GenAI-Tech in teachers in a positive way with an action-oriented approach will help plan more strategically and systematically, especially in deciding a decision. One of the strategies planning tools that is often used is through the SCORE Model. In addition to the SCORE model, there are many other tools such as SWOT, TOWS, NOISE, SOAR and many more (Neal, 2024). However, SCORE has an advantage with its more positive and action-oriented approach compared to SWOT. Thus, the objective of this concept paper is to describe strategy-based assessment in GenAI-Tech in Malaysia using the SCORE Model.

Score Model

The SCORE Model is a strategic planning tool used to help organizations assess and develop their strategies. It's designed to guide organizations in evaluating their current strategy and making informed decisions for future planning. The SCORE analysis is a feasible alternative to SWOT and a vital tool that provides a positive outlook for firms looking to make educated decisions. Its effectiveness stems from its comprehensive and methodical approach, which allows decision-makers to capitalize on strengths and opportunities while resolving obstacles (Neal, 2023).

SCORE Analysis: Most Action-Oriented. But SCORE takes a more positive and action-oriented approach than SWOT. It leads you through potential obstacles and encourages you to generate responses for them. It helps an organization make smart choices. To encourage a people-first company culture, you might prefer the SCORE analysis over other. This method prompts teams to analyse the company's strengths, challenges, opportunities, relationships, and efforts. It's much liked the SWOT analysis but also highlights how co-workers and stakeholder's relations are doing, and the effort workers contribute.

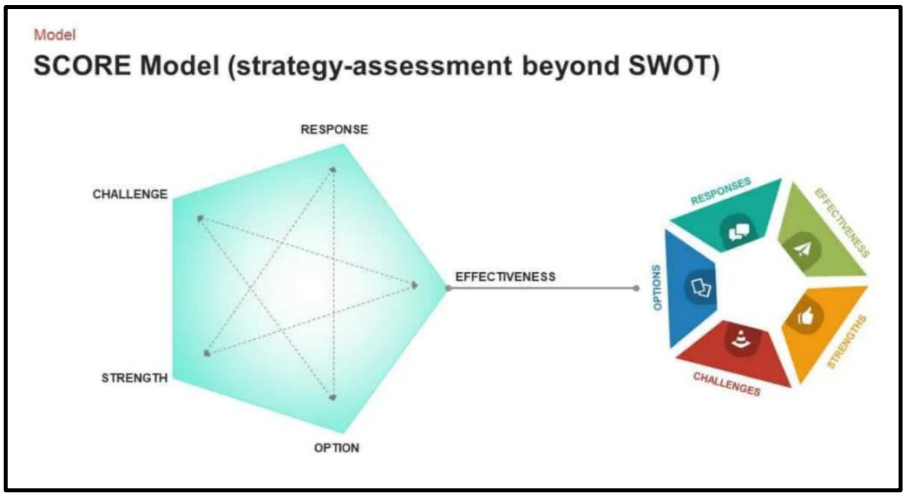

Figure 1: SCORE Model as Strategy Assessment Beyond SWOT (Neal, 2023)

Figure 1 shows the SCORE Model as strategy assessment beyond SWOT. The SCORE model stands for five elements such as Strengths (S), Challenges (C), Options (O), Responses (R) and Effectiveness (E) (Neal, 2023). Strengths (S) represents what you are doing well (or have the potential to do well); Challenges (C) represents the areas where you need additional resources or capabilities to succeed; Options (O) represents the opportunities and risks you face; Responses (R) represents the response from stakeholders and returns or rewards you anticipate; and Effectiveness (E) represents how you intend to make your initiative work efficiently and reliably.

The SCORE model is used to understand teachers' comprehension patterns, as it provides a systematic and comprehensive framework for analyzing the understanding of Malay language teachers in GenAI-Tech-based assessments. Additionally, SCORE can assist in devising effective strategies to enhance the understanding and use of GenAI-Tech in assessments. The SCORE model will be employed throughout the research phases to identify and assess the strengths and initial challenges, through the data collection and analysis phases to examine choices and responses, and up to the final phase of the study to evaluate the effectiveness of the approaches used. This ensures that every aspect of teachers' understanding and use of GenAI-Tech is carefully and thoroughly examined.

The SCORE model is used to understand teachers' comprehension patterns, as it provides a systematic and comprehensive framework for analyzing Malay language teachers' understanding in GenAI-Tech-based assessments. Additionally, SCORE can assist in formulating effective strategies to enhance the understanding and use of GenAI-Tech in assessments. The SCORE model will be employed throughout the research phases to identify and assess strengths and initial challenges, through the data collection and analysis phases to examine choices and responses, and up to the final phase of the study to evaluate the effectiveness of the approaches used. This ensures that every aspect of teachers' understanding and use of GenAI-Tech is thoroughly and comprehensively examined.

The SCORE model serves as an analytical tool and framework that allows researchers to assess various aspects of teachers' understanding of GenAI-Tech-based assessments. SCORE helps structure data, identify issues, find solutions, measure effectiveness, and provide useful feedback to stakeholders beyond the school. By using SCORE, this study can offer in-depth and comprehensive insights into the comprehension patterns of Malay language teachers in assessments using GenAI-Tech and propose practical and effective strategies to enhance the understanding and use of this technology.

Strength

Generative Artificial Intelligence Technology (GenAI-Tech) has shown significant progress in the field of education. GenAI-Tech stands out in the creative and innovative domains compared to various other conventional solutions. There are two key strengths of GenAI-Tech for teaching and learning the Malay language: it helps teachers reduce teaching time and diversifies assessment methods. To support educators, especially in the public education sector, GenAI-Tech can reduce the time and costs associated with preparing teaching materials and conducting assessments.

Teaching materials created using GenAI-Tech will save teachers' time as they can provide preparatory materials to students before class. The variety of teaching methods using GenAI-Tech is more engaging and attracts students' interest. As a result, students will enjoy learning more and better understand the lesson content. For example, in the United States, this service can be accessed through collaborations with educational and research institutions. This aligns with the findings of Kaplan-Rakowski et al. (2023), which state that many educators have embraced ChatGPT and other generative tools in their teaching. This is because many teachers have a positive outlook on GenAI-Tech, and as they use it more frequently, their views become increasingly favourable.

The second strength of GenAI-Tech is its ability to diversify assessment methods through the generation of smart questions that can be customized according to the students' ability levels. It is also capable of providing automatic assessments for tasks and exams, including essay evaluations using natural language processing, as well as offering instant feedback to students about their performance, helping them understand their strengths and weaknesses more quickly. Yi (2023) states that, with the development of smartphones, many people now have the potential to become skilled photographers, just as calculators are accepted in education, ChatGPT may become an essential educational tool. We should embrace the integration of generative AI in education to create a new era in learning. Therefore, this technology can be used as a modern learning aid that greatly assists teachers in generating smart questions and assessments automatically.

A good learning platform for teachers to organize relevant lessons and learning materials should also be assessed in GenAI-Tech. The Ministry of Education Malaysia (KPM) should offer consulting services and training to educational institutions, such as schools, by incorporating GenAI-Tech into their assessment systems.

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Collaboration should also be established between educational institutions in Malaysia and international research to strengthen and further advance GenAI-Tech.

In Malaysia, support from local research institutions, the government, and the technology community strengthens the use of GenAI-Tech. Support from abroad comes through international cooperation, research funding and grants, as well as knowledge exchange programs with experts and researchers, all of which contribute to the development and implementation of GenAI-Tech in educational assessments. The presence of AI applications alongside educators is highly appropriate. In the field of education, the ministry could view this as a catalyst for producing quality and outstanding outcomes (Norazlina, et al, 2020).

Challenges

Malay language teachers face various challenges in using GenAI-Tech for assessments. There are several challenges in implementing assessments using GenAI-Tech, including resistance to change from colleagues and administrators, teachers' skills, and collaboration with relevant stakeholders. Dahliyah (2024) found that the majority of preschool teachers have a moderate understanding of the use of AI in teaching, despite their high interest. This is due to barriers such as lack of training, limited resources, and concerns about the impact of AI on the role of teachers. These concerns are more pronounced among Malay language teachers, particularly due to language constraints, as most GenAI-Tech programs are in English.

The next challenge is teachers' skills in using this technology. Expertise in GenAI-Tech is essential to understanding the algorithms and machine learning models of GenAI-Tech, as well as how to apply them in educational assessments. Analytical and data interpretation skills are also critical to interpreting the results produced by GenAI-Tech tools. Additionally, technical skills in using the tools and platforms of GenAI-Tech, including their setup and maintenance, are required. Rusli (2024) stated that by understanding and addressing these issues and challenges, the use of AI to enhance teachers' digital competencies can be optimized to achieve maximum benefits. Therefore, a holistic approach and cooperation among all stakeholders in the educatinal ecosystem are crucial.

In addition to challenges within schools, relationships with collaborators, suppliers, and other stakeholders will present challenges for teachers. This includes building effective collaborations, high costs, and gaining support and trust from external parties. While AI technology raises various issues, it has proven to improve the quality of human life. Therefore, collaboration from various parties is vital in regulating and addressing issues related to the use of AI technology (Alif, 2019). Consequently, to address ethical and legal implications, educational institutions, in particular, must ensure that the use of GenAI-Tech is sustainable and scalable in the long term.

To implement GenAI-Tech in assessments, we require several capabilities and new services, such as advanced GenAI-Tech tools and platforms capable of generating and analysing assessment content. In addition, strong data analysis services are needed to interpret and leverage the data produced by GenAI-Tech tools. Furthermore, comprehensive technical support is necessary to ensure the smooth operation and troubleshooting of GenAI-Tech tools. Younas, et al. (2023) emphasized that AI technology enhances teaching assessments by automating tasks such as generating exam questions and evaluating assignments, as well as providing efficient feedback to students.

GenAI-Tech can be developed to assist Malay language teachers in creating assessments. We need comprehensive professional development programs to train educators and administrators on GenAI-Tech and its applications. Collaboration with technology companies and institutions is essential to provide access to the latest GenAI-Tech tools and expertise. Adequate funding is also necessary to invest in GenAI-Tech tools. By focusing on these capabilities, skills, and development needs, the implementation of GenAI-Tech in assessments can become more effective and beneficial for educators and students.

Option

GenAI-Tech is an option or alternative for teachers to enhance effectiveness in assessments. There are several alternatives within GenAI-Tech that can be used by Malay language teachers in assessments, including providing

more optimal learning opportunities and diversifying assessment processes. GenAI-Tech can be designed to assist teachers in analysing student performance more efficiently. With the speed of this analysis process, teachers' learning in the classroom will be more optimal. Furthermore, this technology benefits both parties—students can obtain accurate data on their performance, and teachers can assess students quickly. Time and energy savings can be achieved if GenAI-Tech is used effectively by teachers.

Furthermore, the technology available in GenAI-Tech can also be used by teachers to assess students in a more systematic manner. GenAI-Tech offers a variety of assessment types that teachers can use, such as Class Point, Quizizz, and Kahoot. Teachers can also utilize GenAI-Tech technologies like ChatGPT, Jenni AI, and Canva to create various types of assessments both inside and outside the classroom. With the availability of multiple tools in GenAI-Tech, teachers can choose the best ones to diversify their student assessment tools.

However, several risks are inevitable. Fahrina (2023) reported that the use of AI in education faces challenges such as data privacy, technological limitations, and moral and ethical issues. Nevertheless, by involving stakeholders and developing an appropriate policy framework, these challenges can be addressed. To mitigate these risks, several options are available, including implementing intensive training programs for Malay language teachers, monitoring, and evaluating the use of GenAI-Tech. Additionally, relevant parties should develop clear ethical and privacy policies for the use of this technology. To implement this, steps such as integrating training into teacher modules, establishing dedicated monitoring teams, and engaging in the formation of educational policies should be taken.

Therefore, to improve opportunities and actions, teacher training should be a priority to ensure they can effectively utilize GenAI-Tech. Additionally, wisdom regarding privacy and ethics should be developed promptly to protect both student and teacher data, and to ensure that all schools have access to the required technology. Through this approach, we can understand and maximize the use of GenAI-Tech in education in a wise and responsible manner.

Responses

The use of GenAI-Tech technology involves multiple stakeholders such as teachers, students, parents, and competitors. Therefore, all involved users may provide differing responses. Teachers, for instance, may appreciate the widespread use of GenAI-Tech as it facilitates assessment, but at the same time, they may be concerned about the difficulty of understanding the functions of this technology. Niam and Nordin (2024) explain that the use of AI has had a positive impact on teaching and learning in schools across Sarawak. Teachers reported an improvement in their ability to adapt teaching materials to the diverse learning styles of students, while students reported increased motivation and academic achievement.

As for parents, they are likely to constantly question the effectiveness of this technology on their children's achievements. Therefore, parents must stay aligned with the advancement of this technology. Mohd Fitri (2024) emphasizes that digital parenting is an inevitable reality in the digital era. Parents need to be proactive in their children's digital lives, protecting and empowering them as savvy digital media users. This requires parents to master technology while nurturing values, attitudes, and skills for success in the digital world, all while enhancing the quality and happiness of life in a balanced and harmonious manner. Furthermore, technology providers see opportunities to expand their products to educational institutions. In conclusion, GenAI-Tech presents a different perspective based on the needs of the involved parties.

Strategies involving GenAI-Tech in assessments may raise concerns about student data privacy, the reliability of evaluations, and fairness in access to this technology. Therefore, authorities need to introduce stricter regulations, especially in terms of data compliance and the transparent use of algorithms. Additionally, training for Malay language teachers is necessary to ensure this technology is used responsibly and fairly. New laws related to educational technology could have a significant impact on Malay language teachers' understanding of GenAI-Tech. For instance, if the government introduces legislation mandating the use of generative technology in assessments, teachers would need to receive specialized training to adapt to this change. Furthermore, the implementation of stricter student data protection laws may affect how this technology is integrated into learning and assessment processes.

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The future of relevant and adaptive education is waiting for us, and artificial intelligence is the key to making it happen (Fahrina 2023). Thus, every opportunity and risk arising from the strategy of using GenAI-Tech carries unique value. In terms of opportunities, this technology has the potential to enhance the efficiency of Malay language teachers in carrying out assessments and providing more accurate feedback to students. However, risks such as the cost of technology development, teacher acceptance, and potential resistance from parents must be carefully considered. Moreover, business value can be increased by offering cost-effective solutions, good user support systems, and collaborative efforts with various stakeholders.

Effectiveness

Effective GenAI-Tech-based assessments must encompass the use of time, energy, and other resources, including technology infrastructure and teacher training. Through the analysis of teachers' understanding patterns, we can ascertain that GenAI-Tech technology is a relief to teachers. This is because the technology provides a means for teachers to complete their tasks more quickly without compromising quality, while being efficient in the use of resources. Teachers believe that, despite the high costs or the potential security concerns surrounding the use of technology, they still trust in its advantages. Furthermore, encouragement from higher authorities as well as social influence is crucial to motivate teachers to fully integrate AI into their teaching practices (Ting & Helmi, 2024).

The reliability of GenAI-Tech technology needs to be considered from the perspective of whether it generates consistent and predictable assessment outcomes across different primary school contexts. Additionally, teachers are beginning to understand that this technology has the ability to identify and correct mistakes autonomously, such as detecting inaccurate input data or algorithmic bias. This technology is also easily adaptable and user-friendly, particularly in classrooms with varying levels of teacher proficiency. Therefore, teachers need to take a more proactive role in diversifying online teaching methods to ensure that teaching and learning facilitation can be implemented more effectively and interactively (Mohd Badrul, et al 2023).

Malay language teachers will find it easier to understand the capabilities of GenAI-Tech in assessing students. However, this technology also has other functional compatibility, such as the ability to meet educational objectives, including enhancing student understanding and being teacher-friendly. Therefore, we must be able to evaluate the system's capabilities in line with the needs of the Malay curriculum and its support for learning objectives. GenAI-Tech can be integrated into the way this technology functions in assessments, including within traditional learning management systems and assessments. Furthermore, GenAI-Tech facilitates synergy between teachers, students, and administrators by streamlining communication, analysing student performance, and supporting collaboration through digital platforms. This technology can ease the administrative burden on teachers through automated systems, allowing them to focus more on teaching. Additionally, administrators can monitor and support the needs of all parties. Overall, GenAI-Tech creates a more efficient, personalized, and collaborative learning ecosystem. Figure 2 shows the overall data presentation for assessment on Generative Artificial Intelligence (GAI) technology in Malay language teaching based on SCORE Model adaptation.

Figure 2: SCORE Model for Assessment on Generative Artificial Intelligence (GAI) Technology in Malay Language Teaching

SUMMARY

Overall, these results indicate that GenAI-Tech not only has potential in language assessment but also provides opportunities in other fields such as business. Teachers who possess advanced skills in GenAI-Tech can leverage their expertise to generate additional income. Due to practical constraints, this paper cannot provide comprehensive review SCORE. This study was only discussed about positive action using SCORE model. This can be improving by using any other model to get variety of perspectives such as SWOT, TOWS, NOISE, and SOAR This finding has important implication for Growth Mindset Theory by Carol Dweck which suggests that individuals who believe their abilities can be developed through dedication and hard work are more likely to persevere in the face of challenges. Besides that, this finding could help in Malay education. By understanding GenAI-Tech, we can properly identify the usage and strength in Malay Language assessment. Future studies on current topic are therefore recommended. Further study could extend to conduct longitudinal studies to examine the stability of GenAI-Tech over time and its predictive power for outcomes such as academic success, career achievement, and overall well-being using any other model for strategic planning tool.

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