Jurnal Personalia Pelajar 28(1): 143-150
https://doi.org/10.17576/personalia.2801.2025.15
ISSN 0128-2735

Artificial Intelligence in Education, Helper or Destroyer from a Student's Perspective?
(Kecerdasan Buatan dalam Pendidikan, Pembantu atau Pemusnah dari Perspektif Pelajar?)

YONG CHOON KIT

ABSTRACT

The rapid progression in artificial intelligence commands a critical debate about whether it will serve as a helper or destroyer in education for students. The present paper appraises the role of AI on student productivity, creativity, and student dependency. A systematic review and meta-analysis of current literature will be used to draw data in this research that assesses both the positive and negative impacts of AI on student performance. It has been proven that AI motivates learning experiences and mainly frees administrative duties, specifically in the STEM area. Still, it seems to have a few problematic issues: creativity dampening, promotion of reliance, personal disconnection, and privacy concerns caused by AI. The subjects involved in the test are university students, and their perceptions and behaviours were studied through this mixed-method study in both a qualitative and quantitative approach. A questionnaire was distributed to 70 UKM students to measure attitudes regarding AI before and after engaging with AI tools within their coursework. The data were analyzed for mean tests and standard deviation, among others, for these purposes. Results will suggest that AI may bring efficiency to learning and engagement in a task, yet it also brings significant risks to student independence and creative thinking. In this study, it is established that a balanced approach is required to ensure that the benefits resulting from AI in educational settings are maximized while the corresponding negatives are mitigated.

Keywords: artificial intelligence, productivity, creativity, dependency, higher education

ABSTRAK

Kemajuan pesat kecerdasan buatan (AI) telah mencetuskan perdebatan kritikal mengenai peranannya dalam pendidikan, khususnya sama ada ia bertindak sebagai pembantu atau pemusnah bagi pelajar. Kajian ini bertujuan untuk menilai pengaruh AI terhadap produktiviti, kreativiti, dan kebergantungan pelajar. Menggunakan data dari tinjauan sistematik dan meta-analisis literatur semasa, kajian ini menilai kesan positif dan negatif AI terhadap prestasi pelajar. Bukti menunjukkan bahawa AI meningkatkan pengalaman pembelajaran dengan meningkatkan motivasi dan menyelaraskan tugas-tugas pentadbiran, terutamanya dalam bidang STEM. Namun, kebimbangan telah dibangkitkan tentang potensi AI untuk mengurangkan kreativiti, mendorong kebergantungan, dan menyebabkan pemutusan peribadi serta isu privasi. Eksperimen ini dijalankan ke atas pelajar universiti dengan menggunakan pendekatan campuran untuk mengumpul data kualitatif dan kuantitatif mengenai persepsi dan tingkah laku mereka. Borang soal selidik telah diedarkan kepada 70 pelajar UKM untuk mengukur sikap mereka terhadap AI sebelum dan selepas menggunakan alat AI dalam kerja kursus mereka. Analisis statistik, termasuk ujian min dan sisihan piawai, digunakan untuk memeriksa data tersebut. Hasil kajian menunjukkan bahawa walaupun AI dapat meningkatkan kecekapan dan keterlibatan dalam proses pembelajaran, ia juga menimbulkan risiko signifikan terhadap autonomi dan pemikiran kreatif pelajar. Kajian ini menyimpulkan bahawa pendekatan seimbang adalah penting untuk memaksimumkan manfaat AI sambil mengurangkan keburukannya dalam konteks pendidikan.

Kata kunci: kecerdasan buatan, produktiviti, kreativiti, kebergantungan, pendidikan tinggi

INTRODUCTION

Artificial Intelligence (AI) is a rapidly advancing field, progressively extending its influence into numerous business and research domains, with education being a sector of profound impact (Chen et al., 2020). More recently, the advent of Generative AI (GenAI) tools, such as ChatGPT, has marked a significant developmental surge, captured widespread interest and ignited critical discussions across diverse academic disciplines (Su & Yang, 2023). The multidimensional impact of AI on student productivity, creativity, and dependency is discussed in the article to give an overall balanced analysis of the positive and negative points of AI within an educational setting. There are no two ways to use AI in education, as it has altogether revamped other facets of the learning procedure. Studies have reported that AI boosts effectiveness in administration and promotes the retention and personalization of the curriculum for students, contributing appreciably to better instructional methodologies (Chen, 2020). Another study emphasizes its capacity to offer personalized support, refine problem-solving abilities, foster critical thinking, and broaden access to learning resources (Baidoo-Anu & Ansah, 2023). Overall, the usefulness of skill acquisition and collaborative learning environments has increased, and more research resources are available due to AI tools in higher education. These advances point toward a bright future in which AI is envisioned to revolutionize education by taking over the daily administrative grind and adjusting the learning experience to cater to personal needs, thereby allowing new knowledge and skills to be developed. Nevertheless, intermingled with the benefits are significant risks associated with AI that cannot be overlooked. Concerns arise about the perils of overreliance on AI systems, and detrimental effects on students' critical thinking capacities (Ivanov, 2023). It could make a difference in their originality and independence in doing tasks like problems or assignments if they become more reliant on the tools using AI to come up with solutions, hence increasing dependence on the technologies for solutions (Bai, 2023). Also, ethical issues revolve around the use of AI in education with a focus on privacy and data security, among other related issues like bias and stereotype perpetuation. These are some of the things that depict the greatest need for enforcing established procedures and guidelines to ensure the responsible use of AI in educational settings. Moreover, there has been a significant debate on the entrance of AI into education regarding its impact on social dynamics and student involvement. If AI allows more efficient administrative work and improved learning experiences, many believe it will lessen face-to face interaction and the personal level of contact between students and educators (Liang, 2023). This decreased human involvement may lead to a more secluded and less interactive learning environment, further risking the acquisition of critical social and emotional skills. The results obtained here point to the dual face of AI in education. If, on the one hand, AI can dramatically raise efficiency and engagement in the process of learning, on the other, it has remarkable potential risks to student autonomy and creative thinking. It should, therefore, be well balanced to maximize the potential benefits of AI while at the same time mitigating its probable drawbacks. The upshot of this paper is that thoughtful, ethical incorporation of AI into educational settings will be crucial to unleashing its full potential of being a helper rather than a destroyer of humanity.

GENERATIVE AI IN EDUCATION: ENHANCING LEARNING OR HINDERING CREATIVITY?

In less than two years, generative AI technologies such as Google Bard and Bing Chat have rapidly gained attention from universities around the globe. In this context, rapid adoption has been observed by various universities; on the one hand, it defines new transformative potential, and on the other hand, it raises questions about its role as a helpful tool or a potential threat to academic integrity and creativity. Generative AI technologies, due to their cycles of prompts and responses initiated by sophisticated algorithms, are ripe for application in many areas of higher education. Students use them for research, content creation, and their academic work. Administrative staff utilize them for writing reports and analysing data, while faculty members use AI to expedite lesson planning and material development. The crux of the matter here is whether this generative AI is a trend that passes or is part of the future success of universities. Technology has some opportunities and challenges. It provides new ways to enhance teaching and learning in universities. A systematic review by Zawacki-Richter et al. (2019) identified several key areas of AI application in academic support services, including profiling and prediction, assessment and evaluation, adaptive systems, and intelligent tutoring systems. AI can significantly improve student performance and engagement by identifying optimal methods for presenting educational materials, whether through audio, video, or e-book formats, thereby contributing to the overall quality of teaching (Kuleto et al., 2021). At the same time, it severely threatens academic honesty, data privacy, and

related ethical issues. Recently, among the potential for breakthroughs in the field of the education system, generative AI has captured the interest of the academic community. Yet, misconceptions surrounding its chief aim prevail, to generate content and remain. While AI can offer much, it also raises the issue of academic integrity. Ethical guidelines have not matched the quick rise of generative AI and have hence led to potential threats to data privacy, copyright violations, and unequal access to technology, environmental impact, and exploitative employment. Generative AI tools are no mere conveniences; they come with huge implications. One primary concern is the fact that students misuse the tools and go on to write project papers or theses by generating their own content. When this happens, overreliance on AI tools for answers and task completion may lead to a decline in crucial skills such as critical thinking, creativity, and long-term memory retention (Saylam et al., 2023). There are lots of positive effects that come with the use of generative AI for education. Still, the negative factors that stem from the positive ones, like fraud and ethical dilemmas, are a lot as well. University stakeholders should be proactive in finding solutions to these challenges. Policies and guidelines are of great necessity to cater to the proper use of generative AI in a manner that protects student data and privacy while still promoting academic integrity. However, many universities are yet to develop comprehensive policies in this domain, which shows a gap in the existing regulatory framework (Qadir, 2023). Generative AI will increase efficiency and engagement in the education process, provided it is embedded responsibly. The student must use it as a complement, not a replacement, for critical thought and creativity. Overusing AI for obtaining readily available answers might stifle the development of higher-order thinking skills, including analytical reasoning and evaluative judgment (Bai et al., 2023). When this happens, it may concurrently lead to a decrease in students' abilities in critical and creative thinking, and potentially impact character development (Trisnawati et al., 2023). Universities are required to develop awareness programs and educate students regarding the ethical use of technology to fully embrace generative AI. In this regard, they should teach students not to plagiarize and how to cite sources correctly while productively using AI, referring to inspiration and idea generation. Equipped with critical thinking, problem solving skills, and communication skills, students will be able to adapt to fully inclusive learning environments that incorporate AI. The efficacy of using AI in education depends on policies that ensure the strategic use of AI while protecting student privacy and upholding academic integrity. Universities should also put in place principles and rules to check undesirable actions by students and staff; within this context, universities can instill a culture of the ethical application of AI. At the same time, there may be a consideration of possible plagiarism because of the content being created by the AI, while there needs to be strong appraising among students for original work. Now, when one refers to the role of universities, they need to foster AI literacy among the students and faculty. Frameworks for AI literacy often emphasize the importance of knowing and understanding AI, using and applying it effectively, and critically evaluating and even creating AI solutions (Farrelly & Baker, 2023). This will enable universities to realize maximum benefits out of its use while at the same time minimizing its risks and ensuring that it delivers favorable, equitable access and outcomes for all students. Generative AI is not just a flash in the pan; it heralds something more profound in the future of education. Therefore, universities must guide this integration with thoughtfulness and responsibility. A culture promoting the ethical use of AI with comprehensive education centered on developing critical thinking and problem-solving will best prepare students for a future where AI plays an integrated role in their lives, both academically and professionally. Consequently, generative AI will thus be an assistant to or a destroyer in this field. Benefits include increased efficiency and customized learning, but risks relate to academic integrity and ethical use, as well as over-reliance on technology. Universities must move with a balanced approach in developing policies and educational programs that protect student privacy and allow responsible AI use. Only then will the full potential of generative AI be realized; this will make it a powerful tool in enhancing education instead of undermining it.

GENERATIVE ARTIFICIAL INTELLIGENCE

Generative AI is one of the forms of artificial intelligence technologies that work with the intention of creating new content resembling what has been trained on. For instance, it can produce text, images, and music from large enough amounts of data. Think of an artificial intelligence system that reads tens of thousands of books, it then can write new stories according to the patterns and styles learned from this reading. One of the many approaches to achieve the magnificent capabilities of generative AI is the Recurrent Neural Networks. Such technology is a channel to make relatively advanced predictions and outputs in a coherent and creative way.

It's more like a potent version of auto-complete on your phone, and yet it can create complete essays, works of art, or musical pieces. On the one hand, it is beneficial for quick idea and content generation, on the other, it raises questions of originality, ethics, and possible misuse. In a more profound sense, consider how generative AI might apply to medical healthcare ethics such as diagnosing patients' diseases, thus posting both valuable tools and ethical challenges in creating and evaluating content.

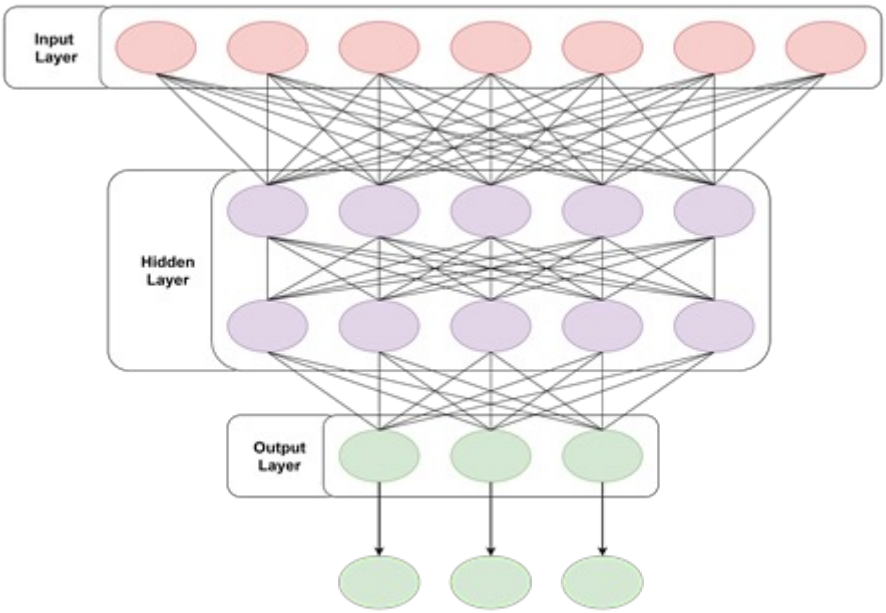

DIAGRAM 1. Recurrent Neural Networks

RESEARCH OBJECTIVES

i. Evaluate the student perceptions of AI tools in education
ii. Evaluate the impact of AI tools on students' productivity
iii. Evaluate the impact of AI tools on students' creativity and critical thinking

RESEARCH METHODOLOGY

This paper leverages a mixed-method study approach, including both quantitative and qualitative methods, to explore in depth the impact on students at universities due to the use of generative AI. The principal method used for gathering data is a questionnaire administered to 70 students at that university. It focuses on collecting detailed information about different aspects of the use of AI in education: frequency, perception, and impact on productivity and learning experiences. Furthermore, interviews with lecturers and a thorough review of the literature complement these quantitative data to offer deeper insight and contextual understanding. The questionnaire is designed to capture a wide range of data related to the students' backgrounds, their perceptions, and outcomes towards the given topic. Descriptive analysis is done by using the mean and standard deviation (SD) method using a 5-point Likert scale, where one represents "strongly disagree" and five represents "strongly agree." When the mean score is divided into three levels, it indicates low (mean >1.7), medium (1.8 – 3.33), and high (3.34 – 5.00). Prior to the main study, a pilot study was conducted with 10 students (not part of the main sample of 70) to test the clarity and reliability of the questionnaire items. The Cronbach's Alpha value for the questionnaire responses from this pilot study was approximately 0.70. The value shows that the internal consistency and the reliability of the set of questions used are fair in the questionnaire. Kaplan and Saccuzo support the argument that a good level of reliability is in the range of 0.7- 0.8 (Ahmad, 2009). While a Cronbach's Alpha of 0.70 is acceptable and indicates that the questionnaire is reasonably reliable, there may still be room for improvement.

RESEARCH FINDINGS AND DISCUSSION

The respondents are 70 students mainly from the Faculty of Information Science and Technology at the UKM Bangi campus. The students come from various

fields of study with the majority being from Science, Technology, Engineering and Mathematics (STEM) totalling 56 people (82.9%), whereas Social Science and Business has 6 people (8.6%) each respectively. Out of 70 students, all of them admit to using AI tools in their work, with an average of 74% of the students admitting to using AI tools as frequently as daily, whereas 21% use weekly and only 4% use monthly. It is important to note that the vast majority of respondents (82.9%) are STEM students, which we can infer that they are in more intense and integrated contact with technology in general, as well as with AI tools in particular, in their studies. All respondents reported using AI tools in their work; integrating with academic activities was relatively high. High usage rates, especially daily usage by the majority, attest that AI tools are well integrated into the curriculum, and students find them necessary for the effective organization of their academic tasks. There is, therefore, a need for the curricula to be constantly updated and revised to have AI literacy skills and guidelines for ethical use to develop students into informed and responsible users of AI.

STUDENT PERCEPTIONS OF AI TOOLS IN EDUCATION

Respondents were asked about the benefits and drawbacks of applying AI tools in education. To the question, "Do you believe the benefits of using AI tools in education outweigh the potential drawbacks?" the mean score was found to be 3.60, which indicates that the perception is moderately positive. To the question "How do you feel about using AI in education?" The mean was 4.36, indicating that students were moderately optimistic about their attitudes to AI tools. To measure perceived impact of actual engagement with AI tools, the questions also asked learners to rate their perceptions before and after use of the tools. For the question "Before engaging with AI tools, what was your perception of their potential benefits?" The mean score indicated that students had a positive initial perception of these tools at 3.75. Then, after using the AI tools, the students were asked, "After engaging with AI tools, how has your perception of their benefits changed?" The mean score was higher at 4.36, suggesting that more positive benefits were seen with the individual direct interaction. These findings suggest that, on the whole, university students have a positive attitude toward AI tools in education, and further engagement with them improves their perception of the benefits. It is such a positive shift that indicates the potential of these AI tools to enhance educational experiences and outcomes. Implementing AI tools inside an educational context seems to elicit a positive shift in students' perceptions. The initial level of positive perceptions can be further improved to a moderate to high level after engaging directly with the tools. As such, educational programs will be better placed to incorporate AI tools to increase positivity and receptiveness among students and thus enhance the learning environment.

TABLE 1

Perception	M	SD
Do you believe the benefits of using AI tools in education outweight the potential drawback?	3.60	0.82
How do you feel about the use of AI in education?	4.36	0.70
Before engaging with AI tools, what was your perception of their potential benefits?	3.75	0.95
After engaging with AI tools, how has your perception of their benefits changed?	4.36	0.82

IMPACT OF AI TOOLS ON STUDENTS' PRODUCTIVITY

Participants were requested to assess the extent to which AI tools affected their productivity in coursework. In response to the question, "To what extent do AI tools improve your productivity in coursework?" the mean score was 4.36, and it therefore portrayed quite a high perception of the positive influence of AI tools on productivity. Likewise, concerning the question, "Do

you think that AI tools make complex subjects easier to understand, therefore increasing the overall value of your learning experience?" students gave a mean score of 4.36, which was very high, indicating the perception of AI tools in enhancing the learning experience. The variable motivation was measured by asking students, "How has the use of AI tools affected your motivation to learn?" The mean score was 3.89, showing moderate positive influence on motivation. Generally, the findings show that university students consider AI tools helpful for their productivity and learning experience, while slightly more moderate is the influence on motivation. This clearly shows the potential of AI tools in raising educational standards to new levels, bettering productivity even in complex issues. This, therefore, appears to impact productively in students' activities and learning experiences. The above two areas scored highly, indicating that the AI tools are deemed adequate for students to engage with their coursework and to better comprehend complex issues under consideration. Evidence of moderate impact on motivation tends to bring the impression that although helpful, increased motivation may necessitate other means to fully raise motivation levels among learners. This would mean that using AI tools in educational programs would incorporate a more productive and enriched learning environment for students.

TABLE 2

Perception	M	SD
To what extent do AI tools improve your productivity in coursework?	4.36	0.82
Do you find that AI tools enhance your learning experience by making complex topics more understandable?	4.36	0.64
How has the use of AI tools affected your motivation to learn?	3.89	0.86

IMPACT OF AI TOOLS ON STUDENTS' CREATIVITY AND CRITICAL THINKING

Respondents were asked, "Do you think AI tools have enhanced your creative thinking skills?" Rating from 1 (strongly disagree) to 5 (strongly agree), the mean was found to be 3.70, which shows moderate positivity in perception towards AI enhancing creativity. Similarly, all items in the questionnaire had a range of responses from 1 (strongly disagree) to 5 (strongly agree) for the question, "Do you feel that reliance on AI tools has diminished your ability to think critically or solve problems independently?" The mean was 3.24, which suggested that students were slightly concerned about the threat of AI tools in overreliance that would interfere with their independent critical thinking and problem-solving skills. These results indicate that students have a very nuanced view regarding how AI will influence their cognitive capacity. There is a moderate level of recognition of how AI could be harnessed to enhance creativity. Still, concern continues that dependence on AI for creative tasks may be detrimental to critical thinking and problem-solving. Further studies and interventions in this regard might be taken up to find ways of optimum use of AI to enhance creativity yet prevent any detrimental impact on critical thinking.

TABLE 3

Perception	M	SD
Do you believe AI tools improved your creative thinking skills?	3.70	1.04
Do you feel that reliance on AI tools has diminshed your ability to think critically or solve problems independently?	3.24	1.20

CONCLUSION

Generally, although such generative AI may present opportunities for enhanced teaching and learning, it also risks academic integrity, data privacy, and ethical standards being compromised. Misuse of AI tools by students pushes them toward plagiarism and the loss of independence when thinking critically and making decisions, as they most probably become dependent on the technologies. Attitude towards AI tools, according to the results of 70 students, was mainly positive overall and turned out to be even more positive after direct contact with the use of AI tools. According to students, AI tools will enhance productivity, simplify the learning of complex topics, and moderately improve motivation. At the same time, there are worries that excessive reliance on AI tools might adversely affect critical thinking and problem-solving skills. The students' comments regarding the use of AI tools point out both advantages and disadvantages. Some students feel AI helps them with complex topics and increases their creativity, while others fear over-dependence and less individual research effort. Universities need to develop policies and educational programs regarding the correct use of AI to ensure proper academic integrity, keep student privacy and data, and help with proper ethics at work involving AI. Awareness of the restrictions and adequate functioning of AI has to be made within the academic community. AI should be used as an aid, similar to how a calculator is an aid to a mathematician, which would help students learn and instigate understanding with depth. It is essential not to paste AI-given information but rather think about the issue analytically. The AI tools are not perfect; they learn based on historical data and, therefore, should be used as aids rather than as the one single trustworthy source of information. This balanced approach will help universities harness the full potential of AI while mitigating its risks, ultimately enhancing the educational experience.

ACKNOWLEDGEMENTS

The researcher would like to express his deep gratitude to Dr Wandeep Kaur A/P Ratan Singh under Universiti Kebangsaan Malaysia for her generosity in providing us many profound insights about generative AI usage in the university.

REFERENCES

Bai, L., Liu, X., & Su, J. (2023). ChatGPT: The cognitive effects on learning and memory.*Brain-X*. https://doi.org/10.1002/brx2.30.

Baidoo-Anu, D., & Ansah, L. (2023). Education in the Era of Generative Artificial Intelligence (AI): Understanding the Potential Benefits of ChatGPT in Promoting Teaching and Learning. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.43374 84

Chen, L., Chen, P., & Lin, Z. (2020). Artificial Intelligence in Education: A Review. *IEEE Access*, 8, 75264- 75278. https://doi.org/10.1109/ACCESS.2 020.2988510.

Farrelly, T., & Baker, N. (2023). Generative Artificial Intelligence: Implications and Considerations for Higher Education Practice. *Education Sciences*. https://doi.org/10.3390/educsci131 11109.

Ivanov, S. (2023). The dark side of artificial intelligence in higher education. *The Service Industries Journal*, 43, 1055 - 1082. https://doi.org/10.1080/02642069.2023.2258799.

Jurado, R., Pettersson, T., & Zwierewicz, M. (2023). STUDENTS' ATTITUDES TO THE USE OF ARTIFICIAL INTELLIGENCE. *ICERI2023 Proceedings*. https://doi.org/10.21125/iceri.2023.0191.

Kuleto, V., Ilić, M., Dumangiu, M., Ranković, M., Martins, O., Păun, D., & Mihoreanu, L. (2021). Exploring Opportunities and Challenges of Artificial Intelligence and Machine Learning in Higher Education Institutions. *Sustainability*. https://doi.org/10.3390/su131810424

Liang, Y. (2023). Balancing: The Effects of AI Tools in Educational Context. *Frontiers in Humanities and Social Sciences*. https://doi.org/10.54691/fhss.v3i8.5 531.

Qadir, J. (2023). Engineering Education in the Era of ChatGPT: Promise and Pitfalls of Generative AI for Education. *2023 IEEE Global Engineering Education Conference (EDUCON)*, 1-9. https://doi.org/10.1109/EDUCON5 4358.2023.10125121.

Saylam, S., Duman, N., Yildirim, Y., & Satsevich, K. (2023). Empowering education with AI: Addressing ethical concerns. *London Journal of Social Sciences*. https://doi.org/10.31039/ljss.2023.6 .103.

Siegle, D. (2023). A Role for ChatGPT and AI in Gifted Education. *Gifted Child Today*, 46, 211 - 219. https://doi.org/10.1177/10762175231168443.

Slimi, Z. (2023). The Impact of Artificial Intelligence on Higher Education: An Empirical Study.

European Journal of Educational Sciences. https://doi.org/10.19044/ejes.v10n o1a17.

Trisnawati, W., Putra, R., & Balti, L. (2023). The Impact of Artificial Intelligent in Education toward 21st Century Skills: A Literature Review. *PPSDP International Journal of Education*. https://doi.org/10.59175/pijed.v2i2.152.

Whitfield, S., & Hofmann, M. (2023). Elicit: AI literature review research assistant. *Public Services Quarterly*, 19, 201 - 207. https://doi.org/10.1080/15228959.2 023.2224125.

Zawacki-Richter, O., Marín, V., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education – where are the educators?. International Journal of Educational Technology in Higher Education, 16. https://doi.org/10.1186/s41239-019-0171-0.

Yong Choon Kit*
Universiti Universiti Kebangsaan Malaysia,
43600 UKM Bangi, Selangor D.E., Malaysia.

*Corresponding author: a186687@siswa.ukm.edu.my