

KNOWLEDGE AND USE OF ARTIFICIAL INTELLIGENCE IN EDUCATION AMONG HEALTH EDUCATION STUDENTS OF ALVAN IKOKU FEDERAL UNIVERSITY OF EDUCATION OWERRI, IMO STATE

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Abstract

Artificial intelligence in education (AIED) has contributed significantly to improving learning experiences and enhancing academic outcomes. However, that some but students tertiary education possess limited knowledge of these tools lack adequate skills for utilizing them effectively for academic purposes. This study explored knowledge and use of artificial intelligence in education among health education students in Alvan Ikoku Federal University of Education, Owerri, Nigeria. Three research questions and two hypotheses were raised for the study. The sample size of 201 respondents for the study was drawn through simple random sampling technique.

The researcher utilized cross-sectional survey design. The data for the study was collected using researcher's structured questionnaire titled "Knowledge and Use of Artificial Intelligence in education among Health Education Students Questionnaire (KUAIEDHESQ). The instrument was validated by three experts from the department of Health Education, Alvan Ikoku Federal University of Education, Owerri. Pearson Product Moment Correlation was used for the reliability test, and scores of 0.79 and 0.78 were obtained. Data collected were analyzed using descriptive statistics of frequency and percentage to analyze the demographic data and the research questions while chi-square was used to test the hypothesis at 0.05 level of significance.

The result revealed that more than two-thirds of the respondents are knowledgeable of AIED tools but above half of the respondents use these tools. The finding also revealed that 400 level students and females were more knowledgeable of AIED tools more than their counterparts. The finding on usage reveals that overall, less than half (46.4%) of the respondents do not use AIED regularly. The result also shows that students in 200 level use AIED tools more than those in the other years of study and females use these tools more than males. The findings on the hypotheses revealed that there was no significant difference in the knowledge and use of AIED according to level of study and gender.

Based on the findings, the researcher recommended that the university management should organize seminars and workshops each semester to educate students on artificial intelligence in education and how to use them for better academic outcomes.

Keywords: Artificial intelligence, Artificial intelligence in education, Students' knowledge, Students' usage, Tertiary education.

Introduction

Innovations in science and technology have contributed to the development of several tools for enhancing life and productivity in humans. One of such is artificial intelligence (AI) tool which has equally become a transformation force and cornerstone to modern technology. Artificial intelligence as conceptualized by Nwakunor (2021) is the computer controlled robots that think intelligently like human beings. It is seen as a machine with the ability to mimic human capabilities such as learning, organizing and reasoning. Artificial intelligence is evolving at an accelerated pace and impacting the deep essence of higher education as asserted by Fashimira and Kotamjani (2018). As revealed by Fausta and Onyekaba (2025), AI has application across several fields such as finance, health care, transportation, agriculture, customer service and education. In education, AI has transformed schooling from imparting knowledge to collaboration, production of information, mentorship and evaluation (Almusade et al., 2023).

There are several AI tools in the field of education and they are termed artificial intelligence in education (AIED). These tools include TeamGTP, Consensus, Gradescope, Fetchi, Otterai, Plaito, Ivyai, Knowji, Querium, and Carnegie. Scholarly, Mendeley, Gemini, MATHia, Research Rabbit, Perplexity and ChatPDF are AIED identified by Onwuagboke, et al. (2024) including natural language processor, computer vision, virtual assistants, robotics, Google Apps, cloud computing, Smart Sparrow, Chatbot and Snapchat. These tools were categorized into AI-directed, AI-supported, and AI-empowered (Ouyang & Jiao 2021); literature search, research analyzing tools, and academic editing and writing tools (Pinzolit, 2024). Irrespective of the class or group, AIED tools play key roles in enhancing teaching and learning because of their potential in revolutionizing education and addressing academic needs of students (Holmes et al., 2019). This aim can be actualized if students are knowledgeable about them and use them. Artificial intelligence in education as posited by Vieru and Petrea (2025); Almusaed et al., (2023) and Ouyang et al., (2023), promote personalized learning, improve academic outcomes, and enhance students' engagement by bringing a shift in paradigm in the way academic work is done across academic institutions (Duggal, 2023).

Based on the foregoing, Seo et al. (2021) revealed that AI has changed and totally transformed most conventional approaches of teaching and learning, from teacher-centered to learner-centered, thereby making education more inclusive and accessible as learners can now learn at their own pace, anytime and anyplace. Furthermore, Fausta and Onyekaba (2025) highlighted the importance of AI in improving effective administration in tertiary institutions, enhancing data of management and decision making processes, supporting resource optimization, facilitating the implementation of teaching and learning programme, and improving research programme development in tertiary institutions. Tertiary education as conceptualized by Ogunode and Gregory (2023), is a planned and organized educational system aimed at the holistic development of individuals and the total transformation of the society through the utilization of teaching, research and provision of community services. Tertiary institution students' knowledge of AIED tools will help them tap into the benefits such as enhancement of their learning and speaking skills

and promotion of quick understanding of their course by way of simplifying technical aspects of their courses as enumerated by Ventura and Lopez (2024).

The knowledge of AIED tools will promote the use of these tools among tertiary education students. As reported by Prem (2025), tertiary institution students use AI tools to perform academic activities such as assignment, brain storming and idea generation, improve reading and writing skills, examine validity of data, summarize lesson notes, and improve quality of work.

Some empirical evidence on knowledge and use of AI tools among tertiary institution students showed low knowledge and usage of AI tools among university students (Isave, 2023; Guanai&Oribhabor, 2023; Alimi, et al. 2024), while some (Garapati et al. 2024; Ventural et al. 2024; Okoye et al. 2025) reported that students were knowledgeable of and used artificial intelligence tools to enhance learning. Variables such as gender and year level influence AI knowledge and usage. Garapati et al. (2024), revealed that knowledge and use AI tools was significantly differently by gender and year level with males being more adequately knowledgeable of AI than their female counterparts. Mogelvang et al. (2024) discovered that males use AI tools more than females. Based on the foregoing, Maurat, et al. (2025) revealed that year one students use AI tools for academic purposes more than students in other years of study and males use AI tools more than female students. However, Alimi et al. (2021) and Onwuagboke et al. (2024) reported no significant difference in knowledge and usage of artificial intelligence among undergraduates their according to gender. Despite these findings, more studies are needed in this area, mostly in developing countries among tertiary institution students offering health education and related courses, because in their future career, they will need not just the knowledge of AI but the skills in handling AI effectively.

Furthermore, though AIED tools have been adopted into teaching and learning among universities in the developed countries, but only few universities in developing countries including Nigeria have done so and students from these universities will be lagging behind in both the knowledge and use of AIED tools for their academic purposes. Some universities have conducted workshops and seminar for their students on AIED yet more needs to be done with regards to students' knowledge and use of AIED tools for academic purposes. This necessitated this study on knowledge and use of artificial intelligence among health education students in Alvan Ikoku Federal University of Education, Owerri.

Methodology

The study was a cross-sectional survey designed to investigate the knowledge and use of artificial intelligence in education among health education students of Alvan Ikoku Federal University of Education, Owerri. The population of the study included second year to fourth year 2023-2024 undergraduates with a population of 437 students. Simple random sampling technique was used to draw 201 respondents from the population. Researchers structured questionnaire titled "knowledge and Use of Artificial Intelligence in education among Health Education Students Questionnaire (KUAIEDHESQ) was used to collect data. The questionnaire is a close ended type, with three sections, A - C. Section A

contains the demographic data of the respondent. Section B contains a 9item statements on the knowledge of AIED tool while section C contains 11item statements on the use of AIEDS.

Review of related literature was extensively done to ensure content validity. For face validity, three experts from the department of health education Alvan Ikoku Federal University of Education validated the instrument. To test for the instrument's reliability, 10 copies of the instrument were administered to 10 students from Biology department using test-retest technique using Pearson Product Moment Correlation, reliability scores of 0.79 and 0.78 were obtained and considered as reliable. The instrument was administered online using Google Form which was articulated through the students' group WhatsApp. After collecting the respondents' responses via the Google Forms, the data were extracted and organized for analysis. Statistical Package for the Social Sciences (SPSS) version 27.0 was used to analyze the data. The frequency and percentage of each item were computed and presented in tables. Chi square was used to test for significance difference at 0.05.

Results

Table 1: Responses on knowledge of artificial intelligence in education among health education students

S/N	AI tools in education	Yes (%)	No (%)
1	ChatPDF is an AI tool in education	152(84.9)	27(15.1)
2	Research Rabbit is an AI tool in education	108(60.3)	71(39.7)
3	Grammarly is an AI tool in education	122(68.2)	57(31.8)
4	Consensus is an AI tool in education	72(40.2)	107(59.8)
5	Scholarly is an AI tool in education	84(46.9)	95(53.1)
6	Google assistant is an AI tool in education	162(90.5)	17(9.5)
7	QuillBot is an AI tool in education	136(76.0)	43(24.0)
8	Google app is an AI tool in education	142(79.3)	37(20.7)
9	ChatGPT is an AI tool in education	167(93.3)	12(6.7)
	Average (%)	127 (70.9)	52 (29.1)

Table 1 presents the responses regarding knowledge of artificial intelligence in education among health education students in Alvan Ikoku Federal University of Education Owerri. The result revealed that more than two-thirds (70.9%) of health education students had a good knowledge of artificial intelligence in education (AIED) while only 29.1% do not have knowledge of the same. The AIED with the highest knowledge score (93.3%) is ChatGPT followed by Google assistant (90.5%) and then Chat PDF (84.9%). The item with the lowest knowledge score (40.2%) as revealed by the result in the table is Consensus, followed by scholarly (46.9%).

Table 2: Responses on uses of artificial intelligence in education among health education students.

S/N	Frequent use of the following AI Apps	Often (%)	Rarely (%)	Never (%)
1	I use Google assistant to perform actions using natural language	111(62)	65(36.3)	3(1.7)
2	I use Elisa speak to improve my speaking skill	77(43)	84(46.9)	18(10.1)
3	I use QuillBot to improve my writing and check grammar	81(45.3)	76(42.5)	22(12.3)
4	I use Grammarly as a writing and editing assistant	84(46.9)	60(33.5)	35(19.6)
5	I use Research Rabbit to review literature	77(43)	73(40.8)	29(16.2)
6	I use Consensus to access answers to research questions based on evidence from peer-reviewed studies	24(13.4)	64(34.1)	94(52.5)
7	I use ChatGPT to write projects and seminars	155(86.8)	20(11.2)	4(2.2)
8	I use TutorMe for personalized tutoring	36(20.1)	75(41.9)	68(38)
9	I use Scholarly to summarize long articles	27(15.1)	66(36.9)	86(48)
10	I use ChatPDF to get required answers from PDF files	110(61.5)	54(28.5)	18(10.1)
11	I use Google App for my personal learning	132(73.7)	40(22.3)	7(3.9)
	Average (%)	83(46.4)	61(34.1)	35(19.5)

Table 2 presents responses on use of artificial intelligence in education among health education students in Alvan Ikoku Federal University of Education Owerri. The result showed that overall, less than half (46.4%) of health education students used AIED frequently, 34.1% use them rarely, and 19.5% never used any AIED. Artificial intelligence in education often used by most of the respondents is ChatGPT (86.8%) and Google App (73.7%). The table also revealed that more than half of the respondents often used Google assistant (62%) and ChatPDF (61.5%). The AIED not used by majority of the students are Concensus (86.6%), Scholarly (84.9%) and TutorMe (79.9%).

Table 3: Responses on knowledge of artificial intelligence in education among undergraduate students based on level of study

Variables	Knowledge of Artificial Intelligence Tools		
Level of study	Yes (%)	No (%)	Total
200 level	19(78.9)	4(21.1)	19
300 level	101(63.5)	58(36.5)	159
400 level	1(100)	0(0.0)	1
Total	127(70.9)	52(29.1)	179

Table 3 presents responses on the knowledge of artificial intelligence in education among health education students in Alvan Ikoku Federal University of Education Owerri based level of study. The result revealed that knowledge of AIED among health education students varied slightly by year of study. Four hundred level students were more knowledgeable (100%) of AIED than their counterparts in 200 level (78.9%) and 300 level (69.8%). Overall, 70.9% of students across all the levels of study are knowledgeable about AIED tools, indicating a generally consistent knowledge with slight variations by level of study.

Table 4: Responses on uses of artificial intelligence in education among health education students based on level of study

Variables	Use of Artificial Intelligence Application			
Level of Study	Often (%)	Rarely (%)	Never (%)	Total
200 level	13(68.4)	4(21.1)	2(10.5)	19
300 level	90(56.6%)	49(30.8)	20(12.6)	159
400 level	0(0.0)	1(100.0)	0(0.0)	1
Total	103(57.5)	54(30.2)	22(12.3)	179

Table 4 presents the responses on the use of artificial intelligence in education among health education students in Alvan Ikoku Federal University of Education Owerri based on year of study. The result showed that 200 level students (68.4%) used AIED more than their counterparts in 300 level (56.6%). The table also revealed that 400 level students rarely used AIED tools. Overall, 57.5% of students often used AIED tools, with 30.2% use them rarely and 12.3% never used them. This suggests that more than half of health education students use AIED tools regularly, especially those in 200 level, with some variability in frequency of use across levels of study.

Table 5: Responses on knowledge of artificial intelligence in education among health education students based on gender

Variables	Knowledge of Artificial Intelligence Application		
Gender	Yes (%)	No (%)	Total
Male	15(65.2)	8(34.8)	23
Female	112(71.8)	44(28.2)	156

Total	127(70.9)	52(29.1)	179
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Table 5 presents responses on the knowledge of artificial intelligence in education among health education students in Alvan Ikoku Federal University of Education Owerri based on gender. The result indicated that the knowledge of AIED among health education students is similar across genders, although females were more knowledgeable (71.8%) than males (65.2%).

Table 6: Responses on uses of artificial intelligence in education among health education students based on gender

Variables	Use of Artificial Intelligence Application			
Gender	Often (%)	Rarely (%)	Never (%)	Total
Male	12(52.2)	8(34.8)	3(13.0)	23
Female	91(58.3)	46(29.5)	19(12.2)	156
Total	103(57.5)	54(30.2)	22(12.3)	179

Table 6 presents responses on the uses of artificial intelligence application among undergraduate students in Alvan Ikoku Federal University of Education Owerri based on gender. The result shows that 58.3% of female students and 52.2% of male students frequently used AIED tools. A further 29.5% of females and 34.8% of males use AIED rarely, while 12.2% of females and 13.0% of males never used AIED. Overall, 57.5% of students use AIED often, indicating similar usage patterns across genders with slightly higher frequent use among females.

Table 7: Chi-square analysis knowledge of artificial intelligence in education among health education students based on level of study

Area of Study	Yes (%)	No (%)	Total	χ^2	Df	Sig.	Dec.
200 level	15(78.9)	4(21.1)	19	.959	2	.859	Not Sig.
300 level	111(69.8)	48(30.2)	159				
400 level	1(100)	0(0.0)	1				
Total	127(70.9)	52(29.1)	179				

From the chi-square analysis in table 8, the statement of hypothesis 1 is accepted; implying that there is no significant difference in the knowledge of artificial intelligence in education among health education students in Alvan Ikoku Federal University of Education Owerri based on level of study. This is because, the p-value (Sig. = .859) is greater than the 0.05 alpha level.

Table 8: Chi-square analysis uses of artificial intelligence in education among health education students based on level of study

Area of Study	Often	Rarely	Never	Total	χ^2	Df	Sig.	Dec.
Arts	13(68.4)	4(21.1)	2(10.5)	19	0.913	2	.765	Not Sig.

Science	90(56.6)	49(30.8)	20(12.6)	159
VTE	0(0.0)	1(100.0)	0(0.0)	1
Total	103(57.5)	54(30.2)	22(12.3)	179

From the chi-square analysis in table 9, the statement of hypothesis 2 is accepted; implying that there is no significant difference in the use of artificial intelligence in education among health education students in Alvan Ikoku Federal University of Education Owerri based on level of study. This is because, the p-value (Sig. =.765) is greater than the 0.05 alpha level.

Table 9: Chi-square analysis knowledge of artificial intelligence in education among health education students based on gender

Gender	Yes	No	Total	χ^2	df	Sig.	Dec.
Male	15(65.2)	8(34.8)	23	0.936	1	.339	Not Sig.
Female	112(71.8)	44(28.2)	156				
Total	127(70.9)	52(29.1)	179				

From the chi-square analysis in table 10, the statement of hypothesis 3 is accepted; implying that there is no significant difference in the knowledge of artificial intelligence in education among health education students in Alvan Ikoku Federal University of Education Owerri based on gender. This is because, the p-value (Sig. =.339) is greater than the 0.05 alpha level.

Table 10: Chi-square analysis uses of artificial intelligence in education among health education students based on gender

Gender	Often	Rarely	Never	Total	χ^2	df	Sig.	Dec.
Male	12(52.2)	8(34.8)	3(13.0)	23	0.996	1	.061	Not Sig.
Female	91(58.3)	46(29.5)	19(12.2)	156				
Total	103(57.5)	54(30.2)	22(12.3)	179				

From the chi-square analysis in table 11, the statement of hypothesis 4 is accepted; implying that there is no significant difference in the use of artificial intelligence in education among health education students in Alvan Ikoku Federal University of Education Owerri based on gender. This is because, the p-value (Sig. =.061) is greater than the 0.05 alpha level.

Discussion of Findings

The study has generated a collection of information regarding the knowledge and use of artificial intelligence in education among health education students in Alvan Ikoku Federal University of Education Owerri. The finding in table 1 revealed that the respondents were knowledgeable (70.9%) about artificial intelligence in education tools while 29.1% were not. The finding corroborated the finding of Garapati et al. (2024) and Okoye et al. (2025)

who reported that tertiary education students were knowledgeable of artificial intelligence tools that enhance learning. The finding is in contradiction with the finding of Isave (2023) and Guanai and Oribhabor (2023) who reported poor knowledge of artificial intelligence in education tools among university students.

The finding in table 2 revealed that less than half (46.4%) of the respondents used artificial intelligence in education tools often while 53.6% do not. This finding revealed that although the respondents showed good knowledge of artificial intelligence in education, their usage of these AIED tools is poor when compared with their level of knowledge. The finding is in agreement with Alimi et al. (2024) that reported poor usage of artificial intelligence among university students. The finding disagreed with Ventural et al. (2024) whose finding revealed that majority of university students use artificial intelligence tool for academic purposes such as personal learning, grammar checking, conducting research, and improving speaking and writing skills. The variance in the findings may be attributed to the difference in the geographical areas (developed and developing country) where the studies were conducted.

The finding in table 3 showed that students in 400 level were knowledgeable about artificial intelligence in education more than their counterparts in 200 level and 300 level. The finding in on the hypothesis revealed no significant difference in the knowledge of these tools among students of different levels of study. The finding in table 4 showed that female students were knowledgeable of artificial intelligence tool more than males. The test on hypothesis revealed no significant difference in the knowledge of artificial intelligence tools between males and females. This finding is consistent with Onwuagboke et al. (2024) report of no difference in the awareness of AI tools among males and female participants in their study. This result also aligns with Alimi et al. (2021) report of no significant difference in the knowledge of AI tools for learning and research purposes between male and female university students.

The finding on the use of artificial intelligence among students shows that students in 200 level and females use artificial intelligence in education tools more than their counterparts. This finding is supported by Maurat et al. (2025) report of year one students showed high frequency of AI usage more than students in the other years of study. The finding on the hypothesis reveals no significant difference among levels of study and between male and female students. The result is in line with Mogelvang et al. (2024) report but it contradicts Garapati et al. (2024) who revealed that use AI tools was significantly differentiated by year level and gender with males usage of AI higher than their female counterparts.

Conclusion

In conclusion, it is evident from the study that health education students in Alvan Ikoku Federal University of Education are knowledgeable of artificial intelligence in education but not many of them use these tools for their academic purposes. Although the result revealed that students in 400 level and female students were more knowledgeable about AI, students in 200 level and female students use AI more than their counterparts, the

knowledge and use were not significantly differentiated by level of study or gender. Based on the findings, the following recommendations are given:

- i. 1. The university management should organize seminars and workshops each semester to educate students on artificial intelligence in education and how to use them for better academic outcomes.
- ii. Students should access and use artificial intelligence through their smartphones and laptops for academic rather than using these gadgets more for other activities that may distract them academically.

References

- Alimi, A. E., Buraimih, O. F., Aladesusi, G. A., & Babalola, E. O. (2024). University students' awareness of access to, and use of artificial intelligence for learning in Kwara State. *Indonesian Journal of Teaching in Sciences*, 1(2), 91- 104.
- Almusaed, A., Almssad, A. & Yitmen, I. (2023). Enhancing student engagement: Harnessing "AIED" power in hybrid education –a review analysis. *Education Sciences*, 13(7), 1-24.
- Duggal, N. (2023). *What is artificial intelligence: Types, history and future*. <https://www.simplilearn.com/tutorials/artificial-intelligence-tutorial/what-is-artificial-intelligence>
- Fashimirad, M. & Kotamjani, S. S. (2018). A review on application of artificial intelligence in teaching and learning in education contexts. *International Journal of Learning and*
- Fausta, E. & Onyekaba, M. N. (2025). Utilization of artificial intelligence (AI) in the management of tertiary institutions in Nigeria. *Journal of Educational Foundation*, 14(1), 119 – 132.
- Garapati, S., Peetala, S. & Rampatrumi, R. (2024). Artificial intelligence, its knowledge, attitude and perceptions among future health care workforce- undergraduates in a government medical college. *Journal of Population Therapeutics and Clinical Pharamcology*, 31(1), 1452 -1462.
- Guanah, J. S. & Oribhabor, O. (2023). Knowledge and perception of the use of artificial intelligence among undergraduates student so Nnamdi Azikiwe University, Awka, Anambra State Nigeria. *Journal of Multidisciplinary Studies*, 1(4), 1 - <https://isrgpublishers.com/isrgjms/>
- Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial intelligence in higher education: Wiley Promises and implications for teaching and learning*, Center for Curriculum Redesign. ISBN – 13:978-1-974-29370.0.
- Isave, S. G. (2023). A study of the use of artificial intelligence by student –teachers. *E methodology*, 10, 123-134.
- Maurat, J.I.C., Isip, E.V. & Lumabas, A.G.R. (2025). A comparative study of gender differences in the utilization and effectiveness of AI-Assisted learning tools in programming among university students. *Proceedings of the 2024 International Conference on Artificial Intelligence and Teacher Education*, 30-34.
- Mogelvang, A., Bjelland, C., Grassini, S. & Ludvigsen, K. (2024). Gender difference in the use of generative artificial intelligence Chatbots in higher education:

- Characteristics and consequences. *Education Sciences*, 14(12), 1363. <https://doi.org/10.3390/educi14121363>.
- Nwakunor, J. A. (2021). Leveraging artificial intelligence to enhance brandmanagement. *The Guardian Newspaper*.
- Ogunode, N. I. & Gregory, D. M. (2023). Artificial intelligence (AI) in educational administration. *International Journal on Orange Technologies*, 5(10), 7-16.
- Okoye, C. C., Udenwa, V. C., Ikawka, O. I. Chetuya, C. N. & Chineme, A. C. (2025). Awareness and use of artificial intelligence tools for learning of English Language among secondary school students in Awka South L.G.A, Anambra State. *Journal of Theoretical and Empirical Studies in Education*, 9(2), 229 – 238.
- Onwuagboke, B.B.C., Nnajieta, C. C., Nzeako, R. C. &Umune, H.C. (2024). Lecturer's awareness of artificial intelligence tolls for teaching and research in Alvan Ikoku Federal University of Education, Nigeria. *African Journal of Humanities and Contemporary Education Research*, 17, 14.
- Ouyang, F. & Jiao, O. (2021). Artificial intelligence in Education: The three paradigms. *Computers and Education: Artificial Intelligence* 2. <https://doi.org/10.1016/j.jicaeai.2021.100020>.
- Ouyang, F., xu, W. &Cukurova, M. (2023). An artificial intelligence –driven learning analytic method to examine the collaborative problem –solving process from the complex adaptive systems prospective. *International Journal of Computer-supported Collaborative Learning*, 18(1): 39 -66.
- Pinzolit, R. (2024). AI in academic: An overview of selected tools and their areas of application. *MAP Education and Humanities*, 4(1), 37 -50.
- Prem, B. C. (2025). The use of artificial intelligence among university students: A narrative inquiry. *Academic Journal of Humanities and Social Sciences*, 2, 49-61.
- Seo, K., Tang, J., Roll, I., Fels, S. & Toon, D. (2021). The impact of artificial intelligence on learner instruction interaction on online learning. *International Journal of Educational Technology in Higher Education*, 18(1): 54 – 66. <https://doi.org/10.1186/541239-021-00292-9>.
- Ventura – Silva, J., Martins, M. M., Trindade, L. O., Faria, A. O. A, Pereira, S., Zuge, S.S. & Rebeiro, O. M. P. L (2024). *Artificial intelligence in the organization of nursing care: A scoping review*. *Nursing Report*, 14, 2733 – 2745. <https://doi.org/103396/nurserep140402-2>.
- Vieriu, A. M. & Petrea, G. (2025). The impact of artificial intelligence (AI) on students' academic development. *Journal of Education Science*, 15(3), 343. <https://doi.org/10.3390/educsci5030343>.
- Yeung, R. S. K, Tian, R., Chiu, D. K. W. & Choi, S. P. (2025). University students' perception on how generative artificial intelligence shape learning and research practices: A case study in Hong Kong. *The Journal of Academic Librarianship*, 51(5).<https://doi.org/10.1016/j.jalib.2025.101010>.