STUDENTS' PREPAREDNESS FOR DIGITAL PEDAGOGY IN A DISADVANTAGED HIGHER EDUCATION INSTITUTION IN SOUTH AFRICA: KIRKPATRICK'S EVALUATION MODEL

Sandiso NGCOBO
Mangosuthu University of Technology, Durban, South Africa
Sandiso@mut.ac.za

Alfred Mvunyelwa MSOMI
Mangosuthu University of Technology, Durban, South Africa
alfred@mut.ac.za

Abstract
Contemporary youth are frequently characterized as "digital natives" due to their perceived technological proficiency in the artificial intelligence age. This has driven educational institutions to integrate technology into their pedagogical approaches, either fully or in a blended format. However, the current body of research lacks investigation into the impact of self-training, schooling and that provided during orientation at university on students' preparedness for digital education. Available studies have focused on teachers and workers in the corporate environment. To close the gap, this study adopted the Kirkpatrick's Evaluation Model (KEM) to assess students' preparedness for the use of Learning Management System (LMS) platforms, such as Blackboard. A closed-response online questionnaire, hosted on Google's platform, formed the basis of data collection from 424 participants at the beginning of the 2025 academic year in a South African university of technology designated as historically disadvantaged institution. The data indicate that, while some participants exhibit technological preparedness and literacy, a significant number equally require substantial training support exceeding the scope of standard university orientation. This imbalance is because of varying students' schooling and socio-economic backgrounds, which would have disadvantaged students coming from rural areas. The diversity in the technological preparation of new students highlights the critical need for universities to enhance students' technological skills, without generalising their background preparedness, for students' access and success with artificial intelligence tools as they transition to higher education.
Keywords: First-year students, Socio-economic background, Evaluation, Technology, University.
DOI: https://doi.org/10.24818/beman/2025.S.I.5-06

1. INTRODUCTION

Nowadays technology plays a significant role in various aspects of our lives. The recent developments have observed the introduction of artificial intelligence (AI) powered tools that have disrupted teaching and learning practices in higher education (Abbasi et al., 2025; Alangari, 2024; Hughes et al., 2025). The AI

Business Excellence and Management
Volume 15 Special Issue 5 / 2025

generative tools are favoured for their ability to quickly assist students with assignments, create images and analyse data (Peres et al., 2023; Escotet, 2023; Ndaba & Ngcobo, 2024; Tossell et al., 2024). The group that is generally associated with the use of technology is the youth that is often referred to as the digital natives or Generation Z because they tend to be well-informed and up to date when it comes to digital tools (Bhalla et al., 2021; Lissitsa, 2025; Soyupak & Ipek, 2025). This is evident in that young people are mostly active on social media which requires that they own suitable gadgets as smart phones and have access to the internet. Moreover, some businesses across the globe now perform their activities through AI (Marr, 2019; Rashid & Kausik, 2024), even though AI has not yet wholly taken over labour productivity as initially feared (Tuca & Prelipcean, 2024; Zaidi et al., 2025).

This makes it equally important to make use of technology in education where students are being prepared for the business world; be it private or public organisations. Indeed, many universities, especially after being forced by the Covid-19 crisis, have either adopted the blended approach or gone fully digital. In some developing countries such as Pakistan (Iqbal & Ahmad, 2010) and Botswana (Ikpe, 2011) online education has long been adopted as a solution to limited universities and widening access to higher education (Ngampornchai & Adams, 2016). As these changes occur, it means their students are expected to be familiar with different digital tools so they can navigate various learning management systems and search information on the internet to complete educational tasks. Nevertheless, disparities in educational systems and socioeconomic conditions within developing nations create a digital divide, precluding the assumption of universal technological familiarity among university entrants (Afzal et al., 2023; Han & Kumwenda, 2025; Heeks, 2022; Makumane et al., 2023). There is a variation in youth access to and use of emerging technologies which can lead to some students being under-prepared for computer-based learning and requiring support and training in their transition to higher education (Kennedy et al., 2008; Mbodila et al., 2016; Msomi, 2024).

It therefore becomes critical that their comfort levels with technology are evaluated so they can be assisted when the gap is identified. This would be to ensure that they are not further disadvantaged in higher education which could put them at risk of failure or being left behind in their learning. The process would further address matters of equity in society and education. In this respect, equity refers to the fair treatment of all students to avoid differences in educational, economic, social and cultural status (ESCS) interfering with their academic performance (OECD, 2016, 2018). This means that the application of well-informed digital tools in education can academically benefit students from low socioeconomic families by reducing the risks associated with their background (Dengying et al., 2022). The provision of equal access to academic and entertainment information for all students can foster equitable academic performance, although research evidence on this matter remains inconclusive (Dengying et al., 2022). Regardless, assessing students' readiness for digital learning remains crucial. The need for this arises because of

previous research prioritisation of professionals, such as teachers and those working in corporates. Prior research on student evaluations of training has been limited to developed nations, neglecting the unique infrastructural and adoption challenges faced by low- and middle-income countries (LMICs) in e-learning implementation (Barteit et al., 2020). Moreover, this knowledge is important because students' familiarity with technology has been associated with positive attitudes toward blended learning (Domínguez-Figaredo & Gil-Jaurena, 2024). It is for these reasons that this paper investigates the technological literacy of first-year students from disadvantaged socio-economic backgrounds upon entering a historically disadvantaged institution (HDI) of higher education in a black township in South Africa.

2. LITERATURE REVIEW

Technological proficiency is linked to several overlapping concepts used in evaluating comprehension of emerging technologies. Some of these concepts are digital competence, digital proficiency, technology confidence, digital ability and digital literacy which are used when evaluating and assessing individual knowledge of new technologies (Byungura, et al., 2018: 32). Domínguez-Figaredo and Gil-Jaurena (2024) describe knowledge of digital system as the degree to which individuals can naturally interact with components of that system because of their training and experience with technology. Laurillard (2002) and Papanastasiou et al. (2003) concur that familiarity with technology determines success in educational experience. While the current generation is generally viewed as tech-savvy, their level of familiarity and experience with technology have been found to be heterogenous due to variation in ownership, quality of gadgets and access to the internet that are linked to differences in socio-economic background (Byungura, et al., 2018). This therefore makes it necessary to assess students' familiarity with technology when they arrive at public universities in developing countries.

Van der Kleij and Lipnevich's (2021) note several options on methodology for the evaluation of students' familiarity with digital tools, such as surveys, interviews, and observations. The assessment of students' comfort with technology in education involves examining various factors. These can include the evaluation of their needs, socioeconomic status, and educational and home background. Other factors that have been found to contribute to familiarity with technology are age, gender and previous school background. The assessment of these factors can expose vast differences among students. For example, Kunina-Habenicht and Goldhammer (2020) found that boys showed more interest and scored higher that girls when it came to technological activities. Yet, this is not a universal trend because other factors such as the individual's upbringing, educational experiences, and personal interests play a significant role in their attitude and comfort with technology. Individuals with higher socioeconomic status are more likely to own

Business Excellence and Management
Volume 15 Special Issue 5 / 2025

and use digital devices and have access to the internet, thus, leading to increased familiarity with technology. Global trends noted by the World Bank show that there are more females than males enrolled at tertiary level (Bonfert & Wadhwa, 2024). Therefore, evaluating university students' familiarity with technology can be skewed towards females because of their high numbers.

3. THEORETICAL FRAMEWORK

The study sought to utilize a theory or model that would assist in evaluating technologically related learning among the research participants. This would broadly be learning acquired at home, school and on arrival at university. The study refers to this learning as technological literacy and pedagogical backgrounds. Some of the available learning evaluation theories are Kirkpatrick's Evaluation Model (KEM), Kaufman's Model of Learning Evaluation, Anderson's Value of Learning Model, and Brinkerhoff's Success Case Method. Amongst these, the KEM, also known as Kirkpatrick Theory, has emerged as the most preferred one in research because of its objective adoptability in various areas (El Nsouli et al., 2023; Hagene, 2025). Though medical training commonly uses KEM, researchers have also successfully applied it in various contexts of computer science, business, and the social sciences (Alsalamah & Callinan, 2022; San Jose, 2021). Most studies conducted within educational settings have investigated teacher transfer of training (TOT), with the objective of fostering improvements in pedagogical knowledge, attitudes, beliefs, and practices to elevate both teaching excellence and overall institutional performance (Ambu-Saidi et al., 2024). The area that has received less attention is student training, which this paper addresses.

KEM applies to the current research because it explores four areas of learning evaluation. Kirkpatrick and Kirkpatrick (2016) describe the first of their four levels as meant to measure the participants' reaction and satisfaction with received training. The goal is to discover whether participants were satisfied and what obstacles hindered their learning engagement. With the current study, we sought to examine the training and exposure students would have received at home, school and on arrival at university. The purpose of the training evaluation was to determine the participants' preparedness for digital pedagogy. The questions asked were around their thoughts on its relevance and value to their education. Closely related to the first, the second level looks at the training's impact on the confidence and attitude of the participants after receiving training. This requires an assessment of pre-learning and post-learning to determine the effect of training on learners' attitudes, knowledge and skills. This would require a look at students' prior knowledge acquired from home and school together with training during orientation of first-year students to their university pedagogical environment. The third level examines the behaviour change associated with the transferability of learning experiences to their pedagogical environment. This means assessing if students find it easy to apply the gained knowledge and skills in pursuance of their education. Lastly, the fourth level

focuses on the outcomes of training for the institution, the tangible benefits that would make the training to be lauded as having been worthwhile in terms of return on investment (Ambu-Saidi et al., 2024; Hagene, 2025). For example, an evaluation of a two-year research enhancement program for Indian undergraduate medical students, through the KEM framework, indicated significant gains in participants' cognitive understanding, perspectives, and competencies. The program's assessment showed that it facilitated effective student research, contributing to a rise in the university's prestige (Rao et al., 2024).

4. METHODOLOGY

A web-based Google survey form was deployed as a research strategy to gather factual information from students. The questionnaire had closed -ended statements (Denscombe, 2010; Cohen, Manion and Morrison 2013) that were developed and distributed to the population of first-year students. The questionnaire was developed to evaluate the degree of ownership, access, use and previous experience with technology for first-year students. The Kirkpatrick's Evaluation Model's four levels guided the sequence of statements the participants had to respond to. This instrument was composed of two main sections: participants' demographic information and technological literacy and pedagogical experiences evaluation. The distributed questionnaire received responses from 424 participants at a historically disadvantaged South African university of technology during the early stages of the 2025 academic year. Participants were given three choices from which to select responses to given statements: agreement, disagreement, or a neutral stance.

Prior to distributing the questionnaire, it was tested and validated by the research collaborator and a lecturer with powerful experience in educational technology. Additionally, two tutors familiar with the use of learning management systems, Blackboard, were asked to complete and comment on the quality of the questionnaire and its fitness for purpose. The designers of the questionnaire carefully considered all their comments and suggestions. As this research built upon a previously approved project, supplemental ethical approval was not pursued.

5. FINDINGS AND DISCUSSION

5.1 Biographical data

The questionnaire began with an inquiry on participants' background. The method was based on the scholarly consensus that assessments of technological familiarity should account for multiple personal

Business Excellence and Management
Volume 15 Special Issue 5 / 2025

contextual variables of participants. Hence, the study's inquiry on gender revealed that most of the participants were females (64.2%), as shown in Figure 1.

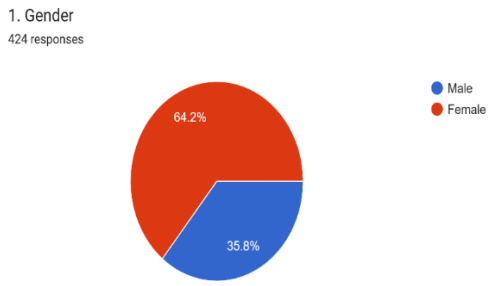

FIGURE 1. GENDER
Source: Authors' research

The documented higher female-to-male student ratios on campuses both domestically and internationally during this period (Bonfert & Wadhwa, 2024) readily explain this result. Therefore, the results on technological familiarity challenge the perception, suggested by Kunina-Habenicht and Goldhammer (2020), that boys are more technologically proficient than girls. Rather, it depends on the sample and the socio-economic background of the participants. The age group evaluation showed that 51% were between 17 and 19 and 39.6% were in the 20-22 group. This age range defines the group described as digital natives or Gen Zs that were the target of the study.

The evaluation of socio-economic backgrounds included questions pertaining to the type of school attended and its area, family financial circumstances and funding for university studies. Table 1 displays the combined results.

TABLE 1. SOCIO-ECONOMIC BACKGROUND

Type of school	School area	Family finances	University funding
Public: 97.2%	Rural: 64.8%	Low: 71.7%	Bursary: 85%
Private: 2.8%	Urban: 35.2%	Middle: 28.3%	Parents: 15%

Source: Authors' research

A significant majority of participants (97.2%) selected public schools, a substantial proportion of which (64.8%) were located in rural areas. Participants reported low-income household status (71.7%), consistent with their indication that the majority (85%) of their university fees were covered by the South African National Student Financial Aid Scheme (NSFAS), a government bursary scheme. From the outset, the results revealed significant socioeconomic disadvantages among the participants. Their limited exposure to technology at home and school points to their vulnerability as victims of the digital divide (Afzal et al., 2023; Han & Kumwenda, 2025; Heeks, 2022; Makumane et al., 2023).

5.2 Training evaluation

The researchers' first level of questions inquired about students' attitudes toward the training and exposure they received at home, school, and the workshop they attended during university orientation. Table 2 displays the outcome of the investigation.

TABLE 2. ATTITUDES TO TRAINING

	Borrow gadgets	Free Wi-Fi	School technology	University training
Agree	60.4%	13%	28%	49%
Disagree	39.4%	87%	72.3%	51%

Source: Authors' research

To inquire about the participants' preparedness with technology, the first question was on how they applied to study at the university. They were provided with a statement which suggested that they used someone else's phone or computer to apply online. The survey revealed that 60.4% of participants agreed that they had to borrow other people's gadgets. This shows that they did not possess a personal computer or smartphone during their final year of studies. This response corroborates the preceding analysis of socioeconomic background, indicating that most participants received state funding. Allocated funding for books and stationery has facilitated students' acquisition of computers or smartphones, representing a first-time experience for a significant number. The results suggest an inadequate self-training on digital tools. The next set of statements were on exposure received at school, which would have provided training on pedagogical digital tools. On the statement that asked about their access to free Wi-Fi before joining the university, it emerged that 87% had not had access to complimentary Wi-Fi. This again shows limited self-training on digital tools. In line with these responses, an overwhelming 72.3% disagreed that they used educational tools at school. Understandably, 51% did not find the training provided by the university during the orientation period to be adequate. The training evaluation reveals a negative perception attributable to insufficient digital resources and connectivity.

The second level drew from two questions to examine the prior training's impact on the participants' confidence and attitude, as shown in Table 3.

TABLE 3. TRAINING'S IMPACT ON CONFIDENCE

	Pedagogical tools	LMS use challenges
Agree	32%	48%
Disagree	68%	52%

Source: Authors' research

The survey responses indicated that a significant majority (68%) lacked confidence in utilizing digital pedagogical tools. Forty-eight percent of participants reported persistent challenges using the learning management system. The negative findings align with the responses to the first level statements, indicating insufficient training stemming from participants' socioeconomic backgrounds.

Business Excellence and Management
Volume 15 Special Issue 5 / 2025

The third level examined the behaviour change associated with the transferability of learning experiences to their online learning environment, as displayed in Table 4.

TABLE 4. BEHAVIOUR CHANGE

	Regular use of technology	Positive experience
Agree	89%	81%
Disagree	11%	19%

Source: Authors' research

The statement on their regular use of technology to facilitate their learning and search of information drew a favourable response of 89%. A substantial majority (81%) reported positive experiences using educational tools. Although previous responses revealed inadequate training and skills, they nonetheless adopted technology to further their education. This correlation may be attributed to the improved university setting, providing access to digital resources and complimentary Wi-Fi. Our findings are consistent with earlier studies which established that digital natives favour the use of technology within educational contexts (Ndaba & Ngcobo, 2024; Bhalla et al., 2021; Lissitsa, 2025; Soyupak & Ipek, 2025).

The last level of statements focused on the outcomes of training for the higher education institution that formed the site of the reported study, as shown in Table 5.

TABLE 5. OUTCOMES OF TRAINING

	Learning benefits	Academic performance
Agree	82%	86%
Disagree	18%	14%

Source: Authors' research

The statement advocating for technology's beneficial role in learning achieved an 82% positive response rate among participants. The efficacy of the training in improving participant learning should result in excellent university outcomes at the conclusion of their studies. Notably, a significant majority (86%) of participants agreed with the statement which alluded that digital pedagogy would positively impact their academic performance.

6. CONCLUSION

The four-level Kirkpatrick model provided a valuable framework for evaluating training within this study, which was undertaken at a South African public university in a historically disadvantaged institution. It emerged that a significant proportion of students enrolled at the investigated institution come from challenged socioeconomic backgrounds. This points to their limited previous exposure to technology. The resulting struggle with digital tools in higher education causes participants to perceive their training as inadequate which affects their confidence in the use of LMS's. Yet, they have embraced artificial intelligence in education because of its benefits and the enabling university environment. They are also optimistic that the use of digital pedagogical tools would enhance their academic performance. The

diversity in the technological preparation of new students highlights the critical need for universities to enhance students' technological skills, without generalising their background preparedness, for students' access and success with artificial intelligence tools as they transition to higher education. It is incumbent upon lecturers to provide supplemental instruction to students whose academic preparedness has been compromised by socioeconomic factors. The technological literacy and training of digital natives in developing nations are shaped by their socioeconomic backgrounds. The role of universities' training in advancing equity within society and education warrants further investigation.

REFERENCES

Abbasi, B. N., Wu, Y. & Luo, Z. (2025). Exploring the impact of artificial intelligence on curriculum development in global higher education institutions. Education and Information Technologies, 30(1), 547-581. https://doi.org/10.1007/s10639-024-13113-z.

Afzal, A., Khan, S., Daud, S., Ahmad, Z. & Butt, A. (2023). Addressing the digital divide: Access and use of technology in education. Journal of Social Sciences Review, 3(2), 883-895. https://doi.org/10.54183/jssr.v3i2.326.

Alangari, H. (2024). Disrupting education: Artificial intelligence in higher education. In The Evolution of Artificial Intelligence in Higher Education: Challenges, Risks, and Ethical Considerations (pp. 63-81). Emerald Publishing Limited. Leeds. https://doi.org/10.1108/978-1-83549-486-820241004.

Alsalamah, A. & Callinan, C. (2022). The Kirkpatrick model for training evaluation: bibliometric analysis after 60 years (1959–2020). Industrial and Commercial Training, 54(1), 36-63. https://doi.org/10.1108/ICT-12-2020-0115.

Ambu-Saidi, B., Fung, C.Y., Turner, K. & Lim, A.S.S. (2024). A critical review on training evaluation models: A search for future agenda. Journal of Cognitive Sciences and Human Development, 10(1), 142–170. https://doi.org/10.33736/jcshd.6336.2024.

Barteit, S., Guzek, D., Jahn, A., Bärnighausen, T., Jorge, M. M. & Neuhann, F. (2020). Evaluation of e-learning for medical education in low-and middle-income countries: A systematic review. Computers & Education, 145, 103726. https://doi.org/10.1016/j.compedu.2019.103726.

Bhalla, R., Tiwari, P. & Chowdhary, N. (2021). Digital natives leading the world: paragons and values of Generation Z. In Generation Z marketing and management in tourism and hospitality: The future of the industry (pp. 3-23). Cham: Springer International Publishing. Retrieved April 19, 2025, from: https://link.springer.com/chapter/10.1007/978-3-030-70695-1_1.

Bonfert, A. & Wadhwa, D. (2024). Tracing global trends in education: A tale of old and new gender gaps. World Bank Group. Retrieved April, 14, 2025, from: https://genderdata.worldbank.org/en/data-stories/a-tale-of-old-and-new-gender-gaps.

Byungura, J. C., Hansson, H., Muparasi, M. & Ruhinda, B. (2018). Familiarity with technology among first-year students in Rwandan tertiary education. The Electronic Journal of e-Learning, 16(1), 30-45. Retrieved March, 29, 2025, from: www.ejel.org.

Business Excellence and Management
Volume 15 Special Issue 5 / 2025

Dengying, C., Kwok Cheung, C., Pou Seong, S. & Man Kai, L. (2022). Examining the impact of students' familiarity with information and communications technology on education equity using data from students in four provinces and cities in China, Chinese/English Journal of Educational Measurement and Evaluation, 3(3), 3. https://doi.org/10.59863/KOWF1981.

Domínguez-Figaredo, D. & Gil-Jaurena, I. (2024). Effects of familiarity with digital assessment in online education, Distance Education, 46(2), 301-317. https://doi.org/10.1080/01587919.2024.2372260.

El Nsouli, D., Nelson, D., Nsouli, L., Curtis, F., Ahmed, S. I., McGonagle, I. & Ahmadi, K. (2023). The application of Kirkpatrick's evaluation model in the assessment of interprofessional simulation activities involving pharmacy students: a systematic review. American Journal of Pharmaceutical Education, 87(8), 100003. https://doi.org/10.1016/j.ajpe.2023.02.003.

Escotet, M. Á. (2024). The optimistic future of artificial intelligence in higher education. Prospects, 54, 531-540. https://doi.org/10.1007/s11125-023-09642-z.

Hagene, E. (2025). Kirkpatrick model: How to use it in your training business. Training management blog. Retrieved April, 14, 2025, from: https://frontcore.com/blog/kirkpatrick-model-how-to-use-it-in-your-training-business/.

Han, S. P. & Kumwenda, B. (2025). Bridging the digital divide: Promoting equal access to online learning for health professions in an unequal world. Medical Education, 59(1), 56-64. https://doi.org/10.1111/medu.15455.

Heeks, R. (2022). Digital inequality beyond the digital divide: conceptualizing adverse digital incorporation in the global South. Information Technology for Development, 28(4), 688-704. https://doi.org/10.1080/02681102.2022.2068492

Hughes, L., Malik, T., Dettmer, S., Al-Busaidi, A. S. & Dwivedi, Y. K. (2025). Reimagining higher education: Navigating the challenges of generative AI adoption. Information Systems Frontiers, 1-23. https://doi.org/10.1007/s10796-025-10582-6.

Kirkpatrick, J. D. & Kirkpatrick, W. K. (2016). Kirkpatrick's four levels of training evaluation. Association for Talent Development. Retrieved April, 14, 2025, from: https://books.google.com/books?hl=en&lr=&id=mo--DAAAQBAJ&oi=fnd&pg=PT10&ots=LOGdTMklUv&sig=5E4xgklYi1HF4TSLb1zEDz8ivFY.

Kunina-Habenicht, O. & Goldhammer, F. (2020). ICT engagement: A new construct and its assessment in PISA 2015. Large-scale Assessment in Education, 8, 1-21.

Laurillard, D. (2002). Rethinking university teaching: A framework for the effective use of educational technology (2nd ed.). Routledge.

Lissitsa, S. (2025). Generations X, Y, Z: the effects of personal and positional inequalities on critical thinking digital skills. Online Information Review, 49(1), 35-54. https://doi.org/10.1108/OIR-09-2023-0453.

Makumane, M. A., Mataka, T. W., Sengai, M. & Ngcobo, S. (2023). Neutralising the digital divide: Is blended learning a viable solution?. International Journal of Research in Business & Social Science, 12(7), 511-522. https://doi.org/10.20525/ijrbs.v12i7.2740.

Marr, B. (2019). Artificial intelligence in practice: How 50 successful companies used AI and machine learning to solve problems. John Wiley & Sons.

Msomi, A. M. (2024). Lecturers' experiences in the integration of technology in teaching and learning in the context of an ICT-challenged environment: The case of a South African university of technology. In Online Teaching and Learning in Higher Education: Issues and Challenges in an African Context

(pp. 11-30). Cham: Springer Nature Switzerland. Retrieved March 22, 2025, from: https://link.springer.com/chapter/10.1007/978-3-031-56953-1_2.

Ndaba, N. E. & Ngcobo, S. (2024). Undergraduates' CHATGPT dependence as an effective tool for learning in South Africa. Business Excellence and Management, 14(S.I.4), 5-18. https://doi.org/10.24818/beman/2024.S.I.4-01.

Ngampornchai, A. & Adams, J. (2016). Students' acceptance and readiness for E-learning in Northeastern, Thailand. International Journal of Educational Technology in Higher Education, 13, 34. https://doi.org/10.1186/s41239-016-0034-x.

Organization for Economic Cooperation and Development (OECD) (2016). PISA 2015 results (volume I): Excellence and equity in education. OECD Publishing.

Organization for Economic Cooperation and Development (OECD) (2018). Equity in education: Breaking down barriers to social mobility. OECD Publishing.

Papanastasiou, E. C., Zembylas, M. & Vrasidas, C. (2003). Can computer use hurt science achievement? The USA results from PISA. Journal of Science Education and Technology, 12(3), 325–332. https://doi.org/10.1023/A:1025093225753.

Peres, R., Schreier, M., Schweidel, D. & Sorescu, A. (2023). On ChatGPT and beyond: How generative artificial intelligence may affect research, teaching, and practice. International Journal of Research in Marketing, 40(2), 269-275. https://doi.org/10.1016/j.ijresmar.2023.03.001.

Rao, S., Yagade, Y., Ambike, A., Desai, A., Kundawar, A., Mulkalwar, A. & Tripathi, R. (2024). Evaluation of student-led "Association for Support and Propagation of Innovation, Research, and Education" (ASPIRE) in empowering undergraduate medical students in research: A 2-year longitudinal study. Perspectives in Clinical Research, 15(4), 213-214. https://doi.org/10.4103/picr.picr_25_24.

Rashid, A. B. & Kausik, A. K. (2024). AI revolutionizing industries worldwide: A comprehensive overview of its diverse applications. Hybrid Advances, 7, 100277. https://doi.org/10.1016/j.hybadv.2024.100277.

San Jose, A. (2021). Translating theory into practice: the gender and development training evaluations using the Kirkpatrick's model. Proceedings of the International Conference on Social and Islamic Studies. Available at SSRN, 3908296.

Soyupak, O. & Ipek, H. (2025). Exploring user experience and usability of mobile and open banking for digital natives in Turkiye. Qualitative Research in Financial Markets, Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/QRFM-02-2024-0051.

Tuca, A. M. & Prelipcean, G. (2024). The relationship between AI and labor productivity-myth or reality. Business Excellence and Management, 14(4), 43-58. https://doi.org/10.24818/beman/2024.14.4-04.

Van der Kleij, F. M. & Lipnevich, A. A. (2021). Student perceptions of assessment feedback: A critical scoping review and call for research. Educational Assessment, Evaluation and Accountability, 33(2), 345–373. https://doi.org/10.1007/s11092-020-09331-x.

Zaidi, S. Y. A., Aslam, M. F., Mahmood, F., Ahmad, B. & Raza, S. B. (2025). How will artificial intelligence (AI) evolve organizational leadership? Understanding the perspectives of technopreneurs. Global Business and Organizational Excellence, 44(3), 66-83. https://doi.org/10.1002/joe.22275.