

USAGE OF GENERATIVE AI IN SECONDARY SCHOOL EDUCATION: A CASE OF ABC INTERNATIONAL SCHOOL IN GAMPAHA DISTRICT, SRI LANKA

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Abstract

This study explored the integration of Generative Artificial Intelligence (GenAI) in secondary education through a case study of ABC International School in Sri Lanka's Gampaha District, Sri Lanka. The research explored how GenAI is currently used by teachers, the challenges faced and strategies that can be used for effective integration. Theoretical frameworks like Bruner's constructivist principles emphasize learner readiness, structured teaching, and extrapolation, aligning with GenAI's capacity to scaffold learning. A qualitative case study approach was employed, utilizing semi-structured interviews. A thematic analysis approach with open coding was employed for interpreting findings. Key findings of this study aligned with Bruner's constructivist principles whereas institutional policies, teacher perceptions and content limitations emerged as mediating factors. The research advocates for comprehensive teacher training programs, national policies regulating ethical GenAI use, and hybrid assessment models that accommodate digital literacy. These recommendations aim to guide policymakers and educators in creating equitable, innovative learning environments prepared for an AI-driven future.

Keywords: Case study, constructivism, GenAI, secondary education, teacher perspectives

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Introduction

Generative Artificial Intelligence (GenAI) is a rapidly transforming technology capable of offering new avenues in education (Lee & Low, 2024). The usage of GenAI in education is a dilemma where it is seen as a tool for improved educational outcomes, while concerns about potential misuse exist (Belkina et al., 2025). While existing global research on GenAI examines the potential setbacks and benefits of GenAI, most of them focus on tertiary education or informal education whereas secondary education remains comparatively under-examined (Pei et al., 2025). However, secondary education serves as a crucial bridge between primary and tertiary education, playing a vital role in individual and national development (Walia & Randhawa, 2015). Further, secondary education differs majorly from tertiary education in term of purpose, curriculum, assessments, teaching strategies and skills emphasized (Gueudet, 2008). In addition, a formal secondary school classroom is bounded by teacher perceptions, institutional policies and parental involvement at a comparatively higher rate when compared to tertiary education. Accordingly, these key differences highlight the need of unique study in secondary school level.

In the Sri Lankan context, the usage of GenAI remains minimal given the constraints in infrastructure, strategic expertise and the lack of data strategy and data governance framework (Ministry of Digital Economy, 2024). Simultaneously, the global educational landscape is transforming (Jayasinghe, 2024). It becomes mandatory to re-evaluate the current teaching/ learning practices and educational policies that exist to match the momentum of the global landscape. The Sri Lankan education system is a mixture of international schools and government funded public schools. International schools as opposed to public schools poses greater flexibility in terms of access to technology and infrastructure. Further, the international curriculum followed makes it the ideal case to test on how upcoming technologies transform the educational landscape given the local context. Thus, through the exploration of GenAI integration in international schools and the challenges faced, state policies can be reformed and brought forward to expedite the adoption of GenAI throughout the educational system through the strategic recommendations identified.

Guided by Bruner's constructivist principles of learner readiness, structured teaching, and extrapolation, this study explores how secondary-level teachers in a Sri Lankan international school integrate GenAI into their teaching practices. Using a qualitative case study approach, the research explores (1) how teachers integrate GenAI into pedagogical practice, (2) the challenges they encounter, and (3) strategies to enhance responsible and effective use. Through this focus, the paper aims to contribute to both the local discourse on AI in education and the broader understanding of GenAI integration in developing-country contexts.

Literature Review

Usage of GenAI

With GenAI's increasing multidisciplinary capabilities, disruptive innovations, and automation of even traditionally creative tasks, individuals and businesses can innovate and stand out in the highly competitive economic landscape (Banh & Strobel, 2023). Given GenAI's outstanding accomplishments, many people think it will result in a new era of GenAI and have a significant global influence (Cao et al., 2023). Despite the fact that there is potential in using GenAI for transforming a variety of sectors, the incorporation of this technology brings a number of problems such as inequality in terms of access and ethical questions, particularly bias, data privacy, and the risk of overreliance on AI-generated content (Shen et al., 2023). The fast pace of GenAI development leaves regulatory rules far behind causing a gap between creativity and control.

Education

The way that education is offered and experienced could be completely transformed by AI technologies like GenAI and personalised learning experiences (Abunaseer, 2023). GenAI aids teaching by producing information that is suited to the needs of the students, improving their comprehension and level of involvement and creating content that is in line with current curriculum and standards (Greenhow et al., 2022). However, problems that persist in GenAI such as biases, limited diversity in learning resources and ethical concerns limits the potential of GenAI integration in learning. Concerns about the credibility of assessments, specifically in relation to academic integrity and plagiarism, have been voiced by those opposed to the use of GenAI in education (Beckingham et al., 2024). However, the potential of GenAI to improve higher-order thinking, creativity, and active learning is one of the main opportunities mentioned in studies (Khlaif et al., 2025). Researchers recommend that assessment tasks be made more difficult for GenAI tools to do in order to make them "AI-resistant"(Moorhouse et al., 2023).

Learner readiness

Learner readiness is frequently used to describe a student's capacity to seek information and initiate modifications to their behaviour in order to achieve successful learning outcomes (Chorrojprasert, 2020). Through a thorough literature search, the study also confirms an 8% contribution of learner readiness in student outcomes and a 56.2% contribution towards student interaction. GenAI can serve as an important tool in the classroom throughout the teaching-learning process to build learner readiness and motivate learners as per the studies of Moundridou et al. (2024). However, technological readiness comes forth as an important factor in learner readiness when integrating GenAI in education (Moorhouse, 2024).

Structured teaching

The cornerstones of Bruner's theory Scaffolding and Spiral Curriculum aids students develop their critical thinking and problem-solving abilities so they can get used to a variety of contexts, rather than simply imparting facts (Chand, 2023). The spiral curriculum involves organising the material so that difficult concepts could be taught at a basic level first and then revisited at a more advanced level later whereas scaffolding involves the educator 'controlling' the parts of the activity that are first more challenging for the learner (Gonulal & Loewen, 2018). A study conducted by Chien et al. (2024) claims that GenAI can offer instant feedback on engaging scaffolding that can be employed as tutors to aid learning. However, the inconsistencies, inaccuracies and misjudgements provided by GenAI models require caution and over-reliance of students on the GenAI model for every task required the close study in the importance of fading as suggested by Bruner (1960), even when using GenAI for scaffolding.

Extrapolation

In learning, extrapolation are conclusions derived from previously established information points that go beyond the information at hand. In simple terms, it is "Informed speculation" (Watts, 2021). Teachers can forecast future performance and recognise learners through that might need more support or intervention by using GenAI algorithms to analyse student data (Maulana et al., 2023). Another application of extrapolation in education is when a student uses previously learned information and applies it to a new situation. There is a threat that GenAI can centre on novelty over accuracy, leading to the generation of content that is misleading or incorrect. Also, students should be trained to critically evaluate AI-generated content and be conscious of its potential biases and limitations.

Methodology

The researcher follows an interpretivist stance on reality and knowledge and therefore follows Qualitative methods for this study. A case study strategy was used to research the case within its real-life context. Accordingly, the study was being conducted in an international school within Gampaha District. Convenience sampling, while not ideal in every scenario, became necessary here due to logistical challenges and the researcher relied on volunteers from the school's staff and who were readily available and willing to share their experiences. Data saturation was reached after the seventh interview, where no new codes or themes emerged, indicating adequacy of the sample size for exploratory qualitative research.

Further, institutional restrictions on classroom observation and data access limited triangulation of data although it reflects the real-world scenario when conducting research in a private institution. However, rich and detailed qualitative data were obtained through semi-structured interviews via Zoom with seven teachers representing different subject areas and levels of experience. This diversity enabled triangulation across participant perspectives. All interviews were recorded with consent, and an audit trail was maintained to ensure the transparency and traceability of the research process. Focusing on a single case with a small dataset provides in-depth insights but limits generalizability, reduces diversity of perspectives, increases context-specific bias, and restricts the ability to compare findings across different schools or capture evolving practices.

Table 1
Teacher demographics

	Gender	Years of Experience	Subject Taught	Grades Taught	Familiarity with AI Tools
Teacher A	Female	9	English	Grade 6	ChatGPT, Black Box AI
Teacher B	Female	10	Maths	Grade 7	ChatGPT, Anyword
Teacher C	Female	18	History and Geography	Grade 8	ChatGPT, Claude AI, Seek AI
Teacher D	Female	12	Life Skills	Grade 6,7,8	ChatGPT-4
Teacher E	Female	1.5	Computer Science	Grade 8	ChatGPT
Teacher F	Female	8	Maths	Ordinary Level	ChatGPT
Teacher G	Female	8	Commerce	Grade 8	ChatGPT, Magic School

(Source: Authors, based on survey results)

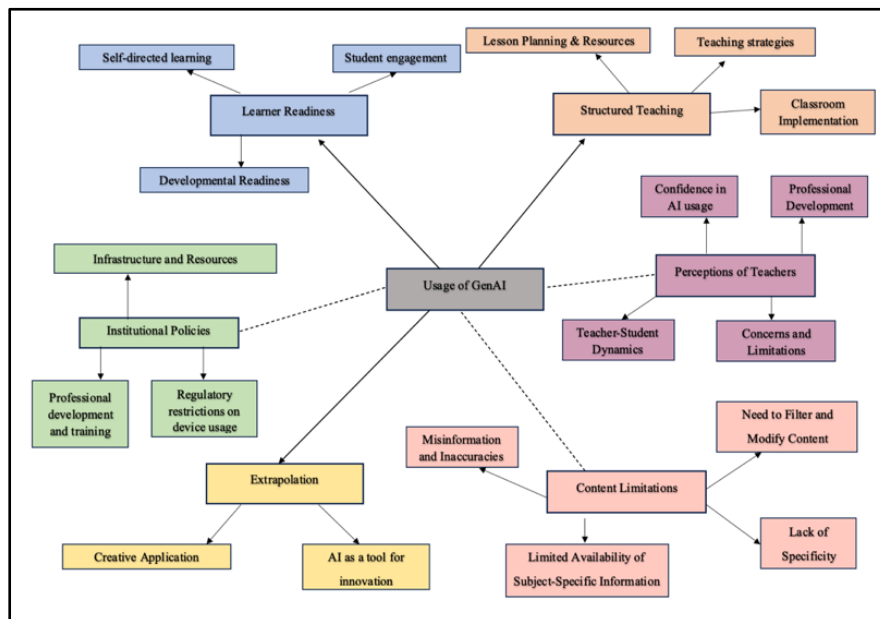
All interviews were transcribed verbatim and coded line-by-line manually using an open thematic analysis. A manual coding approach was adopted as the dataset was comparatively small and allowed deep immersion in the text allowing to interpret data within the context. Initial codes were generated through the gathered data while sensitising concepts derived from Bruner’s constructivist framework guided the organization to broader themes. Although the coding was conducted by the researcher the entire process was continuously reviewed by the corresponding author to ensure consistency and academic rigor.

This study followed an internal ethical protocol where all participants were consenting adult teachers who provided written and verbal informed consent and were assured of confidentiality and the right to withdraw at any time. The research involved interviews on professional experiences only, with no sensitive personal data collected.

Results and Analysis

The findings are organized under four key areas that align with the research questions.

Figure 1
Conceptual Framework



(Source: Developed by authors based on literature (2025))

Integration of GenAI in teaching practices

The findings on the integration of GenAI is presented under 3 key themes as per Bruner’s Constructivism theory.

Learner readiness: The interviews suggest that many students, particularly those in secondary education, are developmentally prepared to benefit from GenAI integration as the teacher mentions “*they directly go and get the answers from GenAI.*” However, at this developmental stage while cognitive abilities are maturing, emotional and behavioral regulation are still evolving. The need for adult supervision or structured guidance is critical to ensure that GenAI is used ethically and constructively.

Structured teaching: Teachers reported that GenAI tools such as ChatGPT have become valuable aids in lesson preparation, particularly for generating creative ideas, structuring content, and modifying activities to suit different learning needs. GenAI tools have also enabled teachers to diversify their teaching methods through innovative teaching strategies and engaging learning materials.

Extrapolation: Teachers indicated that using GenAI opens up creative avenues that allow both teachers and students to generate ideas beyond the limits of traditional curricula. Teacher C reinforces, “*If we did not have this, then we will only have the knowledge of what we have learned years ago.*” Teachers also noted that GenAI acts as a support for innovation by providing access to information and ideas that are not readily available through traditional sources.

Challenges faced in using GenAI for teaching

Institutional policies have significantly limited the effective integration of GenAI in teaching practices. Two primary concerns emerged from the interviews: restrictions on device usage and the absence of GenAI training for teachers. Teacher perceptions regarding the integration of GenAI reflect a combination of optimism and concern. Teachers expressed concerns about the risks of over-reliance on GenAI, and its potential to hinder essential skills such as critical thinking and problem-solving. Further, several content-related limitations (ex: History and Sinhala Language) that hinder effective integration has been encountered.

Strategies to enhance effective use of GenAI

The data brought forth important strategies in terms of institutional policies and the perceptions of teachers. The teachers advocated for formal professional development, curricular alignment to treat GenAI as a teaching/learning aid and the creation of localized GenAI platforms. Findings also revealed the need of policy reformations for device usage and access to appropriate tools.

Discussion of Findings

Integration of GenAI in teaching practices

Learner readiness: Teachers noted that students possess a natural inclination toward independent learning aligning with Bruner’s concept of readiness. However, a key finding reported high levels of student initiative, others observed that not all students were equally prepared to take full advantage of GenAI without teacher guidance. This discrepancy may be due to differences in individual learning backgrounds or varying levels of technological exposure, suggesting that learner readiness in the context of GenAI is multifaceted and influenced by factors such as prior experience and personal motivation (Hung et al., 2010). In addition, it also highlights the importance of emotional and digital readiness in an AI-mediated classroom (Iddrisu & Iddrisu, 2025). Accordingly, this highlights that readiness in a Sri Lankan classroom learner readiness expands beyond cognitive maturity where socio-economic factors such as access to technology and digital literacy play a major role as well.

Structured teaching: A key finding was the variability in how teachers employed GenAI tools. This aligns with Bruner’s notion of structured teaching or scaffolding where teachers gradually withdraw support to encourage independent learning (Gonulal & Loewen, 2018). Lower-secondary teachers integrated GenAI seamlessly as a resource for generating diverse teaching tools assuming an active role in structuring teaching whereas upper secondary teachers expressed the usage of GenAI for generating additional notes, allowing students to regulate their learning. Thus, the role of GenAI in structured teaching is clear however it is mediated by existence of institutional policies, the perceptions of individual teachers and inaccuracies encountered in GenAI software.

Extrapolation: A major finding in this area is the contribution of GenAI for professional development. The teachers mentioned that through GenAI they were able to learn new strategies and approaches to teaching that were not captured during their training period. However, the true potential of GenAI in extrapolation for applications such as forecasting student grades were not observed at ABC international school (Rafiq et al., 2025). Harnessing this power, especially in a Sri Lankan context where student dropouts remain high, would allow teachers and policy makers to take prior action and direct support to where it is needed (Mayadunne & Kariyasekera, 2021).

Challenges faced in using GenAI for teaching

Institutional policies: The study’s findings indicate that institutional policies are a significant factor affecting the integration of GenAI in teaching practices. Teachers reported the existence of restrictions on device usage without clear guidance on GenAI usage or restrictions on GenAI usage. The absence of institutional scaffolding aligns with Bruner’s principle of scaffolding, in the context of teachers here. Absence of institutional support in the form of training and clear policies on GenAI usage hinders teacher autonomy in adopting these technologies (Meli et al., 2024). This reality serves as a microcosm of broader national realities where digital transformation efforts are poorly implemented. National level policies should scaffold schools and teachers to structure their AI policies with actionable mechanisms such as training, ethical guidelines and curriculum reformation.

Perceptions of teachers: Teacher perceptions are a strong mediating factor in integrating GenAI for teaching. However, teachers expressed concerns where easy access to GenAI may limit critical thinking and promote academic dishonesty. These concerns were expressed by teachers globally (Chaudhuri & Petkovic, 2025), but the strong exam-centred culture and traditional passive teaching present in Sri Lankan classrooms fuel these concerns (Hettihewa & Karunathilake, 2015). By preparing the education system through training programs and ethical frameworks, this could transform apprehension to informed confidence.

Content limitations: Teachers shared their experience of situations where GenAI lacked specific information in subjects such as Sri Lankan History and Sinhala. The teachers mentioned that GenAI is capable of providing general information, but accurate in-depth information was inaccurate. This highlights the limitations that arise due to the training data used in training GenAI. Further, GenAI models reflect the biases present in their training data, which can lead to culturally or regionally inappropriate content. Similar concerns were observed in other non-western contexts as well.

Strategies to enhance effective use of GenAI

The enhancement of effective GenAI usage requires reforms at both national level and institutional level. National level policies would facilitate the foundation while institutional policies would provide teachers and students with the required scaffolding. The following framework represents how GenAI usage can be extended island-wide with relevant and equitable technology.

Table 2
Institutional and National level strategies for effective usage of GenAI

Institutional level	National level
Adopting national policies for ethical usage	Implementing a national AI Policy and Guidelines
Infrastructure and access	Development of a localised GenAI platform better suited for education with culturally relevant content
Teacher training & Capacity building	Teacher and Researcher Collaboration
Ethical and critical literacy for students	Infrastructure and access
	Monitoring and updating curriculum

(Source: Authors, based on survey results)

Conclusion

The results show that GenAI is used by teachers mostly as a supplementary tool for strengthen activities like learner readiness, structured teaching, and extrapolation. In a practical scenario, educators use GenAI in lesson planning, development of resources, and generating new content. Most importantly, it was clearly observed that teachers failed to make use of GenAI to its maximum potential owing to gaps in teacher training, institutional policies and content limitations. Teachers also shared a cautious positive perspective on the future of GenAI. They emphasized that there should be continuous professional training to foster digital literacy and inform students about the ethical usage of GenAI. Teachers also supported the creation of authoritative national-level policies to identify ethical limits and standard protocols for GenAI adoption which would be ideal grounds for future research. Further, teachers also mentioned the need of exposing students to technologies but placing boundaries and limitation to ensure responsible usage. This study’s value lies in its contextualized empirical insights and actionable recommendations rather than in theoretical novelty. By evidencing how global GenAI systems interact with local curricula, languages, and institutional constraints, the paper provides a foundation for future theory-building and locally grounded AI design.

References

- Abunaseer, H. (2023). The Use of Generative AI in Education: Applications, and Impact. *Technology and the Curriculum: Summer 2023*.
- Banh, L., & Strobel, G. (2023). Generative artificial intelligence. *Electronic Markets*, 33(1), 63. <https://doi.org/10.1007/s12525-023-00680-1>
- Beckingham, S., Lawrence, J., Powell, S., & Hartley, P. (2024). *Generative AI and the implications for authentic assessment*. Routledge. <https://doi.org/10.4324/9781003482918>
- Belkina, M., Daniel, S., Nikolic, S., Haque, R., Lyden, S., Neal, P., Grundy, S., & Hassan, G. M. (2025). Implementing generative AI (GenAI) in higher education: A systematic review of case studies. *Computers and Education: Artificial Intelligence*, 8, <https://doi.org/10.1016/j.caeai.2025.100407>
- Bruner, J. S. (1960). *The process of education*. Harvard University Press.

- Cao, Y., Li, S., Liu, Y., Yan, Z., Dai, Y., S. Yu, P., & Sun, L. (2023). A Comprehensive Survey of AI-Generated Content (AIGC): A History of Generative AI from GAN to ChatGPT. *Journal of the ACM*, 37(4).
- Chand, S. (2023). Constructivism in education: Exploring the contributions of Piaget, Vygotsky, and Bruner. *International Journal of Science and Research (IJSR)*, 12(7), 274–278. <https://doi.org/10.21275/SR23630021800>
- Chaudhuri, A., & Petkovic, D. (2025). Issues and Concerns About GenAI and How We Can Smartly Use It in Education. *Proceedings of the AAAI Symposium Series*, 284–285. <https://doi.org/10.1609/aaais.v5i1.35600>
- Chien, C.-C., Chan, H.-Y., & Hou, H.-T. (2024). Learning by playing with generative AI: design and evaluation of a role-playing educational game with generative AI as scaffolding for instant feedback interaction. *Journal of Research on Technology in Education*, 1–20. <https://doi.org/10.1080/15391523.2024.2338085>
- Chorrojprasert, L. (2020). Learner Readiness – Why and How Should They Be Ready? *LEARN Journal : Language Education and Acquisition Research Network Journal*, 13(1), 268–274.
- Gonulal, T., & Loewen, S. (2018). Scaffolding technique. In J. I. Liontas (Ed.), *The TESOL Encyclopedia of English Language Teaching* (1st ed., pp. 1–5). Wiley. <https://doi.org/10.1002/9781118784235.eelt0180>
- Gonulal, T., & Loewen, S. (2018). Scaffolding technique. In *The TESOL Encyclopedia of English Language Teaching* (pp. 1–5). Wiley. <https://doi.org/10.1002/9781118784235.eelt0180>
- Greenhow, C., Graham, C. R., & Koehler, M. J. (2022). Foundations of online learning: Challenges and opportunities. *Educational Psychologist*, 57(3), 131–147. <https://doi.org/10.1080/00461520.2022.2090364>
- Gueudet, G. (2008). Investigating the secondary–tertiary transition. *Educational Studies in Mathematics*, 67(3), 237–254. <https://doi.org/10.1007/s10649-007-9100-6>
- Hettihewa, A., & Karunathilake, I. (2015). An Evaluation of Teaching Styles of Advanced Level Science Stream Teachers in Colombo District Schools. *Proceedings of 8th International Research Conference, KDU*, 90–95.
- Hung, M.-L., Chou, C., Chen, C.-H., & Own, Z.-Y. (2010). Learner readiness for online learning: Scale development and student perceptions. *Computers & Education*, 55(3), 1080–1090. <https://doi.org/10.1016/j.compedu.2010.05.004>
- Iddrisu, H. M., & Iddrisu, S. A. (2025). Teacher Readiness to Use AI Tools in the Classroom. *International Journal of Research in Education and Science*, 11(3), 494–510. <https://doi.org/10.46328/ijres.1314>
- Jayasinghe, S. (2024). Promoting active learning with ChatGPT: A constructivist approach in Sri Lankan higher education. *Journal of Applied Learning & Teaching*, 7(2). <https://doi.org/10.37074/jalt.2024.7.2.26>
- Khlaif, Z. N., Alkhouk, W. A., Salama, N., & Abu Eideh, B. (2025). Redesigning Assessments for AI-Enhanced Learning: A Framework for Educators in the Generative AI Era. *Education Sciences*, 15(2), 174. <https://doi.org/10.3390/educsci15020174>
- Lee, C. C., & Low, M. Y. H. (2024). Using genAI in education: the case for critical thinking. *Frontiers in Artificial Intelligence*, 7. <https://doi.org/10.3389/frai.2024.1452131>
- Maulana, A., Idroes, G. M., Kemala, P., Maulydia, N. B., Sasmita, N. R., Tallei, T. E., Sofyan, H., & Rusyana, A. (2023). Leveraging Artificial Intelligence to Predict Student Performance: A Comparative Machine Learning Approach. *Journal of Educational Management and Learning*, 1(2), 64–70. <https://doi.org/10.60084/jeml.v1i2.132>
- Mayadunne, G., & Kariyasekera, K. (2021). Dropping out of school at secondary level: an exploratory study. *Sri Lanka Journal of Social Sciences*, 44(2), 199. <https://doi.org/10.4038/sljss.v44i2.7983>
- Meli, K., Taouki, J., & Pantazatos, D. (2024). EMPOWERING EDUCATORS WITH GENERATIVE AI: THE GENAI EDUCATION FRONTIER INITIATIVE. 4289–4299. <https://doi.org/10.21125/edulearn.2024.1077>
- Ministry of Digital Economy. (2024). *The state of the national digital infrastructure and future outlook* (Report No. 3).
- Moorhouse, B. L. (2024). Beginning and first-year language teachers’ readiness for the generative AI age. *Computers and Education: Artificial Intelligence*, 6, 100201. <https://doi.org/10.1016/j.caeai.2024.100201>
- Moorhouse, B. L., Yeo, M. A., & Wan, Y. (2023). Generative AI tools and assessment: Guidelines of the world’s top-ranking universities. *Computers and Education Open*, 5, 100151. <https://doi.org/10.1016/j.caeo.2023.100151>

Moundridou, M., Matzakos, N., & Doukakis, S. (2024). Generative AI tools as educators' assistants: Designing and implementing inquiry-based lesson plans. *Computers and Education: Artificial Intelligence*, 7, 100277. <https://doi.org/10.1016/j.caeai.2024.100277>

Pei, L., Jong, M. S.-Y., Huang, B., Pang, W.-C., & Shang, J. (2025). Formally integrating Generative AI into secondary education: Application of ChatGPT in EFL writing instruction. *Educational Technology & Society*, 28(3), 281–297.

Rafiq, J. E., Zakrani, A., Nough, S., & Amraouy, M. (2025). *Predictive Learning Analytics: Leveraging Generative AI for Enhanced Academic Performance Prediction* (pp. 251–265). https://doi.org/10.1007/978-3-031-98476-1_21

Shen, Y., Heacock, L., Elias, J., Hentel, K. D., Reig, B., Shih, G., & Moy, L. (2023). ChatGPT and Other Large Language Models Are Double-edged Swords. *Radiology*, 307(2). <https://doi.org/10.1148/radiol.230163>

Walia, K. K., & Randhawa, V. (2015). Education in schools. *International Journal Of Home Science Extension & Communication Management*, 2(1), 63–70. <https://doi.org/10.15740/HAS/IJHSECM/2.1/63-70>

Watts, M. (2021). Friedrich Froebel: interpolation, extrapolation. *Early Child Development and Care*, 191(7–8), 1186–1195. <https://doi.org/10.1080/03004430.2021.1881077>