"Students Have Been Cheating With or Without AI!": Doing What Matters Most – Designing Authentic, Critical and Meaningful Learning With AIEd

HG Retno Harsanti, National Taiwan Normal University, Taiwan

The Asian Conference on Education 2024
Official Conference Proceedings

Abstract
A global survey conducted by UNESCO in 2023 across 450 schools and universities worldwide has disclosed a notable increase in the adoption of AI across various nations, yet only 10% among them have established regulatory frameworks governing its implementation. Concerns have been raised about the potential negative consequences of AI in education (AIEd), including fears that it may trigger unethical behavior in academics, blunt critical and creative thinking processes, lead to human loss in decision-making, and promote laziness. Through a systematic literature review of the Scopus database spanning 2018-2020 and 2022-2024, this study juxtaposes empirical instances of breaches in academic integrity by students. These insights serve as the foundation for advocating the development of a learning design tailored for K-12 educational settings in the AIEd era. This design involves (1) authentic learning through real-world problems and data-driven learning, (2) critical learning through open-ended critical questions, reasoning, and metacognitive processes, and (3) meaningful assessment such as performance-based, output-based, and action-driven assessment. The implementation integrates technology, including AIEd, and employs collaborative and communicative approaches. By adhering to this design, educators aim to enhance student engagement, mitigate academic misconduct, and maximize the benefits of AIEd in enriching the learning experience.

Keywords: AIEd, Authentic, Cheating, Critical, Meaningful, Learning

Introduction

The rapid development of technology has encouraged high discussions about the impact of technology utilization in various fields, including education. Artificial intelligence (AI) is one of the topics that is very intensely discussed, especially related to concerns about educational output and outcomes. UNESCO (2023) reported the results of a global survey of 450 schools and universities regarding the use of AI, where the results of the survey indicated that the use of AI is increasing in various countries, yet only 10% of countries have regulations related to AI utilization. This condition encourages UNESCO to encourage countries to develop policies and regulations regarding the utilization of AI in education (O'Hagan, 2023).

Discussions related to the utilization of AI in the field of Education have sparked many debates around ethical issues (Akgun & Greenhow, 2022; Foltynek et al., 2023; Karan & Angadi, 2023). Debates have arisen regarding the dynamics of benefits obtained through Aid as discussed by some scholars argue with the belief that AIEd brings benefits such as enhancing personalized learning, improving student-teacher interaction in online learning (Seo et al., 2021), supporting students with special needs (Vincent-Lancrin & Vlies, 2020) nd reducing teachers' administrative workload (Grassini, 2023). On the other hand, some scholars have raised concerns about the decline in students' thinking abilities that can be caused by the use of AIEd in the learning process, such as blunting critical and creative thinking processes, impacting to human loss in decision-making and laziness (Ahmad et al., 2023). In addition, other concerns about the increasing unethical behavior in academics were also raised by Kamalov et al. (2023).

Based on the importance of the ongoing scientific discussions regarding the impact of AIEd utilization, the author proposes that both the pros and cons presented by scholars hold merit. While AI has benefits that can be leveraged in learning, it also has the potential to compromise academic integrity and stifle students' thinking processes if not managed properly. Notably, the issue of academic integrity and blunting of thought processes is not a new phenomenon, as students have been cheating all the time, with or without AI. Therefore, as educators, our primary concern should be designing authentic, critical, and meaningful learning experiences with the help of AI.

Systematic Review on Empirical Research on Academic Integrity of *AIEd*

The widespread use of AIEd has raised significant concerns regarding academic integrity, including in the research field. A systematic literature review was conducted in the Scopus database, focusing on the topic of academic integrity and AIEd, categorized by social sciences field categories, and including articles published between 2021 and 2025. The search query consisted of the following keywords: student AND cheating AND ai OR gpt AND PUBYEAR > 2021 AND PUBYEAR < 2025 AND (LIMIT-TO (SUBJAREA , "SOCI")) AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (EXACTKEYWORD , "Academic Integrity")) AND (LIMIT-TO (LANGUAGE , "English")). The search results yielded 64 articles relevant to the tertiary level. After screening using exclusion criteria, including non-English articles, non-relevant articles to academic integrity, and non-empirical research in the abstract section, 15 articles remained. To further refine the search, we added a focus on: high AND school AND K-12. The search results yielded 76 articles but only 3 are relevant to this paper. Therefore, in total there are 18 articles used in this paper.

The results of the literature review analysis conducted found that empirical studies related to academic integrity, triggered by AIEd, have been widely discussed in the academic community. Specifically, the results of the literature review found that in the realm of academic writing, there are complexities and challenges caused by the use of AI-generated content (Mah et al., 2024). In addition, there are different views between teachers and students regarding the use of technology, one of which is AI-generated content in completing learning assignments. For students, AI-generated content is seen as a tool that can help in exploring ideas and improving the quality of language in completing assignments. On the other hand, teachers view the use of AI-generated content as a shortcut that undermines the learning process. This tension increasingly shows the importance and need for regulations that regulate the Limits of AIEd use that can be understood by both students and teachers to provide clear guidelines and policies on ethical use.

The next emergence theme that was intensively discussed in the literature analysis was related to the impact of AI-generated content on academic integrity. Concern related to the importance of teaching ethics in academic writing related to the importance of the value of original work and the consequences of academic dishonesty, is considered very important for the purpose of plagiarism prevention (Premat, 2023). This objective can be achieved by teaching students how to present source criticism, and acknowledge the work of others through citation, doing appropriate paraphrasing and writing appropriate references. This theme is considered important because the discussion of plagiarism cases in writing assignments was found to be massive. The literature review also found that there is an emerging need for educators to be more aware and critical in assessing students' written work in order to be able to distinguish from human-written work as it becomes more challenging.

The next theme that is also an important discussion in the literature is the need for integration of higher order thinking in the preparation of student learning assessments. The massive AI-generated content that provides opportunities for students to get answers needs to be addressed by implementing the complexity of giving assignments to encourage students to think critically and creatively (Kirwan, 2023). In addition, AI is also seen as being able to help facilitate grading efficiently and objectively, although with the following weaknesses where it may not be able to capture the complexity of human thought that may be needed in assessing student learning performance (Kumar, 2023). This integration is important to consider considering that education does not only focus on results, but also on the process. Overall, the literature highlights the importance of striking a balance between embracing the benefits of AI-generated content and maintaining the integrity of education.

Students Have Been Cheating All the Time, With or Without AI

The systematic literature review in this article is continued in the second stage. It is essential to acknowledge that academic cheating is not a novel phenomenon and is not solely attributable to the presence of AI. According to a systematic literature review conducted using search keywords: student AND cheating AND academic AND integrity AND PUBYEAR > 2017 AND PUBYEAR < 2021 AND (LIMIT-TO (SUBJAREA ,“SOCI”)) AND (LIMIT-TO (DOCTYPE , “ar”)) AND (LIMIT-TO (LANGUAGE , “English”)) AND (LIMIT-TO (EXACTKEYWORD , “Academic Integrity”)). The results of the search yielded 94 documents, which were subsequently filtered to exclude non-relevant items, resulting in a final selection of 18 articles.

The findings of the systematic literature review revealed several significant themes. Firstly, the problem of academic integrity is a pervasive issue that affects students and institutions globally, with contract cheating being a particularly notable manifestation of this problem. The literature found that many students have a subjective threshold for outsourcing their academic work, and once they reach a certain level of energy expenditure, they are willing to engage in cheating. This can include paying someone else to do their work, which is a common practice known as contract cheating. One of the study found that 8% of respondents admitted to engaging in contract cheating, and that certain groups of students, such as those with a language background, are more likely to engage in this behavior (Foltynek et al., 2023). The student are willing to pay some money around US$33.32 per 1,000 works to get the work done (Amigud, 2020). Another study also found that essay mills, which provide custom-made essays, are readily available to students at a low cost, and that revenue calculations indicate a price point of US$31.73 per 1,000 words (Lancaster, 2019).

Secondly, the perceived reasons for indulging in plagiarism include busy schedule, easy accessibility of electronic resources, unawareness of plagiarism instructions, poor knowledge of research writing, and lack of penalty (Kampa et al., 2020). The literature also found that staff estimated high costs for assignments from online essay mills, believed that low numbers of students are using these services, and reported that outcomes were lenient. However, the literature identified three significant variables associated with contract cheating, including dissatisfaction with the teaching and learning environment, perceptions of cheating opportunities, and language background (Awdry & Newton, 2019; Bretag et al., 2019).

A systematic literature review reveals that academic integrity violations can occur independently of AI, in various forms. Notably, the presence or absence of AI does not guarantee the absence of cheating. Moreover, research conducted by Stanford University in 2023 found that the popularity of AIEd tools, including ChatGPT, did not significantly increase the prevalence of cheating among high school students, as 60-70% of respondents reported having engaged in cheating prior to the introduction of AI (Singer, 2023). A separate survey of 1,200 undergraduate students conducted by UCAS in the UK found that 53% of respondents used ChatGPT to assist with assignment preparation, while 36% employed AI as a private tutor to aid in concept explanation, and only 5% used AI-generated text in assessments without editing and violating institutional rules (Freeman, 2024). These findings suggest that academic dishonesty can occur with or without AI, but this does not preclude its prevention. As educators, it is essential for us to address this issue seriously and effectively to maximize the benefits of AI while preserving the core principles of education.

Doing What Matter Most: Designing Authentic, Critical and Meaningful Learning With AI

A critical examination of studies on academic challenges underscores the crucial role of educators in designing learning experiences that successfully achieve learning objectives. The increasing ubiquity of digital devices in educational institutions is undeniable, with 9 out of 10 students in OECD countries having access to computers within school infrastructure (OECD, 2024). However, despite this widespread adoption, digital efficacy remains a concern in various countries, including Jordan, the Philippines, Palestine, Morocco, and Thailand, where the digital divide persists. In these countries, only half or fewer students report feeling confident or very confident in using video-based communication programs (OECD, 2023a).

Furthermore, the time spent by students on digital devices at school is also increasing. According to the PISA 2022 database report, students in OECD countries spend a substantial amount of their daily time using digital devices for learning purposes (OECD, 2023c). On average, students allocate around 2 hours per day to digital learning activities, which is a significant proportion of their overall time. Moreover, students also spend a notable amount of time on digital devices for leisure activities at school, with an average of 1.1 hours daily. Notwithstanding the benefits of digital devices, concerns have been raised about their impact on student learning. Referring to OECD (2023b) data, it was found that students who studied with the help of digital devices for up to 1 hour per day had 14 points higher math scores than those who did not use digital devices. However, the use of digital devices also has negative impacts, where 65% of students report being distracted by digital devices in math classes, including decreased life satisfaction and emotional resilience caused by anxiety about being far away and not having access to using digital devices (OECD, 2024). Overall, the relationship between digital devices and student learning is complex, and it's important to strike a balance that maximizes the benefits while minimizing the drawbacks.

Proposed Learning Design

Based on the literature review and understanding of the psychological conditions of students in the current era, it is important to understand that technology provides benefits and also challenges in the teaching and learning process. In addition, technology cannot be avoided, but it needs to be managed carefully and appropriately so that it is useful and not disruptive. Therefore, a supportive learning design is imperative. Given the ubiquity of digital devices in learning, teachers must design learning experiences that enable students to utilize digital devices for learning purposes. However, teachers need to design engaging learning, so that even though there are digital devices, students fully use them for learning purposes, and avoid unnecessary distractions. Teachers play a pivotal role as facilitators, creating a conducive learning environment that encourages self-directed learning, fosters healthy communication and collaboration, provides guidance and support, offers feedback, models skills and behaviors, builds relationships, and provides choices and autonomy. Learning schemes that allow the use of media require a construct of trust between teachers and students, as well as the habituation of awareness of independent and responsible learning responsibilities.

To achieve a learning scheme that answers the challenges of the AIEd era, three essential elements must be considered when designing learning experiences: presenting authentic, critical, and meaningful learning. Authentic learning is facilitated by providing relevant real-world problems accompanied by the utilization of real data whenever possible. "Relevance" is the paramount keyword in presenting authentic learning. Relevant learning can be achieved by providing real-world problems to students, ensuring that the topics are contextual to their environment, so that they can be comprehended and engaging. The utilization of real data is also beneficial for students, particularly at the high school level, as it enables them to understand that the learning material is truly real and important to learn. This data can be used to design assignments that promote critical thinking and problem-solving skills. Teachers also do not have to be data providers all the time, on the contrary, teachers need to encourage students to search for and obtain data independently so that they can use the digital devices they have to explore data and additional information.

The second element of the learning design scheme is critical learning, where teachers must design critical questions that provoke critical thinking and curiosity. Following the provision

of real-world problems and supporting data, teachers must ask open-ended questions that are personal, and encourage exploration of open answers. Teachers need to be able to present critical questions that challenge students' reasoning abilities. This critical learning scheme will be more authentic if it is carried out dialogically than written assessment, although it does not rule out the possibility of being carried out in writing. However, dialogical discussions can present broader critical interactions between teachers and students more broadly. The teacher can pose questions such as, "What do you think about...?" "Why do you think that...?" "How do you feel about...?" "Why do you feel that way?" "What are you going to do about...?" "How will your plan work to solve the problem?" "how will you get the resources to do such a plan?" "What do you think about your friend's plans or arguments?"

In the discussion process, teachers play an important role in leading the discussion and being a moderator. In this framework, there are no right or wrong answers, as the priority is on developing students' thinking and argumentation skills. Teachers can also use a mix model scheme, where learning begins with giving authentic real-world problems and encouraging students to work on certain learning tasks, which are then presented and discussed in class. In this learning process, students are allowed to utilize digital devices to explore and obtain information. In some cases, students may be able to answer questions by asking AI, but it is essential to encourage students to be honest in presenting their thoughts and explain the sources they use to obtain information.

The third element of the learning design scheme is meaningful learning, where teachers must design high-quality assessments. Meaningful learning aims to encourage students to contribute to producing valuable or beneficial outputs or outcomes, so that students understand that their thinking and learning efforts have meaning and value. There are three assessment models that can be used to achieve meaningful learning. First, performance-based assessments where students are presented with a scenario, task, or problem that requires them to apply their knowledge and skills to solve a real-world problem or complete a task. The assessment is designed to mimic real-world situations, allowing students to demonstrate their ability to apply what they have learned in a practical and meaningful way. This assessment can take the form of project-based learning, case study, portfolio-based assessment, or simulation-based assessment.

Second, output-based assessments, where students are encouraged to develop tangible products or results of a learning process. This assessment model can be a continuation of the performance base, where after carrying out the thinking-based assignment model and worksheets, students can continue with the creation of performance output. This output can take the form of artwork, programs, designs, etc.

Finally, action-driven assessments can also be given to students. This assessment encourages students to take real action related to the real-world problems being studied. Actions that can be taken include creating a digital campaign, creating a letter of concern and sending it to relevant parties, holding hearings with relevant parties. This entire assessment process does not stop at the level of knowledge in the classroom but encourages students to produce something, whether it is an outcome, output, or action. In the process of carrying out assessments, students can also conduct various explorations using technology. Teachers must encourage students to be honest and give credit to the sources of ideas they use to carry out their assessments.

The Learning Support System

In implementing the design planning scheme, which incorporates the three key elements previously discussed, several support components are necessary to ensure effective implementation. First, schools must have adequate digital infrastructure in place to facilitate students' independent construction of knowledge using digital devices. This infrastructure includes reliable internet connections, learning management systems, IT support departments, and digital resources that are easily accessible to students, typically managed by the library. IT support can generate learning analytics reports, particularly from the Learning Management System (LMS) used by schools on a regular basis, such as mid-semester. Although teachers can access and analyze learning analytics data independently, reports from the IT department provide a broader and more comprehensive picture, enabling both teachers and administrators to inform their decisions regarding learning implementation.

The second support component is related to ICT literacy, digital competence, and citizenship, both for teachers and students. For teachers, training and workshops are necessary to equip them with the knowledge and skills to effectively manage learning with digital integration. Concurrently, students require ICT subjects (or equivalent) that provide an understanding of how to access and utilize technology and various digital learning resources independently and responsibly. In particular, with regards to the development of AIEd, teachers and students need to be equipped with engineering prompts and coding skills to maximize the use of AI. Enrichment programs can be one effective way to achieve this goal. The learning design scheme is presented in Figure 1.

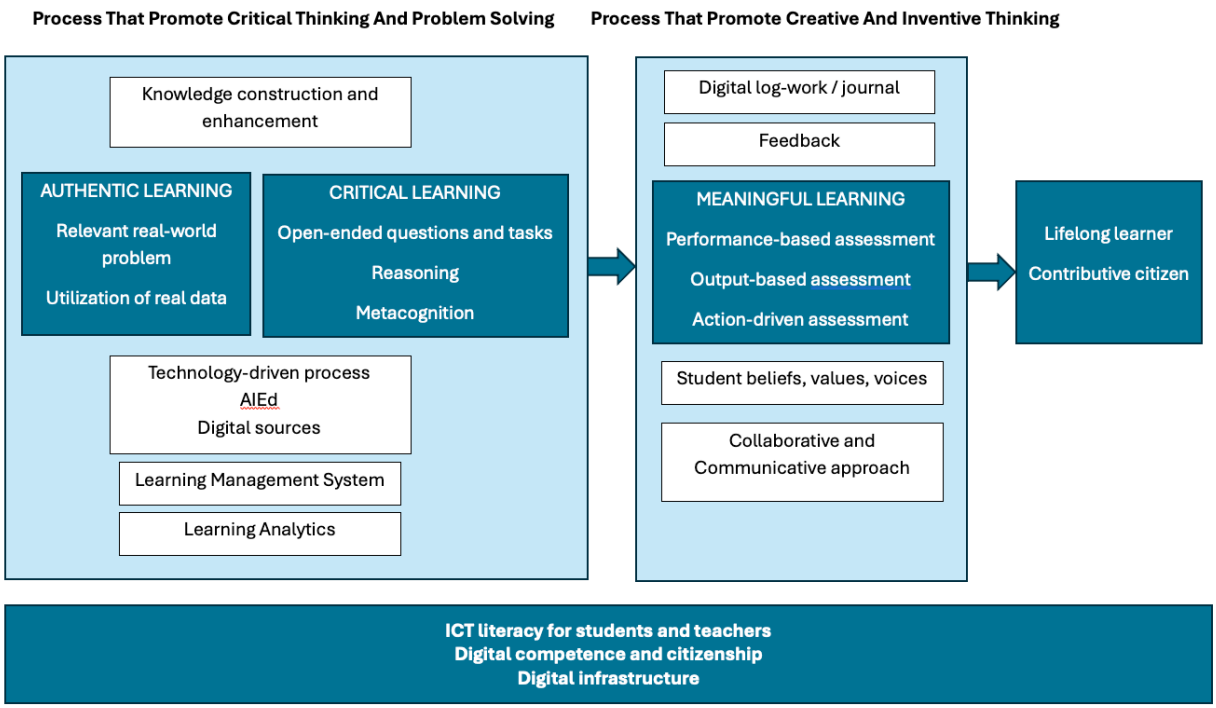

Figure 1: Learning Design Mapping (Source: Author)

Conclusion

The literature suggests that students have consistently committed academic integrity violations over a long period of time. Consequently, the concern that the emergence of AI will encourage students to commit academic violations can be understood but is not entirely legit. As technology continues to evolve and develop, educational institutions must foster adaptability among both teachers and students. Moreover, technology that is unavoidable in the classroom must be utilized lawfully to maximize the learning process.

To achieve authentic, critical, and meaningful learning, education should focus on engaging students with real-world problems, encouraging them to critique these issues, and producing a meaningful learning process. To accomplish this, substantial support is required, including: digital infrastructure that ensures seamless access to digital resources, enrichment programs on ICT literacy, digital competence, and citizenship to equip students with the necessary skills for responsible technology use, IT support/departments that are prepared to provide assistance to teachers and students throughout the teaching and learning process. By providing these support components, educational institutions can effectively leverage technology to promote meaningful learning outcomes.

Declaration of Generative AI and AI-Assisted Technologies in the Writing Process

This article uses ChatGPT solely for grammar checking purposes and not for any other use. The ideas, concepts, and arguments presented in this article are entirely the author's own.

References

Ahmad, S. F., Han, H., Alam, M. M., Rehmat, M. K., Irshad, M., Arraño-Muñoz, M., & Ariza-Montes, A. (2023). Impact of artificial intelligence on human loss in decision making, laziness and safety in education. *Humanities and Social Sciences Communications*, *10*(1), 1–14. https://doi.org/10.1057/s41599-023-01787-8

Akgun, S., & Greenhow, C. (2022). Artificial intelligence in education: Addressing ethical challenges in K-12 settings. *Ai and Ethics*, *2*(3), 431–440. https://doi.org/10.1007/s43681-021-00096-7

Amigud, A. (2020). Cheaters on Twitter: An analysis of engagement approaches of contract cheating services. *Studies in Higher Education*, *45*(3), 692–705. Scopus. https://doi.org/10.1080/03075079.2018.1564258

Awdry, R., & Newton, P. M. (2019). Staff views on commercial contract cheating in higher education: A survey study in Australia and the UK. *Higher Education*, *78*(4), 593–610. Scopus. https://doi.org/10.1007/s10734-019-00360-0

Bretag, T., Harper, R., Burton, M., Ellis, C., Newton, P., Rozenberg, P., Saddiqui, S., & van Haeringen, K. (2019). Contract cheating: A survey of Australian university students. *Studies in Higher Education*, *44*(11), 1837–1856. Scopus. https://doi.org/10.1080/03075079.2018.1462788

Foltynek, T., Bjelobaba, S., Glendinning, I., Khan, Z. R., Santos, R., Pavletic, P., & Kravjar, J. (2023). ENAI Recommendations on the ethical use of Artificial Intelligence in Education. *International Journal for Educational Integrity*, *19*(1), Article 1. https://doi.org/10.1007/s40979-023-00133-4

Freeman, J. (2024, February 1). *New HEPI Policy Note finds more than half of students have used generative AI for help on assessments – but only 5% likely to be using AI to cheat*. HEPI. https://www.hepi.ac.uk/2024/02/01/new-hepi-policy-note-finds-more-than-half-of-students-have-used-generative-ai-for-help-on-assessments-but-only-5-likely-to-be-using-ai-to-cheat/

Grassini, S. (2023). Shaping the Future of Education: Exploring the Potential and Consequences of AI and ChatGPT in Educational Settings. *Education Sciences*, *13*(7), Article 7. https://doi.org/10.3390/educsci13070692

Kamalov, F., Santandreu Calonge, D., & Gurrib, I. (2023). New Era of Artificial Intelligence in Education: Towards a Sustainable Multifaceted Revolution. *Sustainability*, *15*(16), Article 16. https://doi.org/10.3390/su151612451

Kampa, R. K., Padhan, D. K., & Ahmad, F. (2020). Perceptions of students and researchers of food technology towards plagiarism: A case study. *DESIDOC Journal of Library and Information Technology*, *40*(6), 369–374. Scopus. https://doi.org/10.14429/djlit.40.6.16036

Karan, B., & Angadi, G. R. (2023). Potential Risks of Artificial Intelligence Integration into School Education: A Systematic Review. *Bulletin of Science, Technology & Society*, *43*(3–4), 67–85. https://doi.org/10.1177/02704676231224705

Kirwan, A. (2023). ChatGPT and university teaching, learning and assessment: Some initial reflections on teaching academic integrity in the age of Large Language Models. *Irish Educational Studies*, *0*(0), 1–18. https://doi.org/10.1080/03323315.2023.2284901

Kumar, R. (2023). Faculty members' use of artificial intelligence to grade student papers: A case of implications. *International Journal for Educational Integrity*, *19*(1), Article 1. https://doi.org/10.1007/s40979-023-00130-7

Lancaster, T. (2019). Profiling the international academic ghost writers who are providing low-cost essays and assignments for the contract cheating industry. *Journal of Information, Communication and Ethics in Society*, *17*(1), 72–86. Scopus. https://doi.org/10.1108/JICES-04-2018-0040

Mah, C., Walker, H., Phalen, L., Levine, S., Beck, S. W., & Pittman, J. (2024). Beyond CheatBots: Examining Tensions in Teachers' and Students' Perceptions of Cheating and Learning with ChatGPT. *Education Sciences*, *14*(5), Article 5. https://doi.org/10.3390/educsci14050500

OECD. (2021). *21st-Century Readers: Developing Literacy Skills in a Digital World*. Organisation for Economic Co-operation and Development. https://www.oecd-ilibrary.org/education/21st-century-readers_a83d84cb-en

OECD. (2023a). *OECD Digital Education Outlook 2023: Towards an Effective Digital Education Ecosystem*. Organisation for Economic Co-operation and Development. https://www.oecd-ilibrary.org/education/oecd-digital-education-outlook-2023_c74f03de-en

OECD. (2023b). *PISA 2022 Results (Volume I): The State of Learning and Equity in Education*. OECD. https://doi.org/10.1787/53f23881-en

OECD. (2023c). *PISA 2022 Results (Volume II): Learning During – and From – Disruption*. Organisation for Economic Co-operation and Development. https://www.oecd-ilibrary.org/education/pisa-2022-results-volume-ii_a97db61c-en

OECD. (2024). *Reimagining Education, Realising Potential*. Organisation for Economic Co-operation and Development. https://www.oecd-ilibrary.org/education/reimagining-education-realising-potential_b44e2c39-en

O'Hagan, C. (2023, September 7). *UNESCO: Governments must quickly regulate Generative AI in schools*. UNESCO. https://www.unesco.org/en/articles/unesco-governments-must-quickly-regulate-generative-ai-schools

Premat, C. (2023). Engaging upper secondary school pupils with integrity and source criticism. *International Journal for Educational Integrity*, *19*(1), 5. https://doi.org/10.1007/s40979-023-00127-2

Seo, K., Tang, J., Roll, I., Fels, S., & Yoon, D. (2021). The impact of artificial intelligence on learner–instructor interaction in online learning. *International Journal of Educational Technology in Higher Education*, *18*(1), 54. https://doi.org/10.1186/s41239-021-00292-9

Singer, N. (2023, December 13). Cheating Fears Over Chatbots Were Overblown, New Research Suggests. *The New York Times*. https://www.nytimes.com/2023/12/13/technology/chatbot-cheating-schools-students.html

UNESCO. (2023, September 6). *UNESCO survey: Less than 10% of schools and universities have formal guidance on AI*. https://www.unesco.org/en/articles/unesco-survey-less-10-schools-and-universities-have-formal-guidance-ai

Vincent-Lancrin, S., & Vlies, R. van der. (2020). *Trustworthy artificial intelligence (AI) in education: Promises and challenges*. OECD. https://doi.org/10.1787/a6c90fa9-en

Contact email: hildegardis.harsanti@gmail.com