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**NEWSLETTER**

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## **The Role of General Artificial Intelligence in Digital Literacy Training: An Empirical Study Based on the Information Technology Course**

*By Zhu, S., Li, J., Kuang, X., & Bai, J.*

*Correspondence to: Jiayuan Li, Central China Normal University, China. E-mail: editorial-office@bonoi.org*

**T**HE DIGITAL transformation of human society is accelerating as a result of the introduction of new-generation information technology (IT) like artificial intelligence (AI) and big data, and digital literacy has become an essential skill in the digital era. In this context, digital literacy training is deemed a crucial component of modern basic education. However, current digital literacy education in many schools remains focused on the operational use of digital tools with disregard for the human-machine-collaboration-assisted autonomous learning, which is highly advocated in the intelligent era. This dampens digital literacy development in students. Meanwhile, researchers found that generative artificial intelligence (GAI) has the potential to create flexible, open, and inclusive human-machine collaboration environments, facilitating students' self-organized learning. Based on the self-organized learning theory, this article advances the GAIsoLEs (generative AI-based self-organized learning environments), an instructional model for fostering students' digital literacy, with a quasi-experimental study conducted with the information technology classes to verify the effects of the model on student digital literacy development.

### Research Results:

- The basic components of the GAIsoLEs model include: a pivotal objective directed at digital literacy cultivation in students; a smart classroom setting, i.e., the self-organized learning environment (SOLE); and collaboration between the teacher, students, and GAI.
- The GAIsoLEs model is effective in raising the IT awareness, improving computational thinking ability, encouraging digital learning, and increasing digital creativity in the students.
- The GAIsoLEs model has no significant positive effects on the students' senses of responsibility for an ethical digital society. As GAI tools may algorithmically avoid ethically controversial issues when used by the students in search for digital materials, the latter can be deprived of the opportunities to develop genuine

understanding of the values, ethics, and behavioral norms that should be followed in digital activities.

The study makes the following suggestions: (i) prioritizing ethical use of technology to build controllable large models for education; (ii) increasing education on basic digital knowledge and skills to avoid illegitimate reliance on GAI tools; (iii) providing GAI-assisted teaching training for teachers.

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