

INVESTIGATING THE AFFORDANCES OF AI-POWERED MATHEMATICS LEARNING PLATFORMS

Jihwa Noh¹, Nan Huh², and Ho Kyoung Ko³

¹Pusan National University, ²Kyonggi University, ³Ajou University

PURPOSE AND RESEARCH QUESTION

Despite the ever-changing digital landscapes in education, especially with the leverage artificial intelligence (AI), schools and practitioners often lack clarity in terms of which pedagogical theories should guide them to evolve practices by embracing the affordances of such learning spaces (Hartwick, 2018). This study explored the affordances of AI-powered learning platforms in the context of K-12 mathematics learning and teaching. This study adapted Evans et al. (2017)'s view of affordance as "something that helps mediate behaviour towards an outcome" (p. 36) to mean that an affordance is a characteristic of the learning space that promotes or facilitates learning outcome. The research question of this study is: How do the affordances of AI-powered learning platforms influence students' usage of the platform for learning in general and mathematics learning in particular?

METHOD AND PRELIMINARY RESULTS

The main data instrument and data collection was done through the use of a five-point Likert scale structured questionnaire by 300 secondary students through the Google form. The exploratory factor analysis and logistic regressions were employed to analyse the data.

After conducting the exploratory factor analysis, four factors that influence students' usage of an AI-powered learning platform were identified: interface design, multimodal interaction, cognitive operation, and technical operation. Multimodal interaction was the most important factor affecting the usability of an AI-powered learning platform while technical operation was the least important factor. The findings of the study may suggest future studies examine design principles that provide users with multiple modes of interacting with a system.

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References

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