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Integrating Robot-Based Resources to Foster Computational Thinking and Communication Skills in EFL Education: A Path Towards Sustainable Development

| Conference paper | First Online: 18 September 2024

| pp 70–80 | Cite this conference paper

Sustainable Development through Machine Learning, AI and IoT

(ICSD 2024)

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Abstract

The current monolithic approach in teaching and assessing English as a foreign language (EFL) communication in Indonesia has resulted in a gap between students' understanding of the nature of communication skills and their ability to use them correctly in their speaking, leading to anxiety, lack of self-confidence and lack of mastery vocabulary. Computational thinking (CT), a high-level approach to problem-solving and optimizing knowledge acquisition, was used to design solutions in this study using a Virtual Robot application to stimulate their speaking motivation. They are taught using a CT teaching model. To find out the impact of this method, Pre-test and post-tests were conducted. All undergraduate students showed considerable improvement in their use of vocabulary when speaking, a new level of agency and interest in learning English was evident and their dialogue confidence improved. In the field of English as a foreign language (EFL), CT is an important social mediation technique. This research is the best attempt to incorporate CT into the thinking process of students learning English with the virtual assistance of robot artificial intelligence.

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Cite this paper

Muthmainnah, M., Al Yakin, A., Seraj, P.M.I., Darmawati, B., Elngar, A.A., Obaid, A.J. (2025). Integrating Robot-Based Resources to Foster Computational Thinking and Communication Skills in EFL Education: A Path Towards Sustainable Development. In: Whig, P., Silva, N., Elngar, A.A., Aneja, N., Sharma, P. (eds) Sustainable Development through Machine Learning, AI and IoT. ICSD 2024. Communications in Computer and Information Science, vol 2196. Springer, Cham. https://doi.org/10.1007/978-3-031-71729-1__7

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DOI	Published	Publisher Name
https://doi.org/10.1007/978-3-031-71729-1__7	18 September 2024	Springer, Cham

Print ISBN	Online ISBN	eBook Packages
978-3-031-71728-4	978-3-031-71729-1	Artificial Intelligence (R0)

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