Enhancing English Syntactic Competence through AI-Supported Instruction: A Quasi-Experimental Study of English-Majored Sophomores at HUFLIT

The aim of the present study was to assess the effectiveness of artificial intelligence (AI) in improving HUFLIT English-majored sophomores'syntactic skills with the core textbook "Analyzing Sentences- An Introduction to English Syntax"by Noel Burton-Roberts (5th edition,2022). In consideration of the scarcity of research on the application of AI in Syntax subject, a quasi-experimental mixed-methods approach was employed. A total of 80 second-year students majoring in English at HUFLIT University were randomly selected.

The methods used for collecting the data included a pretest, a posttest, a perception questionnaire, and semi-structured interviews. The experimental group used AI tools including ChatGPT, NotebookLM, and Edtech-corner.com with Text2Tree to support learning and practice. Quantitative findings show that the experimental group significantly outperformed the control group on three aspects of syntactic ability: conceptual understanding, applied knowledge, and structural analysis, and large effect sizes were recorded.

The findings showed large effect sizes for these three aspects. The qualitative findings showed that AI technology helped learners become more autonomous and motivated. However, there were limitations such as dependence and inaccuracies.

The results imply that AI can potentially serve as a pedagogical scaffold in the teaching of Syntax subject. This study adds to the body of research on AI in assisting language learning by expanding its scope to another underexplored area of language acquisition and providing implications for the integration of AI in higher education settings. Briefly, AI provides valuable tools for teaching learners'syntactic competence effectively.

Keywords: artificial intelligence, syntactic competence, AI-supported instruction, higher education pedagogy

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