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Examining the Efficacy of an Adaptive Reading Platform for Emergent Bilinguals in a Fifth-Grade CLIL Science Course

Saturday, 18 May 2024 15:00 (30 minutes)

This pilot study examines the efficacy of an adaptive CLIL science reading platform (ACSRP) for facilitating personalized learning among fifth graders in an after-school International Education program in Taiwan. Following the design-based research paradigm, which consists of grounding, conjecturing, iterating, and reflecting (Hoadley & Campos, 2022), the researchers first analyzed learning needs of fifth graders enrolled in a content-language integrated learning (CLIL) science course in Taiwan. Based on the identified learner needs, the researchers created balanced reading tasks with three adaptive mechanisms on the platform to accommodate for learners'individual (a) reading proficiency, (b) multimodal preference, and (c) word knowledge. The balanced reading tasks aimed to improve target learners'science reading skills with four different task types –(a) Recognizing Word Meaning, (b) Sentence Structuring, (c) Text Comprehension, and (d) Reading Fluency (realized through read-aloud tasks). The platform includes pre- and post-reading tests, multimodal balanced reading tasks where learners can choose their preferred learning mode (visual, aural, or linguistic modes), a scoreboard, and post-reading games focusing on vocabulary. The reading topics include soil, plants, and forces. The reading platform was developed on Unity and was refined after several trials over a six-month period. The pilot study in real classroom settings took place in two subsequent semesters with an experimental group and a control group. The adaptive mechanisms were evaluated for their efficacy based on researcher observations and a student survey. In the first semester, the first two mechanisms were evaluated for their efficacy. Then, in the second semester, all three mechanisms were tested, with learner survey collected after the use of ACSRP. Survey results show that target learners are motivated by using the platform to engage in reading about science by the multimodal balanced reading tasks. Their reading skills also improve with the use of the platform.

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Keywords

adaptive reading, multimodality, CLIL Science, balanced reading, personalized learning

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