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A qualitative study on using Intelligent Personal Assistant in teaching a young Korean learner in an EFL context

Bio data

Hyangeun is a Ph.D. student and research assistant in Science, Math, and Educational Technology at Temple University. Before joining Temple, she worked as a computer programmer and EFL teacher in South Korea. Her research interest includes but is not limited to instructional technology, computer-assisted language learning (CALL), online and virtual learning, and artificial intelligence in education (AIEd).

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Abstract

Despite the increasing interest in the potential of Intelligent Personal Assistant (IPA) as a language learning tool, a dearth of empirical studies exists that investigated IPA-based learning for young language learners. To fill this research gap, the current case study explored the use of IPA in teaching a fifth-grade language learner in the Korean EFL context. Specifically, the study aims to explore a language learner's perception of pedagogical benefits of IPA-based learning and attitudes/beliefs about the use of IPA in a language classroom. A semi-structured interview was conducted and analyzed using content analysis. We found that the learner had an overall positive perception about using IPA in class and could identify its pedagogical benefits. The learner's familiarity and interest also increased after the repeated use of IPA. The study provided evidence of integrating IPAs into teaching young language learners and suggests further research on collaboration between IPAs and human teachers.

Conference paper

Innovations in artificial intelligence (AI) technologies brought about changes in the way teachers create learning opportunities and experiences. In particular, advances in natural language processing, machine learning, and automatic speech recognition technologies opened up a new horizon of intelligent personal assistants (IPA)-based learning in and

out of the classroom (Dizon, 2020; Hsu et al., 2021). However, there are still very few empirical studies that examine the use of IPAs in teaching young foreign language learners. Furthermore, the recent emphasis on augmenting teachers' intelligence through collaboration between human teachers and AI (Baker, 2016) has made educational researchers focus on how classroom orchestration could be achieved in an IPA-based learning environment.

Thus, the current case study aimed to fill this research gap by asking two research questions: 1) How do young English as a foreign language (EFL) learners perceive pedagogical benefits of IPA-integrated language learning and 2) What are EFL learners' attitudes and beliefs about using IPAs in language class? A pilot study with six adult EFL learners was conducted, which informed us of the ways to maximize the learning experience in the IPA-based language classroom. Based on the pilot study, we decided to provide the language learner in the current study with guiding questions (e.g., What is the difference between wardrobe and drawer, I would like to know what trouser is) to ask Google Assistant, the IPA used in our study. A fifth-grade female student in Korea from an EFL speaking class participated in the current study. The student received IPA-based language instructions in two 50-minute classes, where learners used Google Assistant to understand the word meaning, check pronunciation, and play an IPA-based word game. After each class, a semi-structured interview was conducted which asked both pedagogical and psychological aspects of using IPAs in class. Using content analysis, the interview data were coded and grouped into pedagogical benefits/challenges and learner's attitudes and beliefs.

The qualitative findings from the interview revealed that the learner's perception of the IPA's pedagogical aspects was mostly positive, while Google Assistant's short recognition time made the learner feel time pressure and anxiety. The learner found the chance to check pronunciation and various resources provided by Google Assistant to understand word meaning particularly valuable. Interestingly, the learner perceived IPA-based language learning as enjoyable and engaging even when faced with a communication breakdown with Google Assistant. The learner added that the teacher's facilitation increased the quality of her interaction with IPA during communication breakdown. Furthermore, the learner was motivated to practice pronunciation to better communicate with Google Assistant. We also found that the learner viewed the IPA-based language learning experience more positively in the second class due to an increased familiarity and interest. As one of the very few attempts that examined the use of IPAs in teaching young EFL learners in a classroom setting, the study proved that IPAs could be efficiently integrated into a language class. Future studies should continue to explore how teachers and AIs could collaboratively create learning spaces for language learners across different age groups and contexts.

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