



CALL RESEARCH BRIEF

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Title: Summary of an exploration into the impact of augmented reality on EFL learners' reading comprehension

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Rationale/Overview of the study

This research examined the impact of augmented reality (AR) on university students' achievement in an English as a foreign language (EFL) reading classroom and their perceptions of using AR. The participants in this study had difficulties with their English reading skills because they were taught using traditional methods (e.g., memorization and the Grammar Translation Method), both of which do not provide an interactive learning context for students. To shed light on this issue, the researchers implemented AR to provide a meaningful, or authentic, learning environment, which could enhance student engagement and motivation. The researchers used AR to activate students' schema, or background knowledge, with auditory and visual learning materials (e.g., videos and narrations). They also allowed students to scan complex vocabulary, whose definition and example sentences would then be provided by the AR technology. Furthermore, they incorporated a discussion-based activity for a more interactive learning environment. Overall, the researchers were trying to determine whether the use of AR with a schema activation strategy and social interaction facilitated the participants' reading comprehension. They also investigated the students' perceptions of their AR-enhanced reading classroom.

Research methods

Approach. The researchers used a reading comprehension test to measure student achievement after studying in an EFL reading classroom with AR technology. They also compared the achievement of the students who studied with AR technology and those who studied with a traditional teaching method, or without AR technology. The researchers further employed interviews to examine the students' perceptions of studying in a reading classroom with AR technology.

Participants. The participants were 64 EFL university students enrolled in an upper-intermediate English class at a university in Iran. The students were equally divided into two groups. One group learned with AR technology, and the other without AR technology. Twelve of the students with AR technology participated in the interviews that explored their perceptions of studying with AR technology.

Data collection tools and analysis. The reading pretest and posttest scores of the students who studied with AR technology were compared to measure their reading comprehension achievement. The posttest scores of the students who studied with AR technology and those with a traditional teaching method were also compared to see whether the use of AR technology in a reading class could impact student achievement. To analyze the interview results, the researchers tried to find patterns or themes from the interview transcripts. In this way, not only could they know whether the use of AR technology in an EFL reading classroom could improve student achievement, but they could also learn how students felt when they were learning in an AR-enhanced reading classroom.

Results

Based on the reading achievement test, the researchers found that the students improved their reading scores after attending a class that implemented AR technology. They also found that the students who studied with AR technology performed more successfully compared to their counterparts who learned without AR technology. Thus, they claimed that EFL students could improve their reading comprehension skills more effectively when they read with AR technology than when reading without it. With their interview results, the researchers further showed that the participants enjoyed watching videos and listening to narrations provided by the features of AR technology, as they said that the learning sources could give them good background knowledge before reading their text. This schema activation strategy made their learning experience easier as it lowered their cognitive load. Their learning experience was further supported by the AR feature that allowed them to scan complex vocabulary for its definition and examples of use. Moreover, the researchers reported that the students enjoyed discussing what they had learned from the videos and narrations; they considered this activity interactive, and it made them curious to know more about their reading content. Because AR technology was novel to the students, they found it fascinating and impressive as it allowed videos and narrations to automatically pop up through their phones. Nevertheless, the students expressed their concerns that sometimes the videos were shaking and thus might make them feel annoyed. Overall, the students believed that AR technology could be beneficial to their learning experience, enhance their confidence, and lower their reading anxiety. They also expressed that they would want to learn with AR in their future reading classes.

Practical Implications

1. AR can be used to improve students' achievement in EFL reading classrooms.
2. AR can be used to activate students' schema, or background knowledge, before reading their text and provide an interactive learning environment with a discussion-based activity.
3. AR technology could facilitate student learning in a reading classroom as AR technology features could help students understand the definition and use of complex vocabulary by scanning it in their reading passage.

Recommendations for teachers:

1. Based on the results, teachers can use AR to activate student schema in a reading classroom.
2. Teachers can use AR to allow students to scan complex vocabulary to trigger its definition and use in sentences.

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