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Educational Didactics in Teaching Foreign Language Reading Comprehension Skills to Youth Community of Practice through Social Robot's Augmented Reality

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1. INTRODUCTION

New applied games and social robots in today's language education have resulted in robot-games (Robo-Games)-aided language learning. To be precise, social robot's augmented reality combines the real world with technology to add a layer of digital over the physical, allowing students to visualize the materials in the scenes of real world. One of the major perks of Social Robot augmented reality-aided learning modules is being able to practice materials in an environment like the real-world setting through the medium of simulation. Social Robot augmented reality affords students the opportunity to practice reading comprehension in a supportive context, where the quality of collaborative practice has been indicated to be beneficial. This may make more sense to expose students early to reading materials regarding their future life. According to the socio-cultural theory of cognitive development, Community of Practice is now the place where students with the high and low level of foreign language proficiency, in tandem with students from different nations come to apply the cued scenes of the augmented reality and learn by teaching social robots. This way, the focus of the study was to do educational didactics in the Community of Practices of Middle Eastern Youths for doing foreign using social robot's augmented realities in the Community of Practices.

2. MATERIALS AND METHOD

To conduct this interventional study with the parallel design, taking into account the drop-off rate of 5%, 542 Persian (N = 480) and non-Persian (N = 72) youths from among 620 students of the eighth grade from the age range of 11-12 were selected. The students who took the obligatory course of Arabic, English, and Persian in the academic years 2021-2022 were selected through the stratified sampling method. The participants were randomly divided into two ready-made and self-made augmented reality groups. The mixed methods study was done in two quantitative and qualitative phases. In each session, initially, using a multiplayer game platform, the participants in the Community of Practice practiced the foreign language readings through the clouds of ready-made or self-made augmented reality. In the

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ready-made groups students were provided with the ready-made augmented reality and in the self-made group, students were given rein to develop their own collaborative activities. Students co-practiced the augmented reality and then fulfilled them collectively. In this manner, reading materials were imported into the clouds of augmented reality and they were read by the participants for the social robots. While Persian students took part in the small Communities of Practice to learn and teach English and Arabic readings during a 24-week course, non-Persian students took part in these Communities of Practices to learn and teach English and Persian readings. Social robots were used in teleoperated mode (viz., teleoperated social robots). Then, the English, Arabic, and/or Persian teachers taught and assessed the students individually in online sessions. During the course using the guided journaling, the teachers were asked to keep journals.

3. RESULTS AND DISCUSSION

Quantitative findings revealed that the self-made augmented realities significantly enhanced the student-robot interaction in the process of learning foreign language readings by teaching. Ready-made Augmented Realities, however, could not fully reach their potential to enter the participants-robot interaction. Similarly, the analysis of the teachers' journals indicated that foreign language reading comprehension occurs when students are allowed to use materials for creation and interaction. Teachers' journals revealed that meaning can be made more explicit when additional activities are devised to be practiced. Arguably developing self-made augmented reality for practicing reading and teaching social robots requires the student to adopt different practices and adapt to different knowledge types and materials. These self-made augmented realities encouraged longer extended reading which were to be taught to the teleoperated social robots and could also help with vocabulary development. Student active presence binds foreign language learning and learning by teaching approach together. This way, more robust and reliable results could be gained by making use of learning by teaching approach in foreign language education.

4. CONCLUSION

This study did the educational didactics of using social robots' augmented reality in the Community of Practices for teaching and learning foreign language reading skills to middle eastern youths. The results can enhance the understanding of how students' active role facilitates reading comprehension under these circumstances. The findings underlined the students' collaboration for learning by teaching the robots through augmented realities paved the way for students' easy reading. Along these lines, students' active participation in doing reading through the Robo-Games-aided language learning modules was reported as the major causes of students' success in foreign language reading comprehension. It was revealed that teachers perceived students' rate of progress to be greater in doing foreign language reading through the Robo-Games.

Keywords: Educational didactics, Social robots, Augmented reality, Reading comprehension, Foreign languages, Community of practice, Youth