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### **Pedagogical benefits of technological affordances in a user-created metaverse space**

## **Bio data**



Dr. Sangmin-Michelle Lee is a Professor of Global Communication at Kyung Hee University in Korea. She earned her PhD from the Pennsylvania State University in language education. She has published papers and books on language learning in a technology-enhanced learning environment, machine translation, context-aware technologies, L2 writing, and digital creativity.

## **Abstract**

Contextualization and interaction are critical to successful L2 learning. However, in English-as-a-foreign-language (EFL) situations where students do not have opportunities to use the target language, contextualized learning and interaction in English is seldom available and learning English is often limited to classroom practices. This leads to students' lack of interest and motivation to learn English. In recent years, as diverse virtual technologies advance, they offer a new learning environment for EFL students. In the so-called metaverse, spaces and situations can be created for learning English effectively. The current study explored potentials of using the metaverse space in English education. We constructed a desert island in Gather.town, created a story, and placed interactive objects on the desert island. In total, 25 middle school students participated in the activity for two hours. The study employed a mixed method research design, including the post-survey and interviews with the students and the teachers. The results showed that the students enjoyed the activity and responded that the activity facilitated their language learning. The interview results also confirmed that the activity was an enjoyable learning experience to them.

## **Conference paper**

In recent years, "metaverse" has been a buzzword in our society. Big Tech companies, such as Meta and Microsoft, have been leading this trend, and its application to education is no exception (Choi, 2022). The surge of online education during the last two years also accelerated this trend. While diverse virtual reality (VR) platforms, such as Second Life and Sims, have been utilized in language-learning classrooms and their educational effectiveness has been explored in recent years, newly emerging platforms are clearly distinguished from them because these newer platforms offer distinctive features, such as proximity (e.g., users can view and communicate only with others whose avatars are close to theirs), the use of avatars, private zones (e.g., users can view and communicate only with those in the same private zone), video chat, and screen share, which were not possible in the previously used VR platforms (Yang & Ryu, 2021). Although new metaverse platforms have gained popularity, due to their short history, research on metaverse platforms in L2 learning has been rare (Fitria, 2021; McClure, 2021; Oh, 2021). The current paper examined the pedagogical possibilities of Gather.town, one of

the new metaverse platforms, in a language-learning classroom. In particular, the current study investigated how the technological affordance of Gather.town facilitated language learning. Using Gather.town, a desert island was created for Korean middle school English learners ( $n = 25$ ). The content was a scenario-based, open-world adventure. The students explored the island, found interactive items, interacted with other students and teachers, completed missions, and escaped the island. The study employed a mixed method: a survey (five-point Likert scale) offered quantitative data and interviews with the students and teachers offered qualitative data.

The survey results showed that the students enjoyed the activity (mean = 4.38), particularly interaction with their peers (mean = 4.24) and the teachers (mean = 4.17) in Gather.town. The students responded that the activity helped them learn English words (mean = 4.45) and English expressions (mean = 4.38). The majority of the students wanted to participate in such activities again in the future (mean = 4.59). During the interview the students said that they liked the activity because: 1) they performed the activity with their peers, 2) they had opportunities to talk with the teachers, particularly a native English-speaking teacher, and 3) it was a new, interesting experience. They also said that they preferred the activity in Gather.town to activities in traditional classrooms or other technology-supported English learning activities. The teachers also said that they enjoyed the new experience and they found that the students quickly adopted the new environment and actively participated in the activity. However, although most of the students quickly learned how to use functions and interact with items or other people in the space, a few students struggled to understand the functions.

The current study particularly focused on contextualization and socialization (interaction between the teachers and learners and interaction among learners). For effective L2 learning, context is critical; however, unfortunately, L2 learning, particularly English as a foreign language (EFL), often lacks context (Lee & Park, 2020). Considering that language is not inseparable from the context in which it is used, a lack of context seriously undermines L2 learning effects and at the same time demotivates students (Zheng et al., 2015). The recent development of VR technologies provides an alternative space for contextualized language learning. The environment of the VR world can provide a meaningful context for L2 learning, and learners can acquire the target language in situ, which often leads to better L2 learning and retention. It can also increase learners' intrinsic motivation and interest in L2 learning (Lee, 2019; Lee & Park, 2020; Sykes & Reinhardt, 2013). Gather.town allows users to create and build their own spaces according to their purposes and needs. Using this functionality, we constructed a desert island, developed a scenario, and curated L2 learning activities on the island. The space became a learning context within which portals to different locations and interactive objects were embedded. The current study showed that this discovery learning within a context increased students' interest and motivation towards learning.

In addition, interaction was another essential key to language learning in this study. Prior studies reported several distinctive features of Gather.town, including diverse modes of communication (video, audio, and text), proximity, use of avatars, and private zones, which could benefit student learning (Fitria, 2021; Tu, 2021). The current study also found that these features particularly facilitated interaction among users. The study included diverse learner-learner and teacher-learner interactions. First, the students explored the island in pairs so that they could communicate and help each other in finding answers. Second, the students participated in a sentence-completion activity. In this activity, each pair had half of a sentence, and they found the pair who had the other half by asking around in the space. Last, the task included two interactive activities in which they interacted with the teachers by asking and answering questions. The results showed that the students preferred working in pairs and enjoyed interaction with their peers and the teachers. In fact, these interactive activities were possible due to the technological affordances of Gather.town. The proximity feature allowed the students to move around in the space and interact with each user or individual pair. Diverse modes of

communication increased their interaction among the users. In addition, the use of avatars, private zones, and proximity features enabled a safe environment, which, in turn, reduced the students' language apprehension and promoted interaction in the target language. The students also responded that the task helped them learn English vocabulary and expressions and viewed it as a valuable L2 learning experience. In sum, the results showed that the idiosyncratic features facilitated students' discovery learning, promoted interaction, and increased enjoyment of learning. This study further showed that the task in the user-created metaverse space facilitated the students' learning in the affective and language domains.

## References

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- Choi, S. (2022, March 4) Let's find the solution to future education in Metaverse. *The Korea Economic Daily*. <https://www.hankyung.com/it/article/202203043508v>
- Fitria, T. N.(2021). Creating sensation of learning in classroom: Using 'Gather town' platform video game-style for virtual classroom. *Education and Human Development Journal*, 6(2), 30-43.
- McClure, C. D., & Williams, P.N.(2021). Gather.town: An opportunity for self-paced learning in a synchronous, distance-learning environment. *Compass: Journal of Learning and Teaching*, 14(2), 1-19.
- Lee, S-M. (2019). Her story or their own stories? Digital game-based learning, student creativity, and creative writing. *ReCALL*, 31(3), 238–254. <https://doi.org/10.1017/S0958344019000028>
- Lee, S-M., & Park, M. (2020). Reconceptualization of the context in language learning with a location-based AR app. *Computer Assisted Language Learning*, 33(8), 936–959. <https://doi.org/10.1080/09588221.2019.1602545>
- Oh, H. (2021). Contents application methods of metaverse platforms by type examples. *The Journal of Humanities and Social Sciences* 21, 13(1), 2673-2684.
- Sykes, J., & Reinhardt, J. (2013). *Language at play: Digital games in second and foreign language teaching and learning*. Upper Saddle River: Pearson.
- Tu, J. T. H.(2021). Meetings in the metaverse: Exploring online meeting spaces through meaningful interactions in Gather.town [Unpublished master's thesis, University of Waterloo]. <https://uwspace.uwaterloo.ca/handle/10012/17984>
- Yang, E., & Ryu, J.(2021). Effects of peer and teacher avatars on learning presence and visual attention in the metaverse learning environment. *The Journal of Educational Information and Media*, 27(4), 1629-1653.
- Zheng, D., Biscoeff, M., & Gilliland, B. (2015). Vocabulary learning in massively multiplayer online games: Context and action before words. *Education Technology Research & Development*, 63, 771–790. <http://doi.org/10.1007/s11423-015-9387-4>