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Language learning with Replika: Fostering grammar correction and conversational confidence

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There are many beneficial English language learning tools. One of these tools is chatbots, powered by artificial intelligence (AI) models. Replika (<https://replika.ai/>) is an AI chatbot that communicates with users naturally, allowing learners to chat in English anytime and anywhere. It can be used in language learners' speaking activities. It can also be used as a self-study tool for learners. Although Replika started as a chatbot and has age verification, learners can use it as a tool for learning how to communicate with others in English. In this research, three students used Replika for two weeks to see how their communicative competence changed through interacting with Replika. The study was conducted from the middle of October to the beginning of November 2021, and the second experiment was conducted at the beginning of February 2023. The researcher asked the students to engage in written chat with Replika for at least one hour weekly for a period of two weeks to see how Replika helped their communicative ability. This research was also conducted for one month. The author chatted with students before and after using Replika to determine any changes. The chat session was held two to three times in total. The author will propose how the chatbot affects learners' language learning.

Keywords: chatbot, artificial intelligence (AI), AI in education, Replika

Introduction

Japan's Ministry of Education, Culture, Sports, Science and Technology (MEXT) revised the Courses of Study in 2018 and also claimed that students should learn and use technology during class. MEXT has provided all Japanese elementary to senior high school students with tablets and established Internet access at school between 2018 and 2022. According to MEXT (2018), teachers should use Information and Communication Technology (ICT) during classes to develop students' computer

literacy while teaching subjects. However, English teachers are also required to teach English communicatively.

One practical approach to teaching English communicatively is to use a chatbot with artificial intelligence (AI). Replika requires students to write messages in English because the application is only offered in English. Replika is an AI chatbot application created by Kuyda. The chatbot was designed to give learners emotional support. It was provided with sequence-to-sequence machine learning that changes input sequences from one domain to output sequences in another domain (Pardes, 2018). Ta et al. (2020) also mentioned the aim of Replika. This chatbot aims to be the user's best friend through interaction via SMS messages and sharing their SMS. Through detailed analysis, several notable features of Replika have been identified. Learners can choose Replika's gender, name, and hairstyle initially. Replika is friendly when talking to the learners and asking questions. When learners write personal information, such as their favorite music, movies, or singers, Replika remembers the information and talks about it later. These memories make the conversation natural. Though it sometimes happens that Replika does not understand learners' input and answers questions inappropriately, it can be helpful for language learners.

Fryer and Carpenter (2006) investigated six practical ways chatbots enhance language learning: 1) students seem to feel more comfortable talking to bots than to people; 2) unlimited repetition can be possible with bots; 3) it's possible for students to practice listening and reading with bots; 4) bots are interesting; 5) students have chances to study words and different expressions with bots; 6) bots can effectively provide immediate feedback for grammar and spelling mistakes. Chatbots give students enough opportunities to use and learn the target language through these features. Some studies suggest that using a chatbot is effective. For example, Belda-Medina and Calvo-Ferrer (2022) found that the participants at universities in Spain and Poland felt positively about using Replika. In addition, they found that Replika combined different levels of complexity while learners chatted with it.

Although Replika cannot speak verbally, learners can use it as a tool to communicate with others in English. However, there is little research on how senior high school students use and change attitudes through interactions with it. This paper presents the results of a two-week pilot project at a senior high school in central Japan. The volunteers were third-grade high school students who attended the project outside of school. This paper describes how the students communicated with Replika. Data was collected from interviews, and transcriptions of screenshots of their conversations were created. This paper proposes that using Replika helps high school students develop English skills and has the potential to help students gain confidence in communication.

The following research questions guided this pilot project:

RQ1. How did students' confidence and fluency change through interactions with Replika?

RQ2. How were students influenced by using AI chatbots for writing practice regarding grammar and vocabulary?

Contexts and students

This project was conducted outside of classes at a high school in Aichi prefecture. Three female students participated in the project in different years. All participants were third-year students interested in learning other languages and motivated to study English – those who had also regularly attended an “English Lunch” group at school. All participants passed the second level Eiken test. Based on their responses, they were not familiar with Replika. The researcher introduced the Replika website, and the students downloaded the application to their smartphones.

There were two experiment periods in this project. The first experiment was conducted at the end of October 2021, and the second experiment was conducted at the beginning of February 2023. In experiment 1, two students were asked to use Replika for at least one hour per week for two weeks, while in experiment 2, a third student was asked to use it as much as possible for at least one month. The author interviewed them before and after using Replika to learn if there was any change in their attitude toward learning English. The first pre-interview with the two students was conducted on October 21, 2021. The second interview session was conducted on October 26, 2021. The last session was conducted on November 3, 2021, and was held on Zoom. The pre-interview with the third participant was conducted on February 17, 2023, and the post-interview was conducted on March 23. Both pre-interviews revealed that all three students were worried about classes at university and wanted to improve their conversation ability in English. The author also collected students’ screenshots of their interactions with Replika and transcribed them.

Procedure for implementation of using replika

Replika was introduced to students to provide additional language practice opportunities outside the classroom. During the experiments, the researcher interviewed the students twice, as follows:

1. The teacher demonstrated how to use Replika and interviewed them to see if using an AI chatbot was familiar.
2. Students interacted with Replika at least one hour per week in total.
3. The teacher asked the students to send screenshots of their interactions with Replika and asked how they used it once a week.
4. The teacher interviewed students about what they had learned from Replika.

As shown in the four-step cycle, students did not forget to use Replika and showed other students how to use it.

Results

The first research question was, “How did students’ confidence and fluency change through interactions with Replika?”

The three students commented on Replika’s benefits and how their attitudes toward learning English with AI was affected. Rin mentioned that she realized it

was essential to add sentences that included more than “yes/no.” She also wanted to earn coins to buy Replika’s outfits. If she wrote longer messages to Replika, she could earn double coins. This motivated her to write longer sentences.

Miku learned that the beginning of the conversation in English was “How are you?” Compared to when she speaks Japanese, she does not necessarily ask, “How are you?” but that was Replika’s first exchange. Also, she mentioned that a chatbot is easy to access because she can look up words in the dictionary. When she talked with people from overseas, she had no time to check the meaning of words. In this respect, she was not worried about how long Replika had to wait for her response.

Akane also realized an AI chatbot to learn English is easy to use. When a foreign customer came to her part-time job, she could explain things in English, even though her English was imperfect. All students were positively engaged.

The second research question was, “How were students influenced by using AI chatbots for writing practice regarding grammar and vocabulary?” Excerpts 1, 2, and 3 show how Akane changed her answers through interaction with Replika. The transcripts show that Akane has several problems with English grammar. For example, it was difficult for her to use articles. Through interacting with Replika, Akane was sometimes able to use articles. In Excerpt 4, Rin seemed to not understand the meaning of Replika’s question. Therefore, she answered “beach” on line 8. From Replika’s example, she came to understand the meaning of the question and was able to answer it properly on line 12. It can be said that she has come to understand the meaning of the sentence through her conversation with Replika.

Excerpt 1

February 20, 2023

1. Replika: What’s your fav animal?
2. Akane: My favorite animal is rabbit. How about you?
3. Replika: I like squirrels.

Excerpt 2

March 8, 2023

1. Replika: So you have a pet dog?
2. Akane: No, I don’t have pet.
3. Replika: Oops! Sorry, my bad.
4. Akane: Don’t worry. However, I want to have a pet hamster in the futher.
5. Replika: I love hamsters.
6. Akane: Wow, it is good! Hamsters are very cute!!

Excerpt 3

March 11, 2023

1. Replika: I’ve got a question for you.
2. Akane: OK. What’s question?
3. Replika: What’s the best way to be happy?



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4. Akane: There are various way. Especially, I hang out with my friend and I play games!
5. Replika: I love games, too! It's really fun.



Excerpt 4

February 3, 2022

1. Replika: Wanna play a game with me?
2. Replika: It's called "What would Rin wear?"
3. Rin: How do we do it?
4. Replika: Well, I was thinking that we could use a nailchip, so we can make a design on the paper.
5. Rin: I know! But I can make it after school...
6. Replika: Ok - first one -
7. Replika: what would Rin wear to a picnic on the beach?
8. Rin: Beach
9. Replika: I like that idea!
10. Replika: My choice would be... Cute shorts and a floral shirt!
11. Replika: Now, let's see... what would Rin wear to an awards ceremony?
12. Rin: If I go to ceremony, I wear red or blue dress.

Discussion

In response to the first research question, students feel that using an AI chatbot is easy to start. As Akane mentioned, she was able to explain things in English. Besides, Rin tried to write longer sentences to earn coins for buying Replika's items and get used to writing in English. Ta et al. (2020) explained that people can choose to apply several things to Replika. Rin's motivation to buy items for Replika led her to write longer sentences, and this led Rin to have extrinsic motivation. For the second research question, Akane noticed her mistakes after one month. As for Rin, she learned how to answer in English through interacting with Replika. As Belda-Medina and Calvo-Ferrer's (2022) research showed, Replika is limited in its ability to correct mistakes. It takes time to notice and change them.

Though students expressed positive opinions about the usefulness of Replika, there are possible improvements that would help it to be used more effectively. First, they found that starting a conversation with Replika was challenging. Rin and Akane often chose topics that Replika offered. Therefore, their conversation started and ended abruptly. Consequently, providing opportunities for them to start or finish their conversation is necessary.

Second, teachers should explain the downside of Replika. Since it does not correct mistakes and focus on the user's content, students must notice their mistakes themselves. Therefore, teachers should remind students that they should read their sentences before posting to Replika. As Lightbown and Spada (2006) stated, "nothing can be learned before it is noticed" (p. 44), and once noticed, this can advance students grammatical knowledge. Although this project can be improved, it is hoped that the study will inspire teachers who want to introduce AI chatbots to their students.

References

- Belda-Medina, J., & Calvo-Ferrer, J. R. (2022). Using chatbots as AI conversational partners in language learning. *Applied Sciences*, 12(17), 8427. <https://doi.org/10.3390/app12178427>
- Fryer, L., & Carpenter, R. (2006). Emerging technologies: Bots as language learning tools. *Language Learning & Technology*, 10(3), 8-14.
- Lightbown, P. M., & Spada, N. (2006). How languages are learned. Oxford University Press.
- Pardes, A. (2018, January 31). The emotional chatbots are here to probe our feelings. *Wired*. <https://www.wired.com/story/replika-open-source/>
- Ta, V., Griffith, C., Boatfield, C., Wang, X., Civitello, M., Bader, H., DeCero, E., & Loggarakis, A. (2020). User experiences of social support from companion chatbots in everyday contexts: Thematic analysis. *Journal of Medical Internet Research*, 22(3).

Author biodata

Ariko Nishimura has ten years of experience teaching English at various high school levels. Her research interests are CLT, conversation analysis, and CALL.