DUOLINGO as a supplementary learning resource: A Pilot Study

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I Introduction

The worldwide COVID-19 pandemic forced many academic institutions, both in Japan and overseas, to temporarily abandon classroom-based lessons wherein direct face-to-face interaction could promote the transmission and spreading of the virus. The majority of institutions, the authors' included, opted instead to provide lessons and educational support online. This shift presented both challenges and opportunities. In a very short space of time, it was necessary for the authors and the other English teaching staff at their institution to redesign the syllabus and content of the compulsory English class for first year students. An 'on-demand' approach was selected whereby grammar and reading-focused content was available as narrated Power-Point slideshows and listening and communication-based content was supplied in video format. On-demand lessons were selected in preference to real-time lessons via online conferencing software because of data restrictions some students were subject to when using the internet. Furthermore, lesson content had to be designed to accommodate a not inconsiderable 30 percent of students who did not own a personal computer and only had access to a smartphone device[1]. In order to supplement this content, the language learning application Duolingo was selected. After explaining how this application is designed to work and why it was chosen by the authors, this paper will present a reflection of its efficacy over a semester-long trial period.

II MALL (Mobile-assisted language learning)

Currently in Japan more than 85 percent of the population uses a smartphone and for the age group 10~29 that number is closer to 90 percent[3]. Certainly, it is almost unheard of to encounter a university student without a smartphone these days. Mobile-assisted language learning (MALL) refers to all applications and activities that help promote the acquisition of language via the use of such mobile devices (Kukulska-Hulme, 2009). Kukulska-Hulme (2018) asserts that MALL is not simply a subtype of CALL (computer-assisted language learning). The mobile and portable nature of the technology enables very different usage habits and unique ways to interact with, not only the technology, but also the surrounding physical environment. As 5G technology improves internet connectivity and coverage, it seems certain that MALL will become even more important from hereon.

III What is Duolingo?

Duolingo is a language learning application available on both a proprietary website and mobile platforms. At current, the service claims to have in excess of 300 million users. The service is available free of charge to both learners and educators, although a subscription-based premium version is also available. As of October 2020, Duolingo offered 98 different language courses in 38 languages[2]. The application primarily trains users to translate vocabulary and grammatically correct sentences backwards and forwards between their mother tongue and the target language. Users are able to see the language in text form and hear model pronunciation examples. Learning modules are divided according to common themes such as animals or shopping, and grammatical structures such as simple past tense or conditional sentences. After having memorized the target language through drilling exercises, users take a final test. Passing the final test 'unlocks' the next level which progresses in difficulty. The application awards points for the successful completion of tasks, and users are able to compare their performance with other language learners on a league table. In this way, Duolingo has

managed to take conventional language learning tasks and gamify them in a way that appeals to its users.

Duolingo has attracted some criticism for being based on conscious learning. Krashen (2014) argues that true language competence arises, almost exclusively, from subconscious learning encounters. Schmidt (1990), however, contests that conscious processing facilitates learning. Discussion of the role of consciousness in learning is best saved for another paper but there is a growing body of research e.g. Munday (2016), Bennani & Mosbah (2017), Loewen, Isbell & Sporn (2020) which suggests that Duolingo and other such applications are of real and measurable pedagogical value.

IV Why Duolingo?

As mentioned in the introduction, Duolingo was selected as a supplementary learning resource for first year students enrolled in the university's compulsory English class. Such an approach was not without precedent (Lord, 2016) and the conditions for it, however unfortunate, seemed ideal. Duolingo is something that need only be done in short bursts (five to ten minutes per day is sufficient). The application itself is both free to download and use. It is available in multiple languages and therefore could be used by Japanese and overseas students alike. The teacher account enabled the creation of a curriculum and the monitoring of student progress.

In the first lesson of the semester, students were given a short tutorial on how to use Duolingo and were sent a link to join the institution's Duolingo class. It was explained that progress on the application would count for up to ten percent of their final grade in the English class. A week or two later, a reminder was sent out in an attempt to maximize participation. About 70 percent of students registered and created user accounts. Throughout the semester, regular reminders were given to encourage students to continue using the application.

V Results

The overall participation rate was somewhat disappointing considering that the application was free and only required a minimal investment of time. Lack of intrinsic motivation may have been an issue with students who failed to engage with the application on a regular basis. Four students registered but never used the application and 50 students registered and only used it once. Garcia Botero et al (2019) also observed a high incidence of such "try-and-quit" users. This could perhaps have been tackled by rewarding participation with more points towards the class' final grade. Timely monitoring of student participation was impeded by having only one Duolingo class for the entire year group of students. Creating multiple Duolingo classes would have enabled closer teacher supervision and more effective feedback and encouragement.

Another possible explanation for students abandoning the application may have been online fatigue. With all classes taking place online, students and teachers found themselves spending far more time in front of a digital screen than they had previously been accustomed to. Students may have decided that time away from their screens was worth more than the potential ten percent towards their final grades by studying with Duolingo. For this reason, it may be the case that using Duolingo as a supplementary learning tool may work best in conjunction with regular classroom-based lessons.

Nevertheless, 66 students completed over 90 lessons representing an average of one lesson for every day of the semester. Most impressively, it was discovered that 10 students were still using Duolingo two months after the semester had finished.

Somewhat disappointingly, length and frequency of engagement with the application did not appear to have a significantly positive influence on students' performance in the final exam of the class. Pre-tests, progress tests, and post -tests that evaluate examinees' knowledge and comprehension of the vocabulary and grammar structures taught by Duolingo, such as those administered by Bennani and Mosbah (2017), should be implemented to assess the application's true efficacy in future studies.

VI Conclusion

This paper has briefly described the adoption of Duolingo as a supplementary learning tool for first year university students studying remotely via online. For the numerous reasons outlined in this paper, the trial wasn't as successful as might have been hoped. However, it is the belief of the authors that Duolingo does indeed have potential as a supplementary learning resource. Regardless of how the current pandemic may affect future lessons, it is the intention of the authors to take the lessons learned from this trial and use them to more effectively utilize Duolingo in the future and report those results in a subsequent study.

Notes

[1] According to results of ネット環境アンケート（internet environment survey）conducted by the Kyushu International University, Department of Academic Affairs, 24 April 2020.

[2] According to Duolingo's official website https://www.duolingo.com/courses/all Accessed 1 November 2020.

[3] 2019年のスマホ普及率を年代・地域・年代別に大公開，Marketing Research Camp https://marketing-rc.com/article/20160731.html Accessed 1 November 2020.

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