

Gamified Enough ? : Student Reaction to the Duolingo Language Learning App in a University Setting

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Abstract : The language learning app Duolingo has a classroom learning platform, Duolingo for Schools. This paper shares the results of a pilot study conducted with lower level English classes in a university setting. A total of twenty-two students participated, with all but one being Japanese L1 speakers. The chief reason for choosing the app is that it heavily utilizes grammar translation methodology, which is easily accessible to low level Japanese learners of English as it is similar to the instruction many receive in junior and senior high school. Another reason for using this platform is the lack of level appropriate materials for the students. Based on departmental placement testing, the students are pre-A1 or A1 within the CEFR levels, which makes finding materials that are both level and age appropriate challenging. The app itself has gamified elements, which are designed to maintain the users' attention and increase motivation. The author and his teaching partner tracked student use of the app and asked students their opinions of the app. Students showed some enthusiasm at first, though that enthusiasm waned as the semester progressed. However, initial findings show that the app, while potentially useful in a higher education setting, would require careful planning and deployment to fully utilize its strengths.

Keywords : MALL, gamification, grammar-translation

Introduction and literature review

Duolingo, the language learning mobile application claims to have more than 300 million active users (Duolingo, n.d). The platform offers 85 different language courses, available in 24 different languages. Among these courses is the option for Japanese speakers to study English. It is this option that makes it a potentially useful addition to an English language classroom in a Japanese university, The addition of the Duolingo for Schools learning management system (LMS) in 2015 made it more useful for instructors as the LMS allows for simple tracking of students' progress and the ability to create assignments for students. It was in this digital environment that my teaching partner and I decided to conduct a pilot study using the Duolingo for Schools platform as a supplement to the textbooks for low level (CEFR pre-A1) classes. This decision was based on multiple factors. One factor was the lack of appropriate materials, as most materials available at that level are aimed at a much younger demographic, while most material aimed at university students are of a much too difficult level. A second factor that motivated the use of Duolingo is the app's utilization of the grammar-translation (G-T)

method. (See appendix 1 for examples of the types of questions found in Duolingo.) This method is well known by Japanese students as it is the main method of English teaching in most schools, meaning that Japanese university students would be comfortable using the app independently without much of a learning curve. Additionally, and equally important, the app is free for students to download and use. While Duolingo offers a premium version, the pay version simply removes the in-app advertisements and allows learners to download lessons for offline practice.

As an app, Duolingo borrows elements of gaming, placing it within the arena of gamified language learning. Gamification, of course, refers to “the use of game design elements in non-game contexts” (Deterding, Dixon, Khaled, & Nacke, 2011, p. 10). The two major elements that identify it as such are the usage of experience points (XP) as a marker of progress, with 10 XP being awarded for a typical unit, and bonus points awarded for correct answer streaks. Another element borrowed from gaming is the concept of unlocking. To proceed to a new lesson, the user must first complete previous lessons, much as a player in a video game must first complete certain tasks before being allowed to proceed to the next level. Other elements of gamification are present in Duolingo’s user experience, such as the existence of leaderboards, daily practice streaks, in app currency that can be used to purchase power-ups such as a streak freeze, which allows the user to miss a day of practice but still maintain her streak, or buy outfits for Lingo, the app’s mascot character. However, some have claimed that the gamification aspects of Duolingo are only superficial. Munday (2016) found that “even though Duolingo is presented as a very modern-looking gaming app, in reality most of the activities necessary to complete the lessons are very traditional and are heavily based on translation, dictation, and pronunciation” (88). Similarly, Lotherington (2018) notes that Duolingo “is to be sharply distinguished from immersive role-playing games, where the learner is immersed in a digital world and must learn to communicate and act within that world” (207). This distinction is an important one, and will be discussed in more detail in the conclusions. Another critique of the app is the lack of a true social element. Language use, by definition, is a social activity. However, Nushi and Eqbali (2017) make specific reference to this in their largely positive review of the app, stating that “the lack of human interaction and real conversation in the app needs to be mentioned,” (96) and point out that being able to use grammar and vocabulary in the app is not the same as being able to use it with actual speakers of the language. Several other researchers make similar notes, with direct reference to the use of Duolingo in a classroom setting. García Botero and Questier (2016), working with higher education students in Colombia, found that students, even when presented with detailed instructions on how to use Duolingo, need “a combination of incentives, scaffolding, and curricular integration” (154) to fully utilize the app.

However, some research has shown that at least some users do respond positively to the app’s gami-

fied aspects. In contrast to what Lotherington found with her personal experience with the app, Bogdan (2016), in his personal case study, found the gamification elements interesting and encouraging to the point that he maintained a daily use streak of 600 days, calling the app “quite addictive” (209). Huynh and Iida (2017) found similarly that the daily streak, which they termed “winning streak” could be a strong motivating factor for users, particularly as the streaks became longer, noting that learners become more motivated for fear of losing long term streaks due to the time and effort needed to achieve such streaks.

One final research claim should be addressed, and it is a claim made by Duolingo itself, based on research that the developers of the app commissioned. According to research done by Vesselinov and Grego (2012), using Duolingo for 34 hours is as effective as a semester of a university level language course. This figure is touted regularly in the load screen within the app, so anyone who has spent even a short amount of time using the app will likely have seen this number. However, Krashen (2014) takes issue with the claim, delineating a difference between conscious learning and subconscious language acquisition. Krashen states his belief that Duolingo promotes conscious learning, which does not lead to language competence. He cites work from Mason, 2004 ; 2011 ; and Mason, Vanata, Jander, Borsch, and Krashen, 2009 that shows that subconscious learning is much more effective at promoting language acquisition.

As the above summary shows, there is something of a split in opinion on the usefulness of Duolingo as a means to learn a language. It was against this backdrop that my teaching partner and I began using Duolingo in the classroom to see if it would be a useful addition to the university classroom.

Methods

For this research, students in two low level sections of required English courses for English Language majors at a private university in the Tokyo region were given regular assignments for one semester on Duolingo using the Duolingo for Schools platform. The students were enrolled in four English courses taught by the author and his teaching partner. The content of the courses were connected thematically, but there was little direct overlap of content. The author taught reading and writing courses while his teaching partner taught speaking and listening courses. While there is no definitive measure of the students' English levels, according to the departmental placement test, these students were CEFR pre-A1 to low A1. In total, there were twenty two students (eleven per section), and all but one of the students were native Japanese speakers. The one non-Japanese student was from Vietnam but had gone to secondary school in Japan. The students had regular English classes daily, with the four skills divided into separate classes. On Mondays, Wednesdays, and Fri-

days, students were enrolled in two English classes ; one focused on reading and one focused on listening. On Tuesdays and Thursdays, students had one English lesson ; focused on either writing or speaking.

Students were given surveys in class, with questions in both English and Japanese (appendix 2), three times throughout the semester ; once at the beginning, once at the midpoint, and once at the end. Students, answering on paper, were allowed to answer the questions in either Japanese or English. They were asked questions about how much they used the app, as well as whether they enjoyed using it, and if they thought that their English skills and study habits had changed at all throughout the semester. Although twenty two students were enrolled in the courses, only eighteen students regularly attended and participated in class and were present to give their answers for the surveys.

In addition to the surveys, students were given homework assignments using the app, in addition to their other, textbook and project based assignments. Typically, students were given two assignments a week in Duolingo. The assignment periods were usually three or four days in length. Most often, these assignments consisted of a set target for number of experience points (XP) for students to earn during the assignment period. However, a few times, students were assigned designated lessons within the app. Students' progress in XP was also tracked even in periods when assignments were Duolingo units rather than XP.

Results

Tracking students' XP, the first few weeks show an initial surge followed by a quick drop in usage, as can be seen in figure 1. While there are several factors that can explain this, which will be dealt with in more detail in the discussion section, one important factor in explaining this initial spike is the ability for users to test out of skills and units that they feel they know well enough without practicing in the app. This allows users to accumulate large numbers of XP in a very short time. As the initial lessons within Duolingo focus on very simple basics, even pre-A1 level students were likely able to test out of several units.

As this research was carried out at a small scale and was only a pilot study, little statistical analysis was carried out, other than noting the totals of XPs students earned for each assignment period. As noted above, most often students were given two Duolingo assignments a week, usually a set target for number of XP for students to earn during the assignment period. However, on three occasions, designated lessons within the app were assigned, which is reflected in figure 1 by the lack of a bar for assignment XP in assignments four, five, and six. While XP progress was tracked, of more concern to

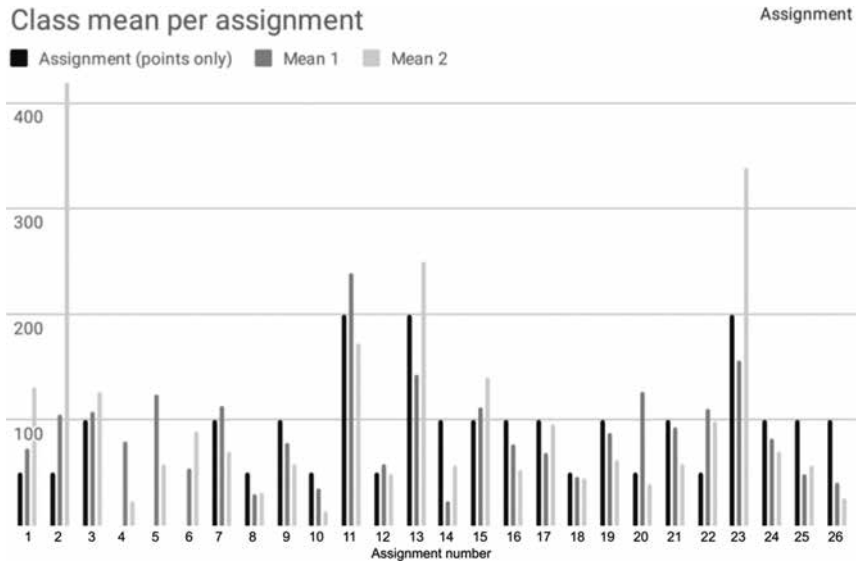


Figure 1 : Assigned XP and class means for each assignment. Mean 1 = mean for section 1, mean 2 = mean for section 2.

the author and his teaching partner were the students' responses to the surveys administered three times throughout the course of the semester. (See the appendix 2 for a full list of questions.)

Initial survey

Students were asked at the start of the research whether or not they had ever used either computer software or mobile apps for studying English. Eleven of nineteen responding students stated that they had never used any sort of computer- or mobile-based English learning tools. Of the remaining eight students who stated that they had used some sort of computer or mobile learning aid, two students had used a translation app, three had used a TOEIC study app, two had used TED, and one had used an unspecified mobile app. The majority of the students thus had not used mobile apps or computer software as standalone language learning tools, and were likely unfamiliar with apps such as Duolingo.

Students were also asked if they had any expectations for using Duolingo. Many students realistically hoped that Duolingo would help with learning the basics of grammar and building their English vocabularies. In what the author feels are representative, if somewhat more in depth than their classmates' answers, two students wrote as follows :

「文法、単語どちらのスキルも上げたい。基礎はしっかりできるようにしたい。」(I want to improve my grammar or vocabulary. I want to become more firm with the basics.)

and

「単語の置き換えをしながら、文の意味を理解できそうなので文法などを覚えたい。」(It looks like you can understand the meaning of sentences while doing vocabulary replacement, so I want to remember grammar and the like.)

A few students, however, did have higher, somewhat unrealistic goals. For example, one student wrote, “I want to become able to translate English into Japanese immediately. I can be understood even if I cannot translate it and wants to become able to answer it,” presumably meaning that by using Duolingo they hoped, by the end of the term, to improve to the point of not needing to take the time to translate each utterance before responding, in conjunction with regular English classes, of course. This response was very much in the minority.

Overall, the initial survey seems to show that students were somewhat enthusiastic and mostly realistic about the possibilities of Duolingo with one student responding that they “want[ed] to have fun learning English.”

Midterm survey

By the middle of the semester, on average students were no longer consistently completing their assigned number of XP, as can be seen in figure 1. This is consistent with midterm survey results, showing a shift in students’ attitudes towards the app away from the mostly positive initial reception.

One item, asking if students were regularly using Duolingo, drew a varied response. On the positive side, nine students responded that they were faithfully completing the homework. The nine students who responded negatively to the question gave a wide variety of answers with reasons given for their lack of use ranging from being too busy with a part-time job to not using their phones very much so they were not using Duolingo. One student answered that they were not using Duolingo because they were tired of it.

This comment of being tired of the app leads into the responses to the second question on the midterm survey. The students were asked “Do you enjoy using it?” Of the 18 responses, nine students responded that the app was at least somewhat fun, often answering the question by simply stating “Yes,” and not expounding upon their answer. One student answered, “Sometimes. At first it was easy, but it got harder,” showing that while they at least didn’t dislike the app, they were showing possible misgivings.

Of the remaining 9 students, seven students answered that they were not enjoying using the app. Two students gave answers that were similar to the above student who stated that the app was getting more difficult :

「最初は楽しかったけど、今は楽しくない。」(It was fun at first, but now it isn’t fun.)

「最初は楽しかったが少しあきてきた。」(At first, it was fun, but I have gotten a little tired of it.)

All of these answers, both from students who were self-reportedly somewhat enjoying the app and students who were saying they were not enjoying the app, show a certain amount of app fatigue setting in by the middle of the semester.

Another question on the mid-semester survey asked the students, “Do you think your English ability has changed?” To this question, the unanimous answer was that, yes, the students did feel as though their English ability had changed. Of course, it is impossible to say how much of that change came from the app and how much came from regular university level English classes. While the written survey was presented ambiguously, without specifying changes due to Duolingo, the survey was verbally explained in both English and Japanese, leaving it unlikely, though still possible, that students would have thought the question was not directly addressing changes to Duolingo. While students did not show great enthusiasm in the midterm questionnaire, they at least had the perception that the app was making some difference in their ability.

One last question of note asked the students if they would like to see any changes in the way that Duolingo was being utilized. While 14 of the students responded that no change was necessary and two of the students appear to have misunderstood the question, two students’ answers were of particular note :

「課題で Duolingo を出るのはとても便利で良いと思います。」

「Duolingo で習ったパートを次の日の授業で使えると、とても覚えやすくなると思います。」

The students were asking that the practice that they did using Duolingo be incorporated into the next day’s lessons at school. This is an issue that the author and his teaching partner noted and will be discussed later in this paper.

End of semester survey

The final survey was conducted on the last day of classes and 14 students submitted answers to the questions. The questions of the final survey were very similar to the mid-semester survey, but the answers showed at least some difference, particularly with regard to the question about whether the app was fun to use or not. When asked, “Did you enjoy using [Duolingo]?,” nine students — the same number who answered at midterm that they enjoyed using the app — answered that it was fun, with one additional student noting, 簡単な時は楽しかった。(It was fun when it was easy.) Those nine students represent a larger percentage (64%) of students answering positively than at the midterm (50%). Of course, with such a small sample size, this increase would be statistically insignificant and no conclusion about increasing interest can be drawn. While it is impossible to draw statistically meaningful conclusions towards an increase in interest, it is at least worth noting that there was no observable trend towards less interest and enjoyment.

When asked, “Do you think your English ability changed because of Duolingo?,” 13 of 14 students answered that they felt that Duolingo had at least a small positive impact on their language ability or understanding. This is consistent with the answers on the mid-semester survey. Again, teasing out whether or not the app had any actual effects on the students’ English ability is impossible from this study alone.

Discussion

Given the small number of students using the app over a fairly short period of time, very few concrete conclusions about the efficacy of Duolingo’s actual impact on students’ English language ability can be drawn from this study. However, some useful observations can be made based on the students’ survey responses. One thing that the study suggests is that while Duolingo looks promising and gamified, it lacks elements leading to long-term engagement. Initially, students are presented with true beginner level English lessons, the types of things that they learn in junior high school. These lessons are likely easy for even low level learners, as the students in this study were. Students can enjoy easily racking up points very simply, testing out of entire sections of the course and gaining massive numbers of points without actually learning much.

However, once students *hit the wall* — *encountering unmastered or unfamiliar content* — the lessons in the app become more difficult, and students begin to respond, “it got harder.” The author, having used Duolingo himself, posits that a big part of the problem here is that Duolingo, ultimately, is simply grammar-translation exercises with a veneer of mobile gaming over the top. Fundamentally, it is just not that exciting an app to use. There is no narrative or game type challenge other than amassing XP and maintaining a streak.

Lotherington (2018) found very similar results, noting that app, while having the veneer of a gamified language learning experience, was simply grammar-translation exercises dressed up without anything to truly engage the students, unlike the possibilities offered by more immersive online experiences such as massively multiplayer online role playing games (MMORPG) and 3D virtual worlds. Sadly, Duolingo does not appear to have moved beyond the critique Godwin-Jones (2011) made of mobile assisted language learning (MALL) technology nearly a decade ago that “for the most part uses of mobile devices were pedestrian, uncreative, and repetitive and did not take advantage of the mobility, peer connectivity, or advanced communication features of mobile devices” (7).

One other problem, mentioned by two students at the midterm, was the lack of integration of the app homework into the next day’s class content. However, Duolingo’s structure and instructor controls in the LMS make this difficult. The problem arises from the structure of the way students must

“unlock” lessons to continue. If the instructor assigns a skill within the app and the student has not made sufficient progress, they will be unable to complete the assignment without first “unlocking” every lesson that proceeds the assigned unit. Based on student comments that once the skills and vocabulary became more difficult, the app ceased to be fun, it seems a reasonable conclusion, that if a student has lagged behind greatly, this can prove to be a daunting task which proved too much for the students in this pilot study. However, if a student has already unlocked the assigned lesson, no mechanism exists within the app to require the student to go back and review, even if the student completed the lesson in question three months ago. For Duolingo to be really useful tool for the classroom, something must be done to rectify this problem. One possible solution would be for Duolingo to include a requirement that when a particular unit is assigned, students who have already completed the assigned unit would be required to complete a review of the unit, review lessons being something that already exist within the app’s functionality.

All that being said, the students did feel that the app helped them improve their English skills. While the veracity of the students’ belief is beyond the scope of this study and paper, student belief is important. If a student truly believes that it will help them improve, it seems fair to argue that they are more likely to stick with it, compared to a student who does not believe it will help, even if it’s not the most exciting and fun activity ever. It would just be nicer if the app provided more entertainment value if it is going to promote itself as part of the gamification of language learning. However, coupled with a well-designed English course with a human teacher, Duolingo certainly could potentially be a useful tool.

Of course, this was merely a pilot study done with only two small sections of a course. While this reality limits the larger conclusions that can be drawn from it, this research does show that further research on the efficacy of the app is warranted. Ideally, similar methods could be followed with larger groups of students, such as an entire university program. It would also be useful to compare results at multiple institutions with various combinations student populations as well as instructors. As stated, Duolingo being a free app, available on nearly all platforms removes many barriers for educators and students, meaning a large scale study would unlikely be hindered by problems such as cost. Further improvements would be needed in the questionnaires to remove any ambiguity due to the wording, making it simpler for multiple educators to be involved in the larger study without skewing the data. While Duolingo is an imperfect language learning app, it has enough positives that it certainly merits further investigation.

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Appendix 1


Examples of Duolingo questions

×  

英語で「スープ」を書いてください



 送信する

×  


正しい意味を選んでください

それらの亀は米を食べます。

1 The turtles eat rice.

2 The turtles drink the rice.

3 Their turtles will eat the tea.

 送信する

×  

空欄を埋めてください

He _____.

1 walks 2 walk

送信する

×  

空欄を埋めてください

We _____ women.

1 is 2 am
3 are 4 an

送信する

×  

これを日本語で書いてください

🦆 The duck drinks milk.

日本語で入力してください

送信する



Appendix 2

Survey items

Questions for initial reflection

1. What are your strengths and weaknesses in English studies? 英語の勉強で得意、苦手なことはなんですか。
2. How and where do you usually study English? どうやって英語を勉強しますか。どこで勉強しますか。
3. Have you ever used a smartphone app or computer software to study English? If yes, what app or software? スマホのアプリやパソコンのソフトで英語の勉強をしたことがありますか。もし「はい」と答える場合、どんなアプリ、ソフトなのか教えてください。
4. What are your expectations for using Duolingo? Duolingo を使ったら何か期待することがありますか。

Questions for midterm reflection

1. Are you regularly using Duolingo? Why/Why not? Duolingo をよく使っていますか。その理由は何ですか。それとも使わない理由は何ですか
2. Do you enjoy using it? 使うことは楽しいですか。
3. Do you think your English ability has changed? 英語力が変化したと思いますか。
4. Have your study habits changed? 勉強の習慣が変化しましたか。
5. Would you change anything about how we use Duolingo in class? 授業で Duolingo の使い方を変えて欲しいことがありますか。

Questions for final reflection

1. Did you use Duolingo regularly this semester? この学期で Duolingo をよく使いましたか。
2. Did you enjoy using it? 使うことが楽しかったですか。
3. Do you think your English ability changed? (Because of Duolingo) Duolingo を利用したおかげで英語力が変化したと思いますか。
4. Did your study habits change? 勉強の習慣が変化しましたか。
5. Do you think you will use Duolingo in the future? この後、また Duolingo を使うと思いますか。

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