



Duolingo and Learner Autonomy: Investigating the Role of Personalization and Gamification in Promoting Self-directed Language Learning

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Abstract

The research is mixed-methods research. This research is different from previous research. This research focus on the role of personalization and gamification in promoting self-directed language learning. While previous research has examined the impact of these features on language learning, few have specifically focused on their impact on learner autonomy in self-directed language learning. The subject is 7th grade at SMPN 2 Sukowono. The research is using questionnaire and interview for the instruments. The results of the questionnaires show that students experience increased learning through Duolingo independently, but most gain mediate level of autonomy and improve their learning outcomes after using Duolingo. The factor that most of the students got at the medium level based on the questionnaire was that some students preferred teaching through the teacher rather than Duolingo. Second, students will prefer to use Duolingo when this feature also provides an explanation of English material, which in this application only provides English practice questions. Furthermore, students do not like it when there is a heart feature, if the heart is used up students cannot play Duolingo anymore and to fill the heart, the students have to play with questions that have been answered, so this feature will make users bored and lazy. And the last is that students experience difficulties at several levels in Duolingo. To get the interview data, the researcher chose three students who get the highest score on the questionnaire. The interview showed that Duolingo also influences their learning, especially learning independently or autonomy.

Keywords: Duolingo, Personalization, Gamification, Learner Autonomy

INTRODUCTION

The concept of self-directed language learning is appealing. As a possible result, the idea has piqued the interest of experts in fields such as education. It was frequently viewed as a way to transition from a teacher-centered to a learner-centered approach to education when used in formal educational contexts. There are several notable characteristics of learners' self-directed language learning and the lack thereof. Because learners with high self-directed language learning believe that learning is a personal responsibility, they are willing to face learning challenges and select learning strategies to best overcome the challenges (Ayyildiz & Tarhan, 2015) such learners typically have specific learning goals and prioritize what is more important, and thus learners have much time.

To improve self-directed language learning, appropriate media is needed. One of the media that can be used is Duolingo. A self-paced language learning program called Duolingo offers lessons on groups of skills such as phrases, adjectives, and food. These skills are largely presented in a linear order, with learners only moving on to new skills after finishing earlier lessons. Duolingo can be accessed on both desktop computers via web and on mobile devices by Duolingo app (Isbel, et al., 2017). Personalization and gamification are game design techniques that use game elements as a driving force for participation.

The educational mobile app Duolingo offers a variety of exercises in vocabulary, reading, writing, listening, speaking, and grammar. These features can increase learner autonomy. This means that the availability of features on Duolingo can increase students' ability to learn and determine their own learning goals. In a sense, Duolingo and learner autonomy are closely related because users will feel their learning outcomes and learning independence after using Duolingo. According to Tsai (2016), Duolingo shows that the participants performed greater extent of autonomous behaviors in their learning. And show that Duolingo promotes learners' learner autonomy, but limitation still exists.

This research is certainly different from previous research. The novelty of this research lies in it is focus on the role of personalization and gamification in promoting self-directed language learning. While previous research has examined the impact of these features on language learning, few have specifically focused on their impact on

learner autonomy in self-directed language learning and this study seeks to fill this gap by examining the impact of these features on learner autonomy.

METHOD

The approach in this study used a mixed-methods approach. The mix-method is used because the researcher wants to produce comprehensive facts in this research. With this method, researcher have the freedom to use all data collection tools according to the type of data needed. If the researcher only uses a single method, the data sought by the researcher is incomplete. As we know, quantitative or qualitative methods are limited to certain types of data collection tools. This method will be able to answer research questions that cannot be answered by quantitative or qualitative research. This study uses mixed-methods because it aims to find out about the use of personalization and gamification features on Duolingo, their autonomy, and their language learning outcomes. Meanwhile, a qualitative approach was used to examine participants' perceptions of how personalization and gamification features affect autonomy and learning outcomes. Thus, it is more than simply collecting and analyzing both kinds of data; it also involves the use of both approaches in tandem so that the overall strength of a study is greater than either qualitative or quantitative research (Creswell, 2009). This research is conducted on 7th grade students of SMPN 2 Sukowono.

Technique of Collecting Data

In the first stage, the data collected by the researcher is the result of students who have filled out a questionnaire. The survey consists of several indicators that relate to participants' use of personalization and gamification features in Duolingo, their degree of autonomy, and their language learning outcomes. After that, in the second stage, namely using interview, the researcher chose three students to be interviewed. Interview was selected to determine students' perceptions of the use of personalization and gamification features that affect autonomy and their perceptions of student learning outcomes.

Technique of Data Analysis

1. Data analysis by using a questionnaire

The researcher used the likert scale. If the respondent answers a favorable question, the scoring using SA:5, A:4, N:3, D:2, SD:1. But if the respondent answers an unfavorable question, the scoring using SA:1, A:2, N:3, D:4, SD:5. After that, the researcher calculated the total of the questionnaire of respondents.

Tabel.1 Level of use of personalization and gamification features, learner autonomy, and language learning outcomes.

Category	Score range
70-85	High level
41-69	Mediate level
20-40	Low level

Source: Hermagustiana & Anggraini (2019)

And next data analysis is using interview. The data analysis process is divided into three major stages following the qualitative analysis framework developed by Miles and Huberman (1994) namely data reduction, data presentation and drawing conclusions.

RESULTS AND DISCUSSION

RESULTS

1. Result of The Questionnaire

Table 2. total number of students' results of the questionnaire.

Name	Total	Score Range
Student 1	68	Mediate level
Student 2	54	Mediate level
Student 3	61	Mediate level

Student 4	59	Mediate level
Student 5	58	Mediate level
Student 6	68	Mediate level
Student 7	61	Mediate level
Student 8	51	Mediate level
Student 9	62	Mediate level
Student 10	61	Mediate level
Student 11	55	Mediate level
Student 12	74	High level
Student 13	67	Mediate level
Student 14	60	Mediate level
Student 15	47	Mediate level
Student 16	58	Mediate level
Student 17	59	Mediate level
Student 18	57	Mediate level
Student 19	55	Mediate level
Student 20	61	Mediate level
Student 21	64	Mediate level
Student 22	62	Mediate level
Student 23	57	Mediate level
Student 24	72	High level
Student 25	68	Mediate level
Student 26	61	Mediate level
Student 27	49	Mediate level
Student 28	64	Mediate level
Student 29	65	Mediate level
Student 30	53	Mediate level
Student 31	52	Mediate level
Student 32	61	Mediate level

As the table above showed, most of them got mediate level, but there are two students who got a high level and no one who get a low level.

2. Result of The Interview

Q1 : Have you ever studied English before? And how do you accelerate learning English?

Student 6: "I only studied English in grades 1–3. There is no English learning for grades 4, 5, and 6. First, there is no English learning because the teacher who teaches English moves to school. Apart from that, no teacher would teach English lessons, this also coincided with the presence of COVID-19 so learning was carried

out online, and English subject was abolished at that time. My way to learn English is by memorizing vocabulary besides that, I watch English movie and also listen to English song, and one of them is using Duolingo to speed me up in learning English. However, when I watch a movie or listen to a piece of music and there are words I may never understand or hear, I record these words in notes."

Student 12: "Yes, I have. I was learning English only in 4 grade. In grades 1, 2, and 3, there was no English lesson. Suddenly, when entering grade 4, there was English lesson. Classes 5 and 6 are no longer offered due to online classes, so the school will no longer teach English. I often listen to English song and use Duolingo to learn English. Besides that, I do private lesson as well."

Student 24: "Never, I studied English in junior high school. Because when I was in elementary school I did not get English lesson so that made me not know any vocabulary at all during elementary school. I only know vocabulary like yes, no, and verb. But after I entered Junior High School, I started learning English. I memorize vocabulary to make it easier for me to learn English."

Q2 : Have you ever played this application? Are you having trouble playing Duolingo?

Student 6 : "Yes I have played Duolingo. The first time I knew about this application was during a pandemic when Duolingo ads appeared on TikTok. I am interested in using this application because I want to learn English. Then I downloaded this application on the Play store and it turned out to be quite fun and increased my knowledge of English material. While playing this application I had no trouble at all. Because for me this app is like playing a game and it is quite fun. So you will not get bored when playing Duolingo. And there are also a lot of characters in Duolingo".

Student 12 : "I used to play Duolingo when I was in Elementary School. I know this application through my aunt. My aunt suggested learning English through this application because this application is quite good for student who are about to start learning English and also the practice questions on Duolingo also help me develop my English skills. The difficulty that I faced was just a lack of vocabulary".

Student 24 : "I never used this app before. I do not think the application makes it difficult for users to play, but I personally only have difficulty with vocabulary. So I often repeat the practice questions that I have done before.

Q3 : When and how long do you spend playing Duolingo?

Student 6 : "I usually play Duolingo after school. Sometimes I play after learning. Usually I play until I overslept. Maybe for a duration of approximately 1 hour".

Student 12 : "I play Duolingo everyday, but if I want to play Duolingo sometimes it can take up to 1 hour. I usually play Duolingo after school."

Student 24 : "I play Duolingo every day. I usually play Duolingo after school and before going to bed. Maybe the duration to play this application is around if in total about 2 hours".

Q4 : When playing Duolingo, did you do it alone or ask for help? Such as help using a dictionary or other people?

Student 6 : "The first time I used Duolingo, I often used the app's translation feature. Now I rarely use translation assistance in apps. But if there are new words and I do not know what they mean, I use the translation feature."

Student 12 : "I do the exercises on Duolingo usually by myself. But if there are words that I do not know, I usually use the translation feature in Duolingo."

Student 24 : "If I do not know the meaning, sometimes I use the translate feature in Duolingo. But I often do it myself without looking at the translation feature in Duolingo".

Q5 : In Duolingo, there is a material that users will learn. Such as the material about noun, verb and etc. Have you ever repeated the material for what reason?

Student 6 : "Yes, I have. At that time my teacher once explained material about conjunctions. And at that time I did not understand the material. He just explained without giving assignments. And I want to be even more proficient in this material. Then I practiced using Duolingo to master the material.

Student 12 : "Yes, I once repeated material on Duolingo. Because I still haven't mastered the material. So I repeated the material again.

Student 24 : "While playing Duolingo, I never tried to repeat any levels or materials in Duolingo. Why is that? Because I will finish all the levels on Duolingo. So I practice the questions in Duolingo according to the order of each level".

Q6 : What are 3 features that you think can improve your skills while playing Duolingo?

Student 6 : "In my opinion, the 3 features that improve my skills while playing Duolingo are the translation features. Because if I do not know the meaning of the vocabulary, I can write it down in notes and remember the vocabulary so I think that is one way to memorize vocabulary quickly. Apart from the translation feature, the speaking feature and listening feature (story) can improve my skills. Because the speaking feature is useful in pronunciation. So that I know how to read the vocabulary correctly. As for the story feature, it can

improve my listening skills. Because usually the user is asked to listen to the answers read by the narrator where the answers are almost the same in pronunciation.

Student 12 : " " "In my opinion, the ability that improves after using Duolingo is that users are usually asked to imitate sentences. Because I can know how to pronounce the vocabulary correctly. The listening feature as well as the speaking feature helps me find out what the narrator is reading. Because I think this feature also improves my way of reading sentences on Duolingo correctly".

Student 24 : "My ability has improved by using the speaking feature, because that feature lets me know how to understand sentences or vocabulary words in Duolingo. The listening feature also helps me understand what the narrator is reading when understanding the text of the conversation. Because usually in this feature, I asked to answer questions on Duolingo and answer the correct answer which is usually the answer that is almost the same in pronunciation".

Q7 : One of the roles of Duolingo is to be able to detect user capabilities. If the user often makes mistakes at a certain level, then at the next level the mistakes made by the user will tend to be repeated. Have you ever been bored with practice questions that are often repeated by Duolingo?

Student 6 : "No, I never get bored when the wrong questions are repeated. Because then I know where the error is and can understand the mistakes I made myself".

Student 12 : "I was once bored when the questions that had been worked on were reviewed again. But in that way, I am proficient with the material".

Student 24 : "Never get bored. I want to quickly get into the material and want to quickly level up. So it helps me to understand English material faster with my own practice."

Q8 : Do you determine the target score that you get every time you play? Then in Duolingo, there is a leaderboard feature, have you ever won the top 5?

Student 6 : "I once set a score every time I played Duolingo such as one day must reach 50 XP. Usually, I determine the value of entering the top 5 rankings. But if you only specify 50 XP, it is not enough to enter the top 3 rankings. I have been in the top 2. Maybe it is because the duration of the game is long enough that I rank in the top 2. So the tip for users to be in the top 5 is that users must be consistent in playing Duolingo and also have to target the value they will get".

Student 12 : "Yes, I'm targeting value. Because if I do not target a score, my ranking on the leaderboard will drop. For ratings, I have been ranked first. I have never ranked below the top 6. Usually, if rank below the top 3, it is because I never played Duolingo."

Student 24 : "If I do not target the value, I just play and raise the level. But for my rating, it was ranked 7".

Q9 : Does this application make it easier for you to study independently?

Student 6 : ""Yes of course. This application makes it easier for me to learn English. It means I can set learning goals by using Duolingo. Such as memorizing vocabulary. I know tips on memorizing vocabulary that suit my way. I also target my score on Duolingo which aims to keep my ranking from dropping. Besides that, I can practice English material questions without going through a book and without the help of other people."

Student 12 : "I think this application makes it easier for me to learn autonomy. Because by using this application, I can learn English by myself without help of a teacher or other people so that I can practice English questions only with the help of this application".

Student 24 : "Yes, for me this application has really helped me in determining my studies. I often practice questions on my own without the help of others. In addition, I can learn to understand my own mistakes when I ask the wrong questions. This helps me with independent learning".

Q10 : How can this application affect learner autonomy in learning, especially in language learning?

Student 6 : "Usually when I have English lessons, the teacher translate of the text or doing exercise. Before the teacher explained the meaning of the text, I already understood it. It is one of the influences from Duolingo, where the vocabulary I know is thanks to learning to use Duolingo. And in my opinion, using Duolingo as a medium for independent learning can help students learn in the class".

Student 12 : "I think the application is very influential in determining me to study independently. Because Duolingo has a reminder feature to do the questions on Duolingo. Apart from that, Duolingo is also very influential in the assignments given by English subject teacher. Because practicing the questions on Duolingo allows me to answer the questions the teacher asks. Of course, my vocabulary has also increased after using Duolingo, and this is one form of influence from using Duolingo as a medium that I use in my own study."

Student 24 : "In my opinion, this application is quite helpful for me in learning English. The influence I get while using Duolingo is that at first I did not know the vocabulary, but now I can, even though I do not memorize all of the vocabulary. Of course, this had an impact on language learning in the classroom when the teacher explained, that I understand a little bit thanks to the vocabulary I got through playing Duolingo".

Q11 : Based your opinion, what are the benefits of using Duolingo?

Student 6 : “In my opinion, the advantage of using Duolingo is I can study, especially learning English, because Duolingo helps me learn independently, namely by practicing English questions, secondly I can set myself when I have to play Duolingo, and lastly my ability in English has improved after using Duolingo. And I can learn English independently at home using this application”.

Student 12 : “As for the advantage that I get, I can understand better to do English questions, maybe because I often practice on Duolingo, so when the teacher gives questions, I can do them. Apart from that, my vocabulary has increased after playing Duolingo, and the most important thing is that I can learn English without a teacher or other people to practice English”.

Student 24 : “The advantage that I got was first, I did not know how to study which was suitable for me. By using Duolingo, it helped me a little, which was a learning method that was suitable for myself. And I often play Duolingo to help me improve my English skills, which increases my vocabulary more than before.

DISCUSSION

1. Discussion of Questionnaire

Based on table 2, the results of this study indicate that most of them have a mediate level of autonomy and student outcomes, 2 students have a high level, and no students have a low level. There are several categories show that most students get the mediate level based on the questionnaire they are working on. Students do not like using Duolingo because it only provides practice questions without any explanation of the material. In addition, some students prefer to be taught by teacher rather than Duolingo. In the heart feature (making mistakes), students must stop or review the previous lesson before continuing to the next level. To fill the heart, students must review the questions they have answered. So students tend to get bored and too lazy to play Duolingo. Finally, students experience difficulties at several Duolingo levels, so they are stuck at that level.

2. Discussion of Interview

Several students indicated that two of them had used Duolingo before. Only one student had never used Duolingo before. Both of them know Duolingo from social media such as Tiktok and the advice of her family. While playing Duolingo, some of them had difficulties while playing Duolingo. The difficulties experienced by students were in the form of vocabulary. One of them had no trouble playing Duolingo. Because according to him playing Duolingo is like playing a game that is equipped with characters that make this application not boring. They play Duolingo every day, they play after school, and in the evening they play again. The duration for students to play Duolingo is 1-2 hours.

Students usually work on their own when practicing questions on Duolingo. They will use help like the translation feature in Duolingo when they do not know the meaning of a word. Students have repeated material or levels in Duolingo. They repeat to master the material so that they understand it better. In addition, there are students who do not want to repeat material that has been done because these students want to complete the problem levels quickly according to the order.

According to students, some of the features that improve them while playing Duolingo include the translation feature. For them, the translation feature is useful for memorizing new vocabulary. Apart from the translation feature, the speaking and listening features also improve their skills while playing Duolingo. They can know how to pronounce the correct vocabulary and they know what the narrator is saying during the talk. So they feel more improved after using these features. Then one student feels that features that can detect user abilities (personalization) make them bored and the other 2 feel unsaturated in these features. Because of this students feel they will more understand or be proficient in reviewing the questions they have worked on. In addition, students want to quickly level up.

Within Duolingo, there is a leaderboard where users can see their ranking. Users can also target value each day. In this interview, several students had targeted grades on Duolingo, and there was 1 student who had not targeted grades. They target the value so that the ranking does not go down. Students also gave tips on how to rank 1 by targeting over 50 XP and consistently playing Duolingo. By targeting the score, they feel this application is very helpful in independent learning. They can determine a suitable way of learning for themselves. Students can practice English questions without the help of other people or books so they can increase their learner autonomy through this application.

Most of them said that Duolingo could influence their learning, especially in English, where initially they only had a small vocabulary, but by using this application, they felt there was an improvement in their learning. And they answered the questions given by the teacher by doing it themselves without the help of others. They think that Duolingo can increase interest in learning English independently so that students know the right strategy for learning, and of course, they know what the target will be achieved.

For students, Duolingo has several advantages, namely that they know what method is suitable for learning English. In addition, their abilities are also better than before. Students can also set their own time for self-study using Duolingo, so the app is quite beneficial for all of them.

CONCLUSION

As mentioned in the first chapter, the purpose of this research is to explore how these features promote learner autonomy and how they can be optimized to increase the effectiveness of language learning platforms. As we can see, this research shows that students experience increased learning through Duolingo independently, but most gain an immediate level of autonomy and improve their learning outcomes after using Duolingo. The factor that most of the students got at the mediate level based on the questionnaire was that some students preferred teaching through the teacher rather than Duolingo. Second, students will prefer to use Duolingo when this feature also provides an explanation of English material, which in this application only provides English practice questions. Furthermore, students do not like it when there is a heart feature, if the heart is used up students cannot play Duolingo anymore, and to fill the heart, students have to play with questions that have been done so this feature will make users bored and lazy. And the last is that students experience difficulties at several levels in Duolingo.

Based on student opinions obtained through interviews conducted, students know the Tiktok application and their families, and one student does not know this application. Usually, they play Duolingo for around 1 to 2 hours. They have difficulty with vocabulary only. Students will use the help of translation via Duolingo if they do not know what it means. This feature helps them memorize vocabulary quickly. The personalization feature in Duolingo sometimes makes them bored, but students understand that this feature makes them understand more about the mistake in Duolingo. While playing Duolingo, some of them are targeting grades because, if they are targeting grades, students can learn independently. They can find a suitable way of learning so they can practice the questions on Duolingo on their own. Duolingo also influences their learning, especially learning independently. They have answered the questions given by the teacher by doing themselves without the help of other people. For them, Duolingo is suitable for learning English. Students can determine when to study English.

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