Encouraging high school students to become autonomous EFL learners: Exploring the possibilities of Duolingo

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Online applications have been reported to support independent language learning, but there seems to exist little evidence concerning the application of gamification and Duolingo. Gamification is the framework for Duolingo due to certain gamified elements in it. One of my main aims was to test the effectiveness of these elements in practice to see whether they are capable of supporting EFL learner autonomy. To examine the research problem, I carried out an experiment with a group of high school students by implementing a pre-task student questionnaire, experimental teaching and post-task interviews. Results suggest that the students need the EFL teacher’s training and support in order to gradually become more independent. An analysis of the data implies that Duolingo’s gamified elements did not engage the students effectively. At this point, it seems that more research is needed on the influence of gamification, including Duolingo, on learner autonomy.

Key words: learner autonomy, gamification, Duolingo, online applications, EFL learners

1. Introduction

Since lifelong learning plays a significant role in our lives, it is vital to deal with learner autonomy because it may enable students to acquire certain skills that help them supplement or continue their studies. Although there is a vast amount of research on learner autonomy (Benson (2013); Bergen (1989 cited in Legenhausen, 2009); Dafei (2007); Holec (1979, cited in Legehausen, 2009); Yagcioglu, 2015), there are a limited number of studies examining the potential benefits of online technology for learner autonomy (e.g. Figura & Jarvis, 2007). Also, students are surrounded with different online applications that teachers may use. Thus, the main objective of my study was to examine how an application using elements of gamification, namely Duolingo, might contribute to an increase in the level of learner autonomy.

My literature review includes the definitions of learner autonomy and a collection of the characteristic features of an autonomous EFL learner. Besides, I also sought for ways of encouraging students to become more autonomous; therefore, I studied the concept of gamification and listed its elements. In the empirical research, I examined high school students’ level of learner autonomy and whether using Duolingo can be part of gamification. Finally, I intended to check to what extent Duolingo can promote learner autonomy and how.
2. Learner autonomy

Reviewing the literature has provided an insight into learner autonomy and the characteristics of autonomous learners as well as ways of promoting learner autonomy. Learner autonomy is a complex issue; therefore, there is no relevant universal theory accepted in language pedagogy (Benson, 2013; Legenhausen, 2009). Nevertheless, when describing learner autonomy, there are several concepts that provide important principles, which I have included in the table below.

<table>
<thead>
<tr>
<th>Focus</th>
<th>References</th>
<th>Importance</th>
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<tbody>
<tr>
<td>Learner autonomy is a capability</td>
<td>Holec (1979, cited in Legehausen, 2009)</td>
<td>This has provided a basis for other definitions.</td>
</tr>
<tr>
<td>Learner autonomy is a willingness</td>
<td>Bergen (1989, cited in Legehausen, 2009)</td>
<td>It opposes concepts regarding capability as the main factor in autonomy.</td>
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<tr>
<td>Learner autonomy is not only self-directed learning</td>
<td>Dafei (2007), Benson (2013)</td>
<td>Autonomous learners also show certain attitudes to learning and hold beliefs about the process.</td>
</tr>
<tr>
<td>Self-directed learning involves skills and capability, students’ decisions and control</td>
<td>Benson and Voller (1997, cited in Thanasoulas, 2000)</td>
<td>These five basic components enable students to take responsibility and consciously direct to some extent the learning process.</td>
</tr>
<tr>
<td>Role of control in learner autonomy</td>
<td>Benson (2013)</td>
<td>The more control the student has, the more likely they can take action to achieve success in learning.</td>
</tr>
<tr>
<td>Confidence and willingness</td>
<td>Wenden (1994, cited in Figura &amp; Jarvis, 2007)</td>
<td>Awareness of strategies or knowledge might not necessarily follow activity, which is required to establish learner autonomy.</td>
</tr>
<tr>
<td>Active participation in learning</td>
<td>Little (2015), Thanasoulas (2000)-constructivism</td>
<td>Students should know what to do to become more autonomous, but they need to take steps to reach this goal.</td>
</tr>
<tr>
<td>Successfully taking part in social learning</td>
<td>Bhattacharya and Chauhan (2010), Benson (2013), Legenhausen (2009)</td>
<td>Learner autonomy should enable students to cooperate with others successfully.</td>
</tr>
</tbody>
</table>

When dealing with learner autonomy, the name of Henry Holec is worth mentioning. He is often cited by professionals (e.g.: Bajrami, 2015; Legenhausen, 2009), because he developed the basic definition of learner autonomy. According to him, autonomous
learners are responsible for their own decisions relating to learning issues (Holec (1979) cited by Legenhausen (2009)). This definition involves the capability of clarifying the aims and the contents of language learning, monitoring the procedure and the progression, consciously selecting learning techniques and strategies and, of course, evaluating the whole language learning process (Legenhausen, 2009).

On the other hand, there is a debate whether learner autonomy is a matter of behaviour or capability (Legenhausen, 2009; Little, 2015). As opposed to Holec (1979 cited in Legenhausen 2009), who supports the latter, there is Bergen’s definition of learner autonomy (also cited in Legenhausen, 2009). This regards autonomy as a willingness to take charge of one’s own learning, which “entails that learners have developed and can sustain positive motivational attitudes towards the learning task” (Legenhausen, 2010, p. 380).

Other aspects can be considered as well. Dafei (2007) argues that terms such as 'self-instruction', 'self-access', 'self-study', 'self-education', 'out-of-class learning' or 'distance learning' are not equivalent with autonomous learning and he makes a distinction emphasizing that autonomous learning involves abilities and attitudes, while the others refer to different ways and degrees of learning by oneself. Benson (2013) also differentiates autonomy from self-directed learning, because the former can be described as an attribute of learners, whereas the latter is supposed to be only a mode of learning. He claims that autonomous learning also involves “decisions about content, methods and evaluation” (Benson, 2013, p. 37).

According to Benson and Voller (1997) cited in Thanasoulas (2000), learner autonomy can be interpreted in at least five ways, namely the situations in which learners learn totally by themselves, the learnable skills, which can be used during learning, an innate capacity, the learners' control over learning and, finally, the students' right "to determine the direction of their own learning" (Thanasoulas, 2000, What is autonomy?).

The basic traits of autonomous learners have been characterized by many professionals (e.g., Benson, 2013; Legenhausen, 2009; Little, 2015; Yagcioglu, 2015). Wenden's definition of autonomous learner cited in Figura and Jarvis (2007) is the following: those students, who are willing and confident enough to apply certain strategies and knowledge in order to become responsible for their own learning.

Little (2015) argues that “there is a consensus that the practice of learner autonomy requires insight, a positive attitude, a capacity for reflection, and a readiness to be proactive in self-management and in interaction with others” (Little, 2015, Definitions). This can be connected to the concept of Bhattacharya and Chauhan (2010), according to which learner autonomy includes reflective and critical thinking, responsible and independent selecting of own learning strategies. Besides independence (the skill of working alone), interdependence becomes more and more important so that learners can efficiently cooperate with others. The social aspect of
learning as a part of learner autonomy is mentioned by other educationalists as well (e.g., Benson, 2013; Legenhausen, 2009).

Thanasoulas (2000) states that autonomous learners play an active part in learning, use their creativity and take opportunities. Consequently, they do not only react to the input coming from the teacher, but they initiate interaction, which results in learning. This concept is closely related to the ideas of constructivism, a pedagogical ideology (Thanasoulas, 2000), because this suggests that students become constructors of their knowledge. In the concept of constructivism, knowledge is restructured and reorganised based on new experience, the focus is on building up knowledge, in other words on learning rather than on teaching. Hence, every student has her own experience and world knowledge that influence how they manage a task and how they use the target language. Due to this, constructivism supports self-directed learning, as the basis of autonomous learning (Thanasoulas, 2000).

Based on the literature that I reviewed, I developed my own understanding of the term ‘learner autonomy’: a willingness to take responsibility for one’s own learning and control the learning process which includes conscious learning management and evaluation, as well as reflection aimed at progression in learning (cf. Benson, 2013; Bergen 1989 cited in Legenhausen, 2009; Bhattacharya & Chauhan, 2010; Little, 2015; Thanasoulas, 2000).

Besides, the role of the EFL teacher cannot be neglected as far as training students to become increasingly autonomous is concerned. Thus, teachers should act as facilitators and counsellors, as Bajrami (2015) suggests, because they should manage activities and provide help when needed. Furthermore, teachers can supply students with a rich toolkit and support students by providing personalized feedback and involving them in decision-making. In this way, students can become ever more autonomous, thus potentially benefitting both teachers and students. For example, some research suggests that a higher level of autonomy contributes to improved language proficiency (Dafei, 2007; Legenhausen, 2009).

3. Duolingo as part of gamification

Online applications have been reported to support independent language learning, but little evidence seems to exist on the use of gamification and Duolingo. Duolingo is a free online language website providing translation tasks to learn vocabulary and grammar (in the form of learning and practising given topics), as well as tasks to practise pronunciation and listening. Although it mainly employs the grammar-translation method, there are playful functions included. That is why I introduce the definition of gamification, which is “the use of game design elements and game mechanics in non-game context” (Deterding et al., 2011, p. 9) by “incorporating game elements into a non-gaming software application” (Domínguez et al., 2013, p. 381). Consequently, gamification provides the framework for Duolingo due to certain
gamified elements involving time pressure, pointification (earning points for completing tasks), badges (visual display of progress), leaderboards and progress bars.

Kiryakova et al. (2014) have found that by enhancing motivation and engagement, gamification positively influences students’ beliefs and attitudes towards learning; therefore they suggest that gamification supports an effective learning process. Munday (2016) points out that since it provides instant feedback, Duolingo might be suitable for promoting self-directed learning. According to Magnuson (2014), using Duolingo in the classroom can promote independence and self-paced learning as well. In addition to this, this website also increased students’ interest and contributed to the teacher’s monitoring work to follow students’ progress.

4. Empirical research

In the study, one of my main goals was to test the effectiveness of Duolingo’s gamified elements in practice in order to see whether they are capable of supporting EFL learner’s engagement in their own learning as well as learner autonomy. The research questions concerning the empirical research were the following:

(1) To what extent are the participating high school students autonomous?
(2) Can Duolingo be part of gamification?
(3) To what extent can Duolingo promote learner autonomy?
(4) How can Duolingo promote learner autonomy?

In addition, I have developed the following corresponding hypotheses: (1) Duolingo can be part of gamification in learning English, and (2) Duolingo can contribute to an increase in the level of learner autonomy within the context of EFL.

The empirical research has been carried out in the form of a case study in order to gain in-depth data on the relationship between learner autonomy and gamification. I conducted my research in a Hungarian grammar school, in Budapest. My participants were 14-15 year-old students in their 9th grade specializing in drama. The school focuses on learning English as a foreign language. This is the first foreign language that is compulsory to learn in the school, as a consequence, classes are usually divided based on the learners’ level of proficiency in the foreign language. The group that I examined involved EFL learners, partly A1 and partly A2 students. The group consisted of 16 students from which eleven students’ first foreign language was English, because they learnt it in the primary school as well. On the other hand, the five other students from this group learnt German in the primary school, but in the high school they had to learn English as a compulsory foreign language. Due to this, they did not have a chance to learn German, just English as a foreign language.

To examine the research problem, I implemented a pre-task student questionnaire, experimental teaching and post-task interviews with the EFL teacher and the participating students. I employed triangulation, because this helped me explore and
analyse the multifaceted topic of learner autonomy and gamification. Dörnyei (2007) argues that it is beneficial to use both qualitative and quantitative research methods as they strengthen each other and mitigate the deficiencies. Also, this combination allows researchers to confirm the validity of the outcomes of their research.

In the focus of the questionnaire, there was mainly learner autonomy (see Appendix 1). The students had to answer my questions using a Likert Scale, finish sentences by choosing one or more of the endings provided, and they also had to give reasons why e-learning might be beneficial.

During the experimental teaching, which I implemented myself, I relied on the Duolingo website, and the lessons had two foci: one was to deal with technical issues such as joining an online group, and the other one was to engage students in the use of Duolingo. The experimental teaching lasted for two weeks, including four lessons dedicated to an introduction, a presentation and a discussion of how to use Duolingo. There were some technical problems to solve as well. The students had to complete tasks outside the school that I had assigned them via the Educator’s page of Duolingo. Although the website allowed me to assign all of the topics, due to technical problems, I was able to set certain goals, but not much more, e.g. to earn 50 XP (experience points). To set homework and follow students’ progress, I also used this website. There are five different functions on this website. The first one is to follow students’ progress. The students who joined the group can be listed by their names. In this case, every student has a name card with their XPs and three numbers representing how many assignments the students completed in time and after the deadline and how many they missed. Besides, educators can obtain information about students’ activities: on how many days they were active, how many lessons they have learnt, how far in the course the students have progressed and how many points they have earned. Thirdly, progress in the course can be listed according to students and units, with visual representation for educators to check whether certain topics are covered by the students or not. Thus, this webpage also enabled me to follow students’ progress and see which students completed the tasks on time/after the deadline and which ones did not do anything at all. At the weekend and in the autumn break, the number of active students increased, but in the meantime, just a few of them completed the exercises I had set for them.

The pre-designed exercises available on the website focused on vocabulary and grammar topics suitable for their own level of English. Students were given homework with deadlines and as a Duolingo Educator I could have my own webpage. After the experiment, I set tasks to them and my webpage still shows how students accomplish all the tasks. In addition to setting tasks, my Educator site provides information about the progress in their English studies on Duolingo, in others words, on which days the students completed tasks and how many points they collected. During this phase of my research, I also asked the participants’ EFL teacher to fill in an observation sheet to give reflective thoughts about the lessons. Furthermore, I also relied on informal discussions between the teacher and me, and my own reflections provided useful data as well.
After the experimental teaching, I conducted semi-structured interviews with the EFL teacher who observed the whole experiment and a group of students to let them reflect on the whole process. The EFL teacher is the group’s form teacher at the same time, however, she had little knowledge about the students as she had been teaching them for couple of months only at that time.

5. Results and discussion

The results of the questionnaire suggest that the students were autonomous to some extent before the experiment because they showed limited awareness of their English language knowledge. Moreover, they seemed to lack control and responsibility with regard to their learning process, with most of them preferring teacher-directed learning. The students’ progress on Duolingo and the findings from the interviews support the idea that these students were overburdened and lacked time to do the tasks on time. Since students attend drama specialisation, they have extra drama lessons in the afternoon which take most of their free time. They also lack certain skills such as selecting proper learner strategies that might help them become more autonomous, as they had only attended high school for three months when I started my experiment with them. As far as these circumstances are concerned, there had not been so many opportunities for the students to manage their own language learning. They would need their EFL teacher’s training and support in order to gradually become more independent.

Analysis of the data suggests that Duolingo’s gamified elements did not engage the students effectively. The interviewed students, as users of the website, pointed out several problematic elements: failing to complete the tasks precisely, they had become frustrated about earning points and checking their current performance and progress. The students could follow their progression on their own with the help of the performance graph built-in Duolingo. Although it should have shown how well the student can remember the words and grammar structures from that particular lesson, it was strongly affected by the time passing by. The algorithm that calculated this value could not precisely reflect on the real performance; therefore, it could not show the real knowledge of the students - that was reported by the students as well - thus it was also demotivating for them. Moreover, Duolingo offers very few badges, the tasks including translation are without context and there are no possibilities for the teacher to intervene in the tasks to adjust them to the needs of the learners. However, the students did not take all the opportunities made available to them by Duolingo; they just completed the tasks that I had set for them, which might also be due to the low level of autonomy. The students reported that they stopped completing the tasks after the experimental teaching.

On the other hand, there was a considerable contrast between the views of the EFL teacher and those of the students interviewed on the use of Duolingo in the EFL classroom. The EFL teacher was ready to employ Duolingo as a source for homework
for each of her beginner/elementary groups. However, the students interviewed, who were almost complete beginners, refused to use Duolingo to learn English on their own. One reason for this might be that although the website was new for the students, it did not provide further enjoyable features, only the same tasks all the time. There were several gamified elements that did not motivate the students either extrinsically or intrinsically. For example, the badge system offers only a few rewards (double or nothing, timed practice and bonus skill), which provide nothing more than practice. Failing to complete the tasks precisely, the students had become frustrated.

Although the teacher reinforced my instructions, it was not compulsory for the students to do the exercises; thus, they may not have taken the whole learning process as seriously as their school studies. Moreover, the students insisted on refreshing their knowledge by practising several units provided by the website, and thus they did not make any progress. Although repetition helps them to remember the grammar structures and words better, the students did not recognise that making progress might be more beneficial than repeating the same tasks in each case.

In summary, I would like to return to my research questions:

(1) To what extent are the participating high school students autonomous?

What I can deduce from my results is that students showed some signs of autonomy. I worked with 9th graders who had just entered high school; therefore, it might not be surprising that they need to develop further to become more conscious language learners. It may be natural that the teacher would like to direct students at the beginning. However, it can be beneficial to allow students to make some of their own decisions or invite students to choose from alternatives in order to support learner autonomy. In this way, students might later become independent language learners who can self-manage and self-monitor their own work.

(2) Can Duolingo be part of gamification?

It seems that this website does not engage learners in the long term. There may be a need for modifications in order to adjust the website to the needs of learners. There are some game elements, such as a few badges, a performance graph, leaderboards, restarting the task and immediate feedback, but they are not enough to stimulate competition and increase motivation in the long run. Students easily became demotivated when the lessons were no longer concerned with using Duolingo. To avoid this, there may be a greater need to link Duolingo lessons with classroom activities, such as creating competition among students, who can receive points monthly/weekly and be rewarded accordingly.
(3) To what extent can Duolingo promote learner autonomy?

It seems possible to use Duolingo as a supplementary tool besides lessons, yet careful preparations may be essential to maintain student motivation. For instance, every completed set of tasks may be worth an extra point in the teacher’s grading system. Duolingo is not sufficiently motivating to encourage students to learn on their own; therefore, teachers should consider if it is possible to integrate Duolingo into the course. Eventually, more research would be needed to answer this question.

(4) How can Duolingo promote learner autonomy?

There are certain elements (setting goals, units with explanation and tests, and following one’s own progress) which enable students to learn on their own. Nonetheless, careful pedagogical preparation and planning would be needed and maybe longer experimentation on the lessons in order to help students deal with the problems ahead.

6. Conclusion and directions for further research

The aim of this research project was to investigate the relationship between gamification in the form of Duolingo and the enhancement of learner autonomy in secondary school. In this study, a pre-experiment learner questionnaire and experimental teaching, including classroom observation and follow-up interviews with the learners and their EFL teacher, were applied.

One of my hypotheses can be accepted, namely that Duolingo can be part of gamification in learning English, because the game elements are an integrated part of Duolingo and learning takes place when the different tasks are completed as well. However, these elements and the game environment might not be well-designed enough to be entirely enjoyable for users and to hold students’ attention constantly. The reward system should be reconsidered in order to be able to engage students more.

My second hypothesis, however, can only be partly accepted. Although Duolingo can contribute to the increase in the level of learner autonomy within the context of EFL, in this case, the students tended not to use the website on their own, thus they did not make use of the functions of Duolingo that could have helped them to become more autonomous. Duolingo has elements which might enable students to develop their autonomy, but students did not seize the chances to manage their own learning. However, students might be affected by other factors apart from using Duolingo, which can also decrease or increase their level of autonomy. Therefore, it is difficult to assume a direct link between using Duolingo and promoting learner autonomy. Consequently, it would be beneficial to alter the reward system of the website to the needs of learners.

At this point, it seems that more research is needed on the influence of gamification, including Duolingo, on learner autonomy. Connecting Duolingo topics directly to the lessons with the help of the teacher might be a good idea, as well as...
asking her to actively participate in experimental teaching. Another approach may be to integrate Duolingo into the lessons and gradually allow students to use it on their own at home. Teacher control would thus slowly shift towards student control. These pedagogical preparations might help students to make use of Duolingo’s gamified elements, which can promote learner autonomy as well.

References


**Appendix 1 – Student questionnaire**

I. Read the statements and decide how often they are true for you. According to this, circle one number besides each statement.

1. never  2 monthly  3 weekly  4 daily

1. I preview before the class.  
2. I make self-exam before test-writing.  
3. I believe I can finish my task in time.  
4. I plan how I learn English.  
5. I reward myself such as buying chocolate etc. when I make progress.  
6. I make good use of my free time in English study.  
7. I attend out-class activities to practise and learn the language, e.g.: private lessons, courses.  
8. During the class, I try to catch chances to take part in activities such as pair/group discussion, etc.  
9. I know my strengths and weaknesses in my English study.  
10. I know what kind of tasks are hard and what kind of tasks are easy for me.  
11. I think I have the ability to learn English well.  
12. I believe I am confident English learner.  
13. I also learn English on the computer/internet.
II. Please, finish the statements with those endings which are mostly true. Circle the letter(s) before the appropriate statements. More than one letter can be marked.

14. When the teacher asks questions for us to answer, I would mostly like to…
   A. wait for others’ answers.
   B. think and ready to answer.
   C. look up the answer on the web/ in a book.
   D. discuss the answer with others.

15. When I meet a word I don't know, I mainly…
   A. let it go.
   B. ask others about the meaning.
   C. guess the meaning based on the context.
   D. look it up in the dictionary.

16. When I make mistakes in study, I'd usually like …
   A. the teacher to correct.
   B. the classmates to correct.
   C. to correct with the help of the book.
   D. to correct based on a key.

17. I usually use materials selected…
   A. only by the teacher.
   B. mostly by the teacher.
   C. by myself together with the teacher.
   D. by myself.

18. I think my success or failure in English study is mainly due to…
   A. luck or fate.
   B. the strategy I use.
   C. the teachers.
   D. myself.

19. As for my English studies, it is true that…
   A. I use applications on my smartphone/tablet/ PC which I can learning English with.
   B. I play computer/online games in English.
   C. I browse English web pages.
   D. I search for English teaching websites.
III. In your opinion, is it useful to learn English with the help of your PC/ tablet/ smartphone? Underline one answer, please.
YES  NO  DON’T KNOW

Give your reasons and opinion about this question briefly, in 2-3 sentences: