What students think and what they actually do in a mobile assisted language learning context: new insights for self-directed language learning in higher education

Gustavo García Botero[1] and Frederik Questier[2]

Abstract. In an attempt to understand whether Mobile-Assisted Language Learning (MALL) could foster students' self-directed learning, this paper analyzes a self-directed learning experience by means of a language app: Duolingo. In this study, higher education language students were encouraged to use Duolingo outside of the classroom. The data collected via app tracking, surveys and semi-structured interviews reveal that the low activity in the app contrasts the high value students attribute to it. Students indicated that the low activity is due to other obligations in their lives. They also expressed the need of external motivation to finish the course. The study suggests that mentoring and modeling are still needed in the development of self-directed study skills and it highlights the importance of implementing different data collection techniques to understand what students think and do in MALL.

Keywords: data collection, Duolingo, MALL, self-directed study.

1. Introduction

When inquiring about what students do in a computer assisted language learning environment, Stockwell (2012) hints at an over reliance on surveys as a data collection method. Likewise, Fisher (2012) states that the "use of questionnaires alone is not a reliable source of information about student use of software and should be avoided as a single source of information" (p. 27). The ubiquity and

1. Vrije Universiteit Brussel, Brussel, Belgium; Gustavo.Garcia.Botero@vub.ac.be
2. Vrije Universiteit Brussel, Brussel, Belgium; fquestie@vub.ac.be

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just in time learning provided by MALL have particular implications on how users self-direct their learning and how researchers collect data on students' activity. Stockwell (2013) points out the small "amount of research examining how learners engage in mobile learning outside of the classroom" (p. 118). Little is known about what happens when students download a language application to their devices.

Conveniently, MALL applications are gradually adding features that allow quantitative measurements of app usage. One example is the free of charge application Duolingo. Through its unobtrusive tracking dashboard *Duolingo for schools*, teachers can see the languages students are practicing and their progress in the Duolingo language curriculum.

2. Method

The participants were Colombian higher education students enrolled at different levels of language courses. 574 students were given a formal lecture about Duolingo. They learned about its different features and they were encouraged to use the app at their convenience. Furthermore, students were invited to join the Duolingo dashboard where their activity would be tracked. 273 students reported to not have used Duolingo; 149 students reported having used Duolingo after the MALL lecture while 118 of these users accepted to be tracked in the dashboard.

Eight weeks after the lecture in which they were encouraged to use the app, students filled out a questionnaire on their perception of Duolingo. The questionnaire contained items measured through a Likert scale where 1 represented *totally disagree* and 5 represented *totally agree*.

Once a year had passed, students' data from the dashboard were retrieved. A stratified sampling was applied to select students for an interview about their general impressions of the app and their opinion about how to foster its use among the student population. The analysis of the sampling population resulted in the stratification of the data into three groups of students: tracked students who barely used Duolingo (students who were active ten days or less, N=73), students who had a moderate use (students who were active more than ten and less than 50 days, N=31) and students who had the most sustained use (students that were active 50 or more days, N=14). Five students in each group were randomly selected for the interview.

3. Results

Table 1. Questionnaire: students' perceptions about Duolingo

Duolingo item sorted from high to low score. N=149	Mean	SD
1. Duolingo encourages me to learn different languages that are not taught in the Modern Languages program	3.97	0.993
2. I would like Duolingo to be integrated as a component of independent learning (work done outside the classroom)	3.94	0.91
3. I like the game-like methodology proposed by Duolingo	3.93	0.844
4. Duolingo allows me to be independent in language learning	3.93	0.844
5. I have no problem to access Duolingo	3.93	1.101
6. I would recommend Duolingo for language learning	3.91	0.932
7. I find a connection between what I studied in Duolingo and what was taught to me by the language teachers	3.89	0.927
8. I think I can improve my vocabulary with Duolingo	3.89	0.934
9. I think Duolingo offers an organized language learning path	3.87	0.935
10. Duolingo is fun for people my age	3.87	0.903
11. I like the exercises proposed by Duolingo	3.86	0.923
12. Duolingo motivates me to study languages with my Smartphone or tablet	3.85	0.964
13. I think I can improve my grammar with Duolingo	3.83	0.918
14. I think that I can improve my listening with Duolingo	3.81	0.896
15. I think I can improve my writing with Duolingo	3.79	0.903
16. I think that I can improve my speaking with Duolingo	3.72	0.958
17. I think Duolingo can satisfy my learning needs	3.72	0.985
18. I would like my teacher to see my progress in Duolingo	3.71	1.009
19. Duolingo encourages me to go beyond what is taught in the language classroom	3.70	0.991
20. I think I can improve my reading with Duolingo	3.68	0.939
21. I would like Duolingo to be integrated inside the classroom	3.58	0.952
22. I prefer other free apps to learn languages than Duolingo	3.38	0.977

Table 2. Duolingo dashboard: average of completed units and number of days of Duolingo use

N= 118	Mode	Range	Mean	SD	SE
Days Active	1	0- 394	15.13	45.18	3.06
Lessons completed	0	1908	56.49	169.95	11.53
Units completed*	0	78	13.55	18.47	1.25

* A unit is a set of lessons

Table 3. Course completion: verall language course completion in Duolingo

Course Group	N .	N. Students who finished the course	Language completed
English semester 1	17	1	English
English semester 2	18	1	English
English semester 3	13	3	English
English semester 4	20	2	English
French semester 1	8	0	-
French semester 2	10	0	-
French semester 3	14	2	1 English 1 French
French semester 4	18	3	3 French 1 Italian*
Total	118	12	8 English 4 French 1 Italian*

*Same student did French and Italian

4. Discussion

According to the students' questionnaire answers, Duolingo is perceived to be a useful tool for language learning. Views of Duolingo are positive as an instructional method (items 3, 7, 9, 11), motivation tool (items 1, 10, 11), promoter of self-directed learning (items 2, 4) and enabler of language skills practice items (8, 13-16, 20). These results were confirmed by the individual semi-structured interviews in which every interviewed student reported having recommended the app to peers and friends (as predicted in item 6 of the questionnaire). However, the results retrieved from the Duolingo dashboard reveal that only 12 out of the 118 tracked students (10%) managed to completely finish a Duolingo language course. Despite the considerable variability of the data, Table 2 puts into evidence the low participation of students. Different data collection techniques reveal a discrepancy between students' perception and actual use of the application. Such discrepancy is seen in similar studies (e.g. Stockwell, 2008). From the students' point of view, this is explained by their busy lives inside and outside their academic context, the lack of formal follow-up (related to the absence of a teacher), and the lack of additional motivational factors (e.g. language certificate, course grades). Our results confirm studies that take into account the relationship between students and technology (e.g. Azevedo et al., 2003) in which the difficulty of learners to self-regulate when learning is demonstrated.

5. Conclusion

This study points out the relevance of data collection to improve the understanding of MALL outside formal educational contexts. Although tracking is not the panacea in computer-assisted language learning research to investigate student behavior (Fischer, 2007), it demonstrates the relevance of scrutinizing actual usage data because what learners indicate in surveys contradicts what they do in reality.

The combination of data collection techniques suggests that self-directed learning in MALL requires modeling and mentoring, which is why a tutor (such as a teacher) remains important. Even if students are formally introduced to an expectedly convenient and motivating app, only a small number of them make substantial extracurricular use of it. Results of the study show that for substantial MALL usage, a combination of incentives, scaffolding and curricular integration are needed. Such concepts will be investigated in follow up studies.

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