

IS THERE AN APP FOR THAT? VALIDATED DESIGN FOR A PILOT QUESTIONNAIRE ON READING STRATEGIES FOR THE CREATION OF STRATAPP

Ljubica Damevska / Universitat Rovira i Virgili, Department of English and German Studies, ARGET / ljubica.damevska@urv.cat

Anca Daniela Frumuselu / Universitat Rovira i Virgili, Department of English and German Studies, ARGET

Tania Molero-Aranda / Universitat Rovira i Virgili, Department of Pedagogy, ARGET

Mònica Sanromà-Giménez / Universitat Rovira i Virgili, Department of Pedagogy, ARGET

Mireia Usart Rodríguez / Universitat Rovira i Virgili, Department of Pedagogy, ARGET

Key Words

User Experience (UX), StratApp, MALL, High education, Reading skills.

Abstract

The current study focuses on the creation and validation of a questionnaire for StratApp, a game-based mobile app aiming at improving reading comprehension of university students when reading academic texts in English.

In order to consider the users at every stage of the app design process, a pilot questionnaire was created to gather data about students' reading patterns and preferences, their use of academic apps, and their thoughts about the creation of an app, such as StratApp. The questionnaire was then validated by a team of experts and a test version was sent to students from graduate and postgraduate Teacher Training programmes from the University of Rovira i Virgili in Tarragona, Spain. The results of the questionnaire will be presented at the conference. The pilot questionnaire is part of a European project Erasmus+ KA2 awarded to Rovira i Virgili University (URV) in collaboration with five other partners. The aim of the project is to improve the English academic reading skills of university students in Teacher training undergraduate and graduate studies through a game-based app: StratApp (short for Strategies App). The app will combine the obvious educational purpose (improvement of academic skills) with basic gamification principles.

Introduction

Many apps are available for educational purposes and they provide learners with new opportunities to engage in interactive learning activities from different places and at their own pace (Rosell-Aguilar, 2016). Apps use features that tablets, and smartphones possess, such as: larger screen size, responsive touch screen, easy text entry, high quality video and audio, large storage, portability, long battery life, intuitive interfaces, sleek design etc. (Rosell-Aguilar, 2017; Goodwin Jones, 2017). Indeed, apps have been evaluated as potentially beneficial for language learning (Goodwin-Jones, 2011; Sweeney and Moore, 2012, Lafford, 2011). According to Rosell-Aguilar (2014), studies on the use of apps for language learning have shown positive results in the following aspects: reading (McLanahan et al., 2012; Harmon; 2012), listening (Lys, 2013), vocabulary (Yildiz, 2012), grammar (Castañeda and Cho, 2016), character writing (Rosell-Aguilar and Kan, 2015). When it comes to reading and writing, studies have found improvement with native speakers of English who worked with iPads (McLanahan et al., 2012; Harmon; 2012). However, in evaluating language learning apps, Rosell-Aguilar (2017) points out their limited instructional support, minimal user feedback, poor instructional design, unappealing interface and confusing navigation. In order to successfully design an app for language learning purposes, two critical factors must be taken into account: pedagogy and technology (Sweeney and Moore, 2012).

The main aim for designing StratApp is to improve English academic reading skills of university students in Teacher training undergraduate and graduate studies. Academic reading is a key tool for academic learning (Chase et al., 1994; Grabe and Stoller, 2014). In the words of Chase et al. (1994), reading is “the vehicle for gathering information and ideas” (p.12). However, in academic reading, students need to go beyond the basic understanding of a text. They must also transform and manipulate academic texts based on the academic tasks required (Chase et al., 1994). Earlier studies on non-native students of English show that when students enter university they are not prepared for the reading demands placed by the university and often have problems such as: inability to read selectively, inability to prioritize and select relevant information in a text, lack of reading strategy knowledge (Dreyer and Nel, 2003; Dreyer, 1998; Benson; 1991). When faced with these difficulties, students may find pursuing a graduate or a postgraduate degree in second language quite challenging.

Taking into account the proliferation of educational apps, the scarcity of specialized reading apps for reading comprehension aiming at university students of English, and the importance of academic learning, we decided to test the idea of designing an app which would help university students attain better reading skills of complex English academic texts.

Objectives

When looking at design and software evaluation, studies lead us to the concept of ‘usability’ (Uther and Banks, 2016). Usability is a quality attribute which assesses the ease of use

and the degree of learnability of a tool or a programme. The concept of usability has recently included the emotional aspect elicited by application and has been developed into a broader framework called 'user experience', a term coined by Donald Norman in the mid 1990s (Jordan, 1998; Picard, 1999). Prior to usability testing, our aim was to investigate if an app, such as StratApp would be useful for university students. In order for an app to be useful, it needs to have an affordance for a particular function and depend on the experience, knowledge and culture of the user. (Norman, 1988; McGrenere and Ho, 2000). A pilot questionnaire was therefore created which serves as the basis for designing meaningful and motivating reading activities alongside with an engaging game-based interface within a reading app, called StratApp.

The specific objectives of the pilot questionnaire are:

1. To obtain data on students' demographics and the following factors: reading habits and preferences of general English texts, strengths and difficulties when reading Academic texts in English, usage of academic apps and perceptions on the design of academic English skills reading app.
2. To serve as a baseline for interface and activity design for the academic English texts reading app StratApp.

Method

Participants

There are two types of participants involved in the validation process. On the one side, we rely on 4 experts in foreign/second language teaching at university level, who will validate the content of the questionnaire and the instrument. First, they will provide feedback on the intelligibility, relevance and clarity of the items created, giving their suggestions if necessary. Then, the experts will be asked to collaborate and answer the questionnaire in order to have initial results of the pilot sample. We decided to rely only on 4 experts because the number of experts tends to be small, ranging from two to three expert methodologists. Furthermore, expert review is considered as a relatively fast and inexpensive method for evaluating questionnaires (Olson, 2010).

On the other side, undergraduate students from the Teacher Training Programme at Universitat Rovira i Virgili (URV) will participate in the pilot sample. The improved questionnaire will be sent to an appropriate pool of students (approximately 30) in order to get an insight into their reading habits and reading app preferences. The students are studying a Teacher Training Degree, being specialized also in English language teaching. Students' answers will allow us to do the reliability test and validate the instrument.

Measures and structure

The pilot questionnaire is an instrument with sixteen items representing three independent factors (see Figure 1) with central variable on improving reading comprehension of English academic texts. A mixed measure was used for the questionnaire: eight of the items of the questionnaire are rated using a 5-point-Likert scale (1=strongly disagree, 5=totally agree), five items have a unique selection, only two items have multiple choice and, finally, one item is an open answer.

Next, we will analyze in detail the content of the instrument according to the factors:

- **Demographic information**
This first section, formed of 6 questions, allows us to obtain background information about the students, in terms of their age, gender, nationality, their English level according to The Common European Framework of Reference (CEFR), their studies and home university. It is important to find out to what extent these variables may influence Teacher Training Degree students' reading comprehension of academic texts.
- **Information about reading general English texts**
The second section intends to collect information about students' reading habits, reading preferences and their motivation while reading general English texts by using 8 questions.
- **Information about reading academic English texts**
The third section allows us to collect information about students' reading needs in terms of academic English, especially their reasons, strengths and difficulties when reading academic English texts. We use 3 questions with a 5-point-Likert scale to delve into these aspects.
- **Gamifying reading of Academic English texts**
Finally, the fourth section collects information about students' awareness of reading app for academic English texts, their preferences in terms of game elements and game mechanics and how they would imagine a gamified reading app based on their own experiences as players.

FIGURE 1. INDEPENDENT FACTORS OF THE PILOT QUESTIONNAIRE

Independent variables	Sub-variables	Indicators	Question	Type of variable
General English (GE)	Reading Habits GE	Enjoyment	7	Ordinal
		Frequency	8	Interval
		Types of texts	9	Nominal
	Reading Preferences GE	Genre	10	Nominal
		Format	11	Nominal
		Device	12	Ordinal
	Reading motivation GE	Reason for motivation	13	Nominal
Lack of motivation		14	Ordinal	
Academic English (AE)	Reading needs AE	Reason for reading AE	15	Ordinal
		Difficulties	16,17	Ordinal, Ordinal
		Strengths	16	Ordinal, Ordinal
Gamifying	Gamifying reading AE	Knowledge of Reading Apps	17, 18	Ordinal, Nominal
		Game elements	19	Interval
		Game mechanics	20	Ordinal
		Player experience	21,22	Ordinal, Nominal

As we have exposed the content and the structure of the tool, we move on to explanation of the process of its validation and reliability. This process is currently ongoing; however, we will present below the procedure we are following.

Expected results: Validation procedure

In order to make sure the tool will meet the liability of the analyzed variables, it is of utmost importance to proceed to the validation and liability testing of the questionnaire. This process of validation consists of four steps: the validation of the experts, the piloting test with the experts, the statistical analysis of the first pilot questionnaire, and the pilot test with the users (undergraduate students).

1. Validation with the experts

The validation process of the feedback and input provided by the experts in English foreign language learning (n=4) will be carried out with a fixed assessed model. The assessed model aims to evaluate the validity and the intelligibility of the written items using the following criteria:

- Clarity. Is the question well understood and well expressed? If you think it is clear and it is not ambiguous, mark “Yes”. Otherwise mark “No”.
- Relevance. Values from 1 (little) to 4 (a lot) indicate the degree of adequacy and relevance of the question in relation to the investigation explained above.
- Importance. Values from 1 (little) to 4 (a lot) indicate the degree of importance the question has in relation to the investigation explained above.
- Comments. Add any comments you consider relevant about the item in question.

The four experts are all university professors or assistants, already doctors or in the process of becoming doctors, and they are specialized in teaching English as a foreign language. One of them is teaching at the home university, URV, another one is teaching both at URV and at Universitat de Barcelona (UB), a third one is teaching at UB and the fourth one is teaching at Universidad de Los Andes, Táchira, Venezuela. They have experience in teaching English as a foreign language at university level and they were suitable to give us insight into the items related to English reading skills. After the validation of the experts, we will modify the items that require changes in order to move on to the next step.

2. The pilot test with the experts

Once we modify the necessary items, we will send the questionnaire in digital format to the experts, so they can answer it. The expected feedback is aimed towards the functioning of the questionnaire and any typos or errors that the experts may notice.

3. The statistical analysis

After collecting data from the pilot test with the experts, we will be able to carry out the first statistical analysis in order to measure the level of liability of the tool.

4. The pilot test with the users

After getting input from the experts and the results from the statistical analysis, we will send the digital questionnaire to a pool of undergraduate students from the Teacher Training Degree at URV, Tarragona (Spain). This pilot test will allow us to analyze in depth the reliability of the questionnaire and make further changes if necessary before sending the questionnaire to a larger pool of users.

Conclusions

The current study focused on the creation and validation of a questionnaire for StratApp, a game-based mobile app aiming at improving reading comprehension of university students when reading academic texts in English. We carried out four steps in order to validate the current questionnaire: validation process with a group of experts in teaching English as a fo-

reign language, piloting the questionnaire with the same group of experts, DOIng a statistical analysis with the results from the first pilot test, and finally, a pilot test with a reduced pool of possible users. The process has been quite long and arduous, given that we involved various parties in order to get to the desired outcome. First, finding the suitable experts for the aim of this study was an important step, given that they had to be experts in English foreign language teaching and have experience as professors at university level.

We expect a positive and valid statistical result once the experts and the possible users will answer the questionnaire. This would allow us to move forward with the process of the questionnaire and expand it to a larger scale to the project partner countries and universities. The final aim of this questionnaire is to gather meaningful data about the future user experience of the reading app and means of applying their input and feedback to the final version of the reading app (StratApp). The analysis of the experts evaluation and their answers are being currently analyzed and the initial results will be presented at the conference.

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