6 ImparApp: Italian language learning with MIT's TaleBlazer mobile app

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Abstract

Recent developments in mobile technologies have increased the ways in which languages can be learnt, both within and beyond the classroom. Whereas the use of mobile technologies seems to challenge traditional knowledge and skills acquisition, research shows that foreign language study can be enriched through easy access to resources selected to suit individual interests or needs (Kukulska-Hulme, 2013). This chapter reports on an Italian language learning game, *ImparApp*, developed with the Massachusetts Institute of Technology's (MIT) *TaleBlazer* location-based game-authoring tool. Players interact with virtual characters, objects, and data as they move around their real physical location whilst attempting to solve a time travel mystery. This chapter presents data collected through a case study of how learning a language can take place beyond the traditional classroom in new and challenging ways. The chapter summarises the way learning activities were integrated into the app and discusses how the learning challenges were designed across the scenes, episodes and settings. It also presents data collected from the 'play-test' sessions and discusses initial findings of the pilot project.

Keywords: mobile learning, language learning, gamification, Italian.

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How to cite this chapter: Cervi-Wilson, T., & Brick, B. (2018). ImparApp: Italian language learning with MIT's TaleBlazer mobile app. In F. Rosell-Aguilar, T. Beaven, & M. Fuertes Gutiérrez (Eds), *Innovative language teaching and learning at university: integrating informal learning into formal language education* (pp. 49-58). Research-publishing.net. https://doi.org/10.14705/rpnet.2018.22.775

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1. Introduction

Recent mobile and web technological developments have allowed for experimentation in the delivery of language learning. Following up on a pre-pilot (Charitonos, Morini, Cervi-Wilson, & Brick, 2016), this chapter presents the initial results of a pilot Italian language learning app, which focusses on a pervasive and game-based approach to teaching and learning within a university context. The app is aimed at students attending an eleven-week Absolute Beginners' module in Italian at Coventry University – Common European Framework of Reference for languages (CEFR) level half of A1. Students move around the Coventry University campus and Coventry city centre while completing tasks and challenges by collecting items for their inventory in order to solve a time travel mystery. Specific tasks are triggered by students' Global Positioning System (GPS) coordinates on their phones, and students and tutors are also able to monitor progress via a leaderboard. By situating games in the real world, mixed-reality and location-based games aim to engage students in an array of experiences that combine real landscapes and other aspects of the physical environment with contextualised digital information supplied to them via mobile devices. The game is divided into four parts, each of which must be completed before players are able to 'level up'.

Authors such as Godwin-Jones (2017) have written extensively about the increasing importance of mobile phones in learners' lives and how they can be utilised for language learning, as the price of data has fallen and the availability of open Wifi networks has increased. In spite of this, Mobile-Assisted Language Learning (MALL) remains "on the fringes" (Burston, 2014, p.115) with behaviouristic type drill and kill activities remaining prominent. Various studies have been carried out into the affordances of some MALL applications, including Rachels and Rockinson-Szapkiw (2018) who demonstrated that students learn as much using *Duolingo* as those in a traditional face-to-face learning environment. A similar study, focussing on the mobile language learning application *Busuu* (Kétyi, 2015) revealed positive outcomes compared to the control group. Another study, Castañeda and Cho (2016), has also demonstrated that integrating a game-like application in a classroom contributed to the improvement of student

accuracy and confidence in conjugating Spanish verbs. The cost of creating apps has also fallen and the number of those available, either designed specifically for language learning such as *Duolingo,* or those that can be utilised for this purpose, has increased rapidly. To categorise these, Rosell-Aguilar (2017) presented a taxonomy of available apps and how they could be used for foreign language learning (p. 249). He also presented a framework, consisting of four categories and criteria through which apps can be evaluated.

2. The context and the design background

2.1. Language learning at Coventry University

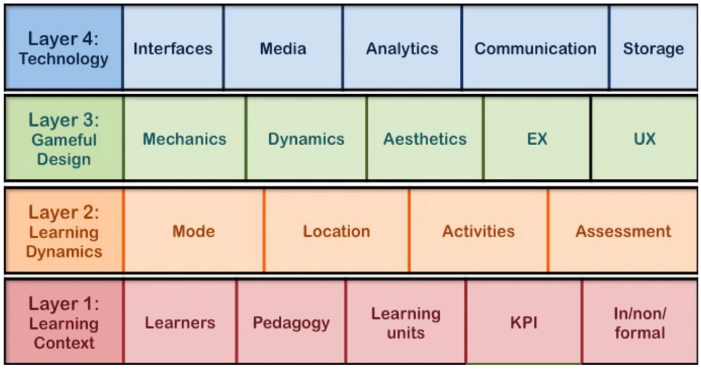
Coventry University offers students the opportunity to learn a foreign language by attending an institution-wide language learning programme, 10-credit-bearing 'Add+vantage' module. As well as developing students' foreign language competence, these modules aim to develop and expand students' employability skills.

The purpose of the project was to investigate the interface of game-based learning and pervasive learning in support of language teaching and learning and to evaluate the holistic and modular design model (see Figure 1) as a tool to guide the different layers of the design process, as suggested by Arnab et al. (2015). The pilot study took place in the spring semester of 2016 and the following sections describe this process.

In line with the EU's *Opening up Education* initiative, the team's choice was to use the MIT's *TaleBlazer* (Medlock-Walton, 2012) authoring tool. The prototype game was developed with the MIT augmented reality platform, *TaleBlazer*, which is an open-source authoring tool to facilitate the development of location-based augmented reality games. The game mechanics informed how the students can interact with their physical environment and learn Italian at the same time. The content and learning objectives of the app were aligned to the curriculum of the Beginners Italian modules at Coventry University. The user-centred design and the

establishment of a multi-disciplinary team consisting of researchers, tutors, and students were key factors in the development of the app pertaining to educational contexts. Two undergraduate students, one studying English and Creative Writing, and the other Gaming Technologies, wrote the storyline and coded *Taleblazer* respectively. Lecturers provided the expertise in Italian language, culture, pedagogy, and content, whilst the educational technology researchers provided the necessary skills for the development of an educational app.

Figure 1. Holistic and modular framework (Arnab, 2016)



The game prompts students to explore the city's buildings and heritage through specifically designed mobile phone tasks, triggered by students' GPS coordinates. These tasks focus on the four language skills of reading, writing, listening, and speaking. Students and tutors are also able to monitor progress via a leaderboard and players are able to compete with each other. The app's design is discussed in Morini et al. (2016), where it is noted that one of the key aspects of the design approach is that it allows its users to experience their everyday living contexts and their course's content "in a new and playful way" (p. 96).

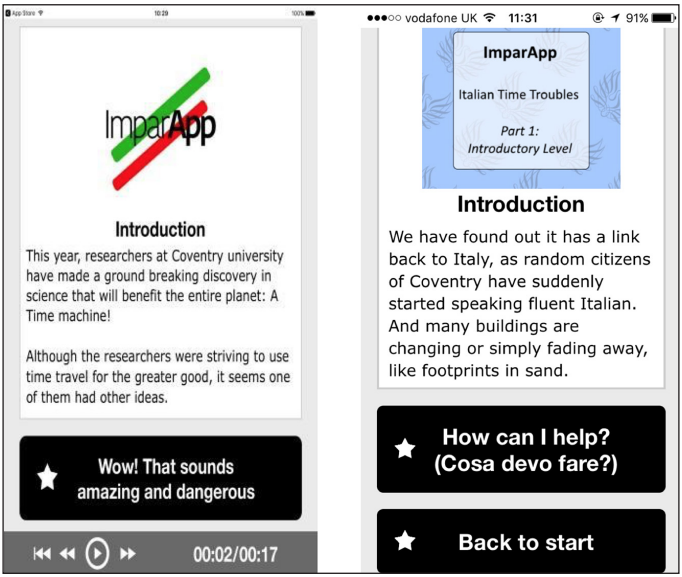
2.2. Learning objectives and content

The learning objectives and content of the *ImparApp* prototype game are wholly aligned to the syllabus of an 11-week Absolute Beginners Italian language

module at Coventry University, equivalent to half of the CEFR (Council of Europe, 2001) for languages level A1: Breakthrough. *ImparApp*, in the first instance, aims to supplement classroom activities and to consolidate and deepen students' linguistic competences. Depending on the outcomes of the pilot project, consideration will be given to using *ImparApp* in a blended mode, where students would only attend classes on a bi-weekly basis rather than in full-time mode. In the weeks they do not attend class, they will complete challenges and tasks within the app in self-guided mode. As mentioned in Charitonos et al. (2016, p. 96), through the targeted use of the app, students will have various opportunities to practise speaking and to write short passages using appropriate grammatical structures for the task and the level. Further to this, students should be in a position to recognise information and understand short texts with simple familiar words and phrases about themselves, their family, and concrete situations they know well (Council of Europe, 2001).

The app is divided into four parts. Aspects of the language are introduced gradually to the user. For example, the meta-text in Part 1 is in English while Part 2 makes use of English and includes an Italian translation in brackets (see Figure 2). Part 3 is mostly in Italian and includes translation in English in brackets. Finally, Part 4 is exclusively in the target language. As well as the language, the app also embeds content which aims to raise students' awareness of Italian culture. The game engages the users in a time travel mystery tale. The protagonist, an Italian researcher at Coventry University, decides to hijack a time machine and travels back in time with the intention of making the UK, and specifically Coventry, part of the Italian-speaking Roman Empire. Through the narrative, students have to contextualise the Italian language and culture gradually broadening their linguistic competence and digital fluency. One aspect of the narrative is to prompt users to explore the city by relating fictional, time travel connected tasks about Coventry's history, culture, and built heritage in a playful way. To progress through the game, students are required to carry out increasingly difficult challenges at the game's four levels. Additional points can be earned by completing further exercises focussing on cultural and language topics, hence embedding features that may help students connect incidental and deliberate learning activities (Gaved et al., 2013).

Figure 2. Examples of how the language is introduced



3. What we did

The initial 'play-test' session of *ImparApp* was conducted with the intent of providing the team with feedback to progress to further iterations of the game. Data collection was carried out through a series of open-ended oral questions posed to the participants both before and after the 'play-test' session. Initially, students were observed by the researchers using a structured observation sheet, further data were collected via a focus group with participants, tutors, and researchers. Seven students, attending a lower intermediate level Italian language module at Coventry University (CEFR A2), took part in the testing of Part 1 of the game. Part 1 of 4 provides an introduction to the game itself, including a manual which explains in detail the rules and mechanics of the game. This particular cohort was deliberately selected for the pre-pilot play-testing as their knowledge of the Italian language allowed them to focus mainly

on the usability and engagement aspects of the game rather than the language itself. Members of the research team accompanied the selected students around Coventry, acting as passive observers and note-takers as they worked their way through the game.

The initial findings of the data collected in the 'play-test' session revealed overwhelmingly positive feedback. Students found the pervasive game-based delivery of content engaging and effective. The data suggested that students were particularly fascinated by the narrative and were curious to find out how it ended. This indicates an interest for the immersive side of the game-based learning experience. In line with Whitton's (2014) study, students also expressed a desire to hear the storyline and instructions as sound effects embedded in the game rather than an over-emphasis on having to read them. Some negative comments were made by the students regarding the language level as being unsuitable for their language competence. As mentioned previously, having some prior knowledge of the language was a key part of the design of the 'play-test' session so that the focus of the students was specifically aimed at the game dynamics rather than the language. Further observations revealed aspects of the game that were not anticipated in the design. These included social and competitive aspects, e.g. competing and racing against the other groups. This manifested itself particularly in a desire for each group to race each other to the next location to further advance in the game. As expected when testing a prototype, other points emerged from this data, but these were mostly of a technical nature, i.e. related to interface and usability (e.g. a desire for a map zoom feature and personal avatar creation). Students' comments (e.g. add audio files) were addressed in the next iteration of the app and as a result, exploration pathways were re-designed to provide a more meaningful itinerary in the city centre. For example, a participant referred to a historic pub in Coventry: "Whitefriars Pub… I didn't know anything about the pub and the little alley behind the cathedral". Finally, in the focus group, discussion participants touched upon issues of assessment. Students shared some concerns and expressed a preference for traditional methods of assessment. For example, a participant said "you can go off the app and do the assessment checking answers on a laptop. So, still, you [teachers] need to do assessment in class".

Examples of incidental learning also emerged from the data, including embedding opportunities for students to interact with each other and with the built environment to avoid the 'heads-down' effect (Hsi, 2003).

4. Next steps

As a result of the 'play-test' session and associated iterations of the game, the *ImparApp* project enters its second phase of development, which involves further testing with key stakeholders. For example, a 'blind-test' session of the first four parts of the game will be organised, and a general invitation to students at Coventry University will be distributed. In this phase, users will be encouraged to offer feedback, and contribute to future iterative improvements of game and learning design specifics. In the final phase of the pilot project, on completion of *ImparApp,* full implementation within the Beginners Italian Course at the university, and a wider engagement with potential users will be sought, allowing the research team to inquire into a further level of the potentialities of pervasive, game-based, and mobile learning approaches in the context of foreign language learning and teaching.

5. Conclusions

This study was conceived to determine the affordances a gamified approach to language acquisition offered to learners. This went beyond existing studies in so far that learners were required to undertake activities and tasks outside the classroom walls (Charitonos et al., 2016). Depending on the outcomes of the pilot project, consideration will be given to using *ImparApp* in a blended mode, where students would only attend classes on a bi-weekly basis rather than in full-time mode. In the weeks they do not attend class they will complete challenges and tasks within the app in self-guided mode. Through the targeted use of the app, students will have numerous opportunities to practise speaking and to write short passages using appropriate grammatical structures for the task and the level. Further to this, students should be able to recognise information and understand

short texts with simple familiar words and phrases about themselves, their family, and concrete situations they know well (Council of Europe, 2001). Initial findings show that the prototype game allows students to experience their everyday living contexts and their module's content in an innovative and fun way. The project has informed the design of future iterations and has prompted the team to rethink some of the design and organisation of the app before it can be fully integrated into the curriculum. Also, Rosell-Aguilar's (2017) framework presents the team with a robust set of criteria against which the app can be evaluated.

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Published by Research-publishing.net, a not-for-profit association
Voillans, France, info@research-publishing.net

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Innovative language teaching and learning at university:
integrating informal learning into formal language education

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Cover design by © Raphaël Savina (raphael@savina.net)

ISBN13: 978-2-490057-10-8 (Ebook, PDF, colour)
ISBN13: 978-2-490057-11-5 (Ebook, EPUB, colour)
ISBN13: 978-2-490057-09-2 (Paperback - Print on demand, black and white)
Print on demand technology is a high-quality, innovative and ecological printing method; with which the book is never 'out of stock' or 'out of print'.

British Library Cataloguing-in-Publication Data.
A cataloguing record for this book is available from the British Library.

Legal deposit, UK: British Library.
Legal deposit, France: Bibliothèque Nationale de France - Dépôt légal: juin 2018.