

# A Socio-Cultural Approach to Evaluating and Designing Reading Comprehension Apps for Language Learning

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## ABSTRACT

Mobile devices are increasingly promoted as tools to facilitate ubiquitous and individualized learning, allowing learners to work at their own pace in authentic and meaningful settings. However, in the case of second language learning, there is a paucity of apps and tools related to improving students' reading comprehension in both Spanish and English. Additionally, there are few studies that address the evaluation of applications for reading comprehension and innovation in this field and this is required in order to respond to the needs of transformation in language learning teaching. The authors present an original evaluation of 25 English language learning mobile apps using the iPAC app rubric, which identifies the pedagogical features of mobile learning: personalisation, authenticity, and collaboration. The results indicate that many of the existing apps fail to fully exploit the affordances of mobile learning and collaboration in particular. The findings suggest recommendations for app developers to design comprehension apps that address these shortcomings.

## KEYWORDS

Authenticity, Collaboration, Higher Education, iPAC Framework, Mobile Learning, Pedagogical Affordances, Personalisation, Rubrics

## INTRODUCTION

Mobile learning (referred to in this article as m-learning) is increasingly designed to exploit the different affordances and features of mobile devices, including their rich multimedia capabilities which make them highly attractive in standard educational practices (Reveiu, Smeureanu, & Dardala, 2009; Area & Adell, 2009; Olmedo, Grané & Crescenzi, 2012). Research suggests students are more engaged when learning is undertaken in a playful manner with digital devices, especially when this is associated with challenges and competitive actions (Trespalcacios, Chamberlain, & Gallagher, 2011; Burden, Kearney & Schuck, 2019). Students currently inhabit a world in which different media contexts keep them permanently informed in real time, and in an interactive way. The use of mobile devices in educational contexts leads to increase motivation and has been found to be associated with faster, more individualized learning and more flexible and innovative collaborations (Area & Adell, 2009; Kearney, et al, 2012; Crompton & Burke, 2018; Burden, Kearney & Schuck, 2019). In Higher Education the majority of university students use mobile devices for tasks associated with their studies and almost half for specific learning tasks (López-Hernández & Silva-Pérez, 2016).

DOI: 10.4018/IJMBL.2021010102

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However, teachers and university educators alike struggle to select appropriate resources, and particularly apps, to support their student's learning and there is limited support or guidance available for them to make informed choices about such resources based on sound pedagogical criteria (Papadakis & Kalogiannakis, 2017; Powell, 2014). It is estimated there are over one million apps labelled as 'educational' and this number continues to increase at an exponential rate making the task of selection ever more daunting (Cherner, Dix, & Lee, 2014; Stevenson, Hedberg, Highfield, & Diao, 2015). Many apps are poorly described or misappropriately labelled in the various app stores and a significant number of those that have been analyzed have been found to be largely 'drill and skill' in nature, based on an instructivist or transmissive pedagogy that is at odds with the more constructivists and collaborative affordances of mobile devices (Bano, Zowghi & Kearney, 2017; Goodwin, 2012; Murray & Olcese, 2011). Whilst there have been a number of attempts to develop typologies and recommendation lists to aid educators in their selection of appropriate mobile apps, most of these have had only partial success because they do not focus on the pedagogical orientation of the app or its utility for a particular pedagogical purpose (Cherner, Dix, & Lee, 2014; Lee & Cherner, 2015). In this paper, the researchers present the preliminary findings from a study exploring the utility and value of an internationally validated app evaluation rubric based on the iPAC framework developed by academics in Australia and the UK (Kearney, Schuck & Burden, 2020, in press). The rubric has been used by the authors to review a broad selection of reading comprehension apps for Spanish speakers and here we present the findings from this exercise and explore how these have been used to inform the mobile pedagogical characteristics and development of an innovative mobile learning app to support reading comprehension for Spanish learners.

## **BACKGROUND**

### **M-Learning**

M-learning is often described as more agile and spontaneous than other learning approaches (Ozdamli & Cavus, 2011; Traxler & Kukulska-Hulme, 2005) since the technologies that underpin it are ubiquitous and pervasive. M-learning frees students from the confines of traditional classrooms (Sha, Looi, Chen & Zhang, 2012) and with features such as GPS and location awareness, it is possible to tailor specific locations to particular types of learning experiences based on the needs of the individual learner, often referred to as location based learning.

These features or affordances of mobile technologies indicate a shift in how we conceptualize and think about teaching and learning and they have therefore been accompanied by the development and promotion of different theoretical frameworks and models to help understand and analyze the growing phenomenon of m-learning. Some of these are briefly reviewed in the section that follows, leading to a justification for the use of the iPAC framework in this particular study.

### **M-Learning Frameworks and Models**

A significant volume of theoretical frameworks and models have been developed to understand the phenomena of m-learning ranging from techno-centric models that focus primarily on the device, through to sociocultural frameworks that emphasize the interplay between the device, the user and the broader context within which this is situated (see Chapter 5, Kearney, Schuck and Burden, 2020 in press).

The researchers acknowledge the value of these different theoretical approaches but have chosen to underpin our work with the iPAC framework which is a well validated, socio-cultural model of mobile learning (Kearney, et al, 2012). This decision was based on the subject matter of the study which focuses on reading comprehension and is therefore well aligned to many of the constructs and sub-constructs that constitute the iPAC framework as explained below.

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