Mobile Apps for Learning Vocabulary: 
Categories, Evaluation and Design Criteria for Teachers and Developers

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ABSTRACT
In this article the authors discuss the potential for mobile devices, mainly smartphones and tablets, to be used for language learning, offering frameworks for users to apply, including the categorisation of the different contexts and applications (apps). They suggest critical success factors, including the importance of the user interface design and a taxonomy of interactivity and mobile “affordances” for publishers, developers, and users to consider when either evaluating existing apps, or developing their own mobile learning materials. The authors illustrate how these frameworks and taxonomies can work by applying them to the area of vocabulary learning. The article includes two case studies of app development projects in which one of the authors has had direct involvement to explore the relative benefits and dis-benefits of re-versioning existing CDROM-based materials against developing an entirely new mobile learning app. Finally, they discuss the potential chasm between those interested in the potential of mobile language learning, including developers with insufficient knowledge of pedagogy, and language teachers who know about pedagogy, but have little interest in mobile learning. The article concludes with recommendations about how to overcome this divide with suggestions on how developers could make their language learning apps more pedagogically useful.

Keywords: Case Study, Design, Frameworks for Development, Language Learning, Mobile Learning

INTRODUCTION
As will have been noted elsewhere in this journal, the growth in mobile internet access using smartphones and tablet devices has been hugely significant since Apple launched its iPhone in 2008. At the time of writing around 700,000 apps (148Apps.biz, 2012) (see the definition) are available on Apple’s app stores with comparable numbers in Android App stores and for other smartphone platforms. There are around 70,000 iPhone/iPad (148Apps.biz, 2012) apps in the education category, and we estimate approximately 1000 to 2000 language learning apps. We will discuss how smartphones and tablet devices offer opportunities for learning and teaching, though mindful of the need to distinguish between language learning contexts,
particularly between stand-alone self-study and the role of mobile learning in a programme of study. We will therefore discuss the range of smartphone apps that can be used in both contexts, including ‘productivity apps’ and other apps intended for business use, general education or creativity.

We will also discuss our review of smartphone apps conducted between 2010 and 2012 and use this review to inform a framework for the development of pedagogically useful mobile learning resources, focusing particularly on vocabulary learning. In our research and work with publishers we have come to appreciate both the high development costs for good quality mobile learning resources and the need for good quality mobile learning apps to be commercially viable. We believe that all app publishers, whether motivated by profit or more philanthropic intentions need to engage with the following critical success factors for language learning technology-enabled materials:

- **Pedagogy**: How does the resource reflect best practice in materials design, learning and teaching? Are the learning contexts and outcomes clear?
- **Technology**: Is there a good match between pedagogy and technology?

Discussion of these areas will be underpinned by two case studies involving one of this article’s authors, Caroline Moore. The first case study discusses the conversion of complex CDROM-based materials into iPad apps and offers recommendations to publishers and others considering similar projects. The second case study describes the process of creating a vocabulary learning app from new by a newly formed “start-up” company.

### CATEGORISING LEARNING AND LANGUAGE LEARNING APPS

There are several ways of categorising mobile apps which are relevant to understanding the potential of apps to support learning.

### App Styles

Firstly there is the fundamental type of app from a programming or app design perspective. One of the authors (Sweeney, 2011) refers to some analysis by Ginsburg (2010) in a design manual for iPhone and iPad apps. Ginsburg discusses the depth of thought which has gone into User Experience design which is embodied in the Apple iPhone Human Interface Guidelines (HIG) (iOS Developer Library, 2012). Ginsburg’s cites the HIG that apps should fall into one of three styles:

- **Utility**: Single function, quick look-up - such as a weather forecast checking app.
- **Productivity**: More fully featured with a range of connected functionalities. Appropriate to where the users are using the app and what they are trying to achieve.
- **Immersive**: Used to play games, view media and perform specialised tasks.

From this perspective, Sweeney points out that a dictionary app—to choose an example relevant to vocabulary learning—should conform to the utility standard for basic dictionary functionality (single function, quick look-up). An app which aims to encourage learners to acquire vocabulary should do more than just this and draw on good practice for productivity apps, i.e., there should be a range of functionalities available to the learner to support this aim. An immersive style of app ‘offers a full-screen, visually rich environment that’s focused on the content and the user’s experience with that content […]’ is more ambitious yet and much harder to get right. Apple’s HIG p.25 states with an immersive style app ‘people expect to enter a unique world filled with rich, beautiful graphics and innovative interactions’ (Apple HiG, 2012, p. 25).

### The Importance of the ‘User Experience’ and ‘User Interface’

The previous section on different app styles may seem overly technical in an academic discussion. However, it is well to remember...
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