

# Chapter 56

## A Learning Theory Rubric for Evaluating Mobile Learning Activities

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### ABSTRACT

*Learning theories underpin the expectations of meaningful outcomes that any given learning task should have. However, educators' understanding and application of such theories is likely to vary with their own experience and context. In this article, we explore the potential value of a rubric for the design of mobile learning activities that is based on a core set of six learning theories, which we have identified from the literature as being highly relevant to the context of mobile learning. The key concepts of these theories have been used to create the evaluation rubric, which supports the analysis of learning activity design from the perspective of each of the chosen learning theories. The application of this rubric is explored from two perspectives. First, we apply it to an existing mobile learning activity to evaluate to what extent the activity embodies the theories within the rubric. Then we propose a redesigned activity by using the rubric as a guiding framework for improving the task design. This process demonstrates the potential value of applying such a rubric to designing mobile learning activities, to ensure that they adequately leverage the components of one or more relevant theories.*

### INTRODUCTION

A learning theory can be described as a conceptual framework used to understand and frame how information is absorbed, processed, and retained during learning (Luis & D'Cunha, 2014). Considering how relevant theory underpins learning activities is important to ensure appropriate pedagogical practice. This is especially important when adopting emerging technologies, such as mobile technology, to ensure that

DOI: 10.4018/978-1-7998-1757-4.ch056

the learning, not the tool, is the driver of the activity. Since mobile learning is primarily a 21st century phenomenon, there has been considerable debate about whether it is significantly different from more traditional forms of learning to warrant its own unique theory, or whether it is simply underpinned by a range of existing theories. Harasim (2012) notes the historical context of 20<sup>th</sup> century learning theories and questions whether new contexts and technologies require new learning theories. In addressing whether we need a new theory of learning for the mobile age, Sharples, Taylor and Vavoula (2010) identified the criteria that should underpin mobile learning theory and differentiate it from other existing learning theories. Most crucially they stated that a theory of mobile learning should account for the mobility of learners and should analyse learning as a personal and situated activity mediated by technology. It is not the focus of this article to consider any new theory of mobile learning. Rather, it considers which pre-existing learning theories are important for the design of mobile learning activities, since we believe that many theories that pre-date mobile learning are nevertheless congruent with the criteria above. As Harasim (2012) notes, there is an intrinsic link between theory and teaching practice even if this is implicit, thus theory, old or new, is what we operationalise in our pedagogy. The assertion of this article is that consciously mapping appropriate learning theories to a given activity can help educators to understand and apply appropriate mobile learning and teaching practices.

There are many learning theories, most of which have been developed over the last century or so. There are also many categorizations that may be applied to these theories, but we might make a distinction between those that look at intrinsic factors, such as the cognitive processing that goes on inside the brain, and those that look at extrinsic factors, such as context, social interaction and (increasingly digital) learning tools. Some theories are grounded in experimental methods, such as classical and instrumental conditioning, while others are less rigorously validated and open to more interpretation (e.g. connectivism). Some families of theory are so broad as to embrace the work of many researchers and include a multiplicity of concepts (e.g. constructivism).

Herrington and Herrington (2007) state that guidelines for learning with mobile technologies should be theory-informed. A clear understanding what learning theories underpin a learning activity will help inform and ensure effective pedagogy. Laurillard (2009), having earlier mapped mobile learning to her conversational framework (Laurillard, 2007), outlined how a number of different theories underlie the framework, emphasising instructionism (i.e. behaviourism), constructionism, social constructivism and collaborative learning (or ‘social constructionism’). However, the focus and context of a learning activity will lead to different levels of each element as each one is appropriately applied. Mobile technologies lend themselves to certain activities, and they might be only one element of a larger learning experience; mobile activities are often integrated as part of blended learning contexts, including face to face classroom interactions. Therefore, it is important to clearly understand how a given learning activity interacts both with its context and with relevant theory.

Which theories apply most directly to mobile learning may, perhaps, be analysed through the lens of affordances. In an earlier article (MacCallum & Parsons, 2016) we used an analysis of affordances to select a subset of six theories that we believe are fundamental to mobile learning, namely; behaviorism, constructivism, experiential learning, situated cognition, communities of practice and connectivism. These are outlined in the following section. In each case, there is a brief outline of how the use of mobile devices can support each type of learning.

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