

## Chapter 15

# Transforming Learning with Mobile Games: Learning with mGames

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### ABSTRACT

*This chapter will describe the evolution of mobile games and learning by first discussing whether media can support learning. This chapter will address the affordances and limitations of mobile gaming and the learning theories and frameworks that lay the foundation for learning through mobile games. Current perceptions of mobile gaming in the classroom and implementation of mobile games in schools is discussed. In addition, this chapter introduces positions on the issue of mobile games in the classroom, and explores mobile games for social change, their prevalence and their role in facilitating learning.*

### INTRODUCTION TO MOBILE GAMING

Trends in the gaming industry, in particular, technological advances have spawned innovative ways of gaming with new technologies. In particular, the evolution of mobile gaming has penetrated and prevailed among populations of all ages and experience levels. Market data shows that mobile gaming has transformed into a 20 billion dollar industry, with 144.1 million mobile phone gamers in the U.S. alone, its penetration being 45.2% (Statista). This chapter will describe the evolution of mobile games and learning by first discussing whether media can support learning. This chapter will address the affordances and limitations of mobile gaming and the learning theories and frameworks that lay the foundation for learning through mobile games. In addition, this chapter introduces positions on the issue of mobile games in the classroom, and explores mobile games for social change, their prevalence and their role in facilitating learning.

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## **Mobile Games and Learning**

When considering mobile games in the context of learning, it is highly important to understand the nature and evolution of media and instructional content. One cannot differentiate educational games from the learning objectives that it is trying to accomplish. The evolution and changes in the medium of delivery for games, from console to desktop to mobile, are important factors to consider in order to understand the potential of each platform. However, first a brief history of technology and learning will help us understand the functions of media. Games are considered a part of new media, a term that developed in the 1970s used to describe media that was networked, interactive and could be manipulated (New Media Institute).

## **Can mGames Support Learning? The History of Technology and Learning**

Games have become an extensive part of the new media. There is much debate about whether media itself has the potential to support learning. There are three key elements one must consider when attempting to answer this question: the media, the information, and the learner. The diversity of positions surrounding this topic differs according to how individuals believe the media, the information, and the learner relate to one another. As you will see, the various perspectives also seem to cohere with the views regarding instructional technology that were popular during that time period.

Early views on instructional technology were focused on harnessing the power of the media for educational application. The contemporary instructional media during the 1940s and 1950s were audio-visual devices, overhead projectors, simulators and instructional television (Reiser, 2011, p. 2). These devices were used to present instruction to the intended learners. Evolved from this pattern, in 1963, instructional technology was defined as audio-visual communications concerned with design and use of messages which control the learning process (Reiser, 2011, p. 2). The use of the contemporary instructional media in addition to the establishment and approval of an instructional technology definition laid the framework for the perspective that messages are embodied by the instructional media. McLuhan (1964) advocates that the medium is the message. This position holds that media technology is responsible for learning, independent of informational content. According to the lecture, “McLuhan suggests that each medium lends itself to different ways of portraying information”. It is believed that media is what elicits the learning process because technology constructs the messages that are relayed to the learner. The construction of messages is dictated by the capabilities of the technology. Rather, the affordances of media regulate the learning process.

Proponents of this view find support for their position in attempting to distinguish how characteristic properties and capabilities of media determine potential learning outcomes, such as media comparison studies. An article by Collins et. al. (2000) helps to illustrate this perspective by providing a framework for how affordances and constraints of different media aid in structuring the design of learning environments. The authors discuss how media differ with respect to their transmission, recording, production, and social characteristics. These characteristics determine what the media can and cannot accomplish with respect to communicating and presenting information. Because of learning from media is a function of how successful media can transmit information; learning environments utilizing a particular media form are bound by the capabilities and constraints of that particular medium. Considering the interplay of the three elements, from this “medium is the message” perspective, the media prescribes constraints of the information, the information is manifested in the media, and the learner receives information

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