Chapter 6
Learning Theories: ePedagogical Strategies for Massive Open Online Courses (MOOCs) in Higher Education

Eileen O’Donnell
Trinity College Dublin, Ireland

Seamus Lawless
Trinity College Dublin, Ireland

Mary Sharp
Trinity College Dublin, Ireland

Liam O’Donnell
Dublin Institute of Technology, Ireland

ABSTRACT
This chapter reviews various learning theories about e-pedagogical strategies for the effective use of massive open online courses (MOOCs) in higher education. E-pedagogical strategies refer to the various teaching methods or approaches used by educators when encouraging students to engage with online learning. An up-to-date broad knowledge of learning theories is required by educators to inform and inspire their teaching approaches. Before developing lesson plans, educators should have a clear idea of the learning outcomes which they hope the learners will achieve by engaging with the lessons, be they delivered on or off line. By knowing the desired learning outcomes in advance of developing the lesson plans, educators have the opportunity to consider various learning theories, teaching methods, and pedagogical strategies to select the most appropriate one(s) to use when creating course content for MOOCs. The chapter continues the discussion on ‘ePedagogy and interactive MOOCs’ from the perspective of addressing the topic of ‘ePedagogy and students’ use of HCI (integrating interactivity into asynchronous MOOCs).

INTRODUCTION
Pedagogy is the science of teaching and learning, encompassing the study of a broad range of teaching strategies/methods and learning theories to facilitate intellectual engagement with students to encourage learning. Pedagogy is the study of learning in specific circumstances to formulate a theory of effective learning (Kumar, 2007). E-pedagogical strategies are about formulating theories of effectiveness of learning in environments which use information communications technology.
Learning Theories

(O’Donnell, Sharp, Wade, & O’Donnell, 2013). The motivation for this chapter is to review some, but not all learning theories and then discuss their suitability as e-pedagogical strategies for MOOCs in higher education.

When developing course notes and assessments many teachers are not consciously aware of which learning theories they are using and why (Hassan, 2011). Some teachers simply follow the instruction methods employed by teachers which they themselves had in the past. Ideally, all teachers should be familiar with the main learning theories which are: behaviourism, cognitivism, and constructivism (Yilmaz, 2011) before they commence teaching. This awareness would encourage teachers to be more consciously aware of the teaching methods which they are using and why they are using them. Teachers need to learn how to teach in a supportive environment (Scott, 2011). Some teachers deliver a set lesson from a presentation which they believe adequately covers the topic but leave no time for discussion or questions from students. Learning theories explore different aspects of the learning process and are therefore essential for effective teaching practice (Yilmaz, 2011). Reviewing various different learning theories may inspire teachers to vary their teaching methods.

A massive open online course (MOOC) refers to a freely available online course which offers unlimited participation and the opportunity to build communities of practice. MOOCs provide students with electronic access to peer support from other learners and the opportunity to interact with experts in the subject matter (McAuley, Stewart, Siemens, & Cormier, 2010).

The opportunities for teaching and learning have radically changed in recent years (Ozkan & Koseler, 2009). No longer do students have to attend lectures. Should a student miss a lecture through illness/work, or some other constraint on their time, he/she can later watch streamed online webinars if they are available, or engage in online discussions about the lecture which they have missed. Alternatively, students can read notes or presentations which have been made available online, through a learning management system or otherwise. Some teachers feel threatened by the use of technology in education because they fear that eLearning may make them redundant. However, 63 percent of the students surveyed who were studying in Trinity College Dublin and 58 percent of the students surveyed who were studying in the Dublin Institute of Technology (O’Donnell & Sharp, 2012) disagreed with the statement that “the use of technology in education could successfully replace the learning achieved through interaction with lecturers” (O’Donnell & Sharp, 2011, p. 14). In 1958 Burrhus Frederic (B. F.) Skinner (1904-1990) (Skinner, 1958) suggested in an article that audio visual aids enhance lectures, demonstrations and textbooks and may in the future even replace them (Skinner, 1958), audio-visual aids have not yet supplemented lectures, demonstrations, and textbooks, but they have certainly enhanced them.

Some lecturers put webinars of their lectures and files of their presentations or course notes online; to help their students revise, etc. other lecturers choose not to share videos of their lectures, or make available presentations or course notes online. Some of the reasons why lectures choose not to make webinars, presentations and notes available online are: to encourage students to attend class in person and to protect the copyright of their course material. While some other lecturers feel they have insufficient training in the use of eLearning platforms to effectively engage with them. Others feel that they simply do not have the time to engage with eLearning environments. In a survey of forty-one lecturers, only 15 percent of them felt that they had sufficient time to create course material for eLearning (O’Donnell, 2008).

MOOCs offer learners a totally different learning experience to the one offered by traditional bricks and mortar universities with their ivory towers and walled gardens (McAuley et al., 2010). MOOCs are a relatively new departure.
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