Chapter 14
ClassSim: An Approach to Educator Development Through a Simulation

Brian Ferry
University of Wollongong, Australia

Lisa Kervin
University of Wollongong, Australia

Lisa Carrington
University of Wollongong, Australia

ABSTRACT
This chapter presents one approach to educator development through games and simulations. The goal of the authors’ project was to enhance pre-service teachers’ ability to bridge the gap between the theory and practice of teaching. Some criteria that the authors regarded as indicators of success were the facilitation a professional dialogue, an emerging understanding of content delivery and the articulation of workplace culture in the teaching profession. The chapter describes the theory underpinning of the design and the research approaches used. In particular, the authors explain how cognitive load theory was applied to the design of the key features of this virtual learning environment. They also summarize six years of research that has consistently found that the virtual learning environment of ClassSim provides an effective way of introducing pre-service teachers to their future work in classrooms.

INTRODUCTION
As teacher educators, we are always looking for more effective and relevant ways to bridge the gap between theory and practice, to develop pedagogical content knowledge, and ultimately to enhance the development of pre-service teachers’ (PSTs’) professional identities so that they can be confident and effective teachers when they graduate. One approach that we have tried has been to use a virtual learning environment (VLE), known as ClassSim, as a tool to experiment with practical scenarios while providing explicit links to the theory that PSTs are exposed to during training.

ClassSim is a walk through, scenario-based simulation in which the user assumes the role of
the classroom teacher of a class of five-year-olds
during a literacy learning session. A number of
virtual episodes (or lessons) are included for the
user to explore and, as each episode unfolds,
PSTs make a number of decisions regarding the
management of the classroom and the organiza-
tion of the literacy learning session. Until recently
limited research has been conducted on the use
of VLEs in PST education and how engagement
with such environments can support the learning
and development of future teachers. This project
gave us an opportunity to gain some insight into
PSTs’ engagement with a VLE designed to assist
them to make connections between the theory and
practice of teaching.

The objectives of this chapter are to describe
the theory that informed the design of ClassSim
and to report on our research with PSTs over the
past six years. In particular we draw upon cognitive
load theory (CLT) to clarify how we operational-
ized some of the recent key recommendations of
evidence-based research into the organization of
instruction in order to facilitate effective learner
processing of information (Pashler, et al., 2007).

BACKGROUND

Researchers report that when teachers reflect
upon their role in the profession, they are not
necessarily focused on what they know and what
they can do (Allen, 2005; Sachs, 1999). Rather,
they are more likely to question their own role
within a situation. Thus, teachers appear to be
more interested in understanding their immediate
professional situation in connection with their
previous personal and professional experiences.
Instead of the question what do I know, or what
can I do, for many teachers their interest is in the
question who am I, what relationship do I have
with the learner, what is my relationship with
school administrators, and how have my personal
experiences contributed to my development as
a teacher. These questions demonstrate the role
played by both the physical workplace and the
individual’s networks in the development of a
teacher’s professional identity.

Learning a profession means learning about
the culture of the occupation and each profession
has its own disposition and learnt behavior that
is often referred to as the culture and practice of
that profession. Teaching, as an example of such a
profession, involves specific knowledge and skills
related to pedagogical understandings, knowledge
of workplace culture and awareness of their re-
 sponsibilities within the profession. In exploring
the culture and practice of teaching Sachs (1999)
identifies the need for retrospective and prospec-
tive identities; retrospective identities use the
past to explain the present within the profession,
while prospective identities examine the future
nature of the profession. We hypothesized that a
VLE, such as ClassSim, affords opportunities for
users to consider retrospective and prospective
identities as a simulation allows users to observe
and investigate what is happening at a moment
in time, but it also allows the user to pause and
reflect upon what has happened, with opportunity
to change and redirect the future sense of story
presented in the simulation. Allen (2005) asserts
that such aspects of teacher professional growth
are not taught, rather they are shaped by teachers’
past critical incidents including the workplace
and an individual’s professional networks. As a
result Allen’s work, we also hypothesized that a
VLE has the potential for PSTs to experience a
series of workplace events and critical incidents
that may help to shape their developing pedagogy.

Overview of Research Into the Use
of Online Simulations and Games
in Initial Teacher Education

Since 2000 Interactive Communication Tecvhnolo-
gies (ICT) have evolved to the point where
researchers with low budgets can begin to take
advantage of its potential in gaming and simula-
tion design. Some recent examples are the work