Chapter 9
Evaluating the Risk of Digital Addiction in Blended Learning Environments: Considering ICT Intensity, Learning Style, and Architecture

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ABSTRACT

Digital addiction is a phenomenon where people who might take up addictive substances or other self-medicating activities do so instead with information and communications technology. The environment in which someone finds themselves is known to influence their behaviour. This might be as a result of the environment placing more demands on people with one cognitive set-up compared to those with a different one. One might not normally think of education environments as addictive, but the introduction of technology into them can affect different learners in different ways. Through computing a measure of brain activity called knol (k), this paper seeks to explore how learners with different learning styles react in environments that are differentiated according to the intensity of ICTs used and the physical architecture of the learning environment in which those ICTs are used.

INTRODUCTION

The concept of Internet addiction has been in existence for some time (Beard, 2005; Young, 1998a; Young, 1998b). However, the idea that people can be addicted to the Internet as a medium is less than satisfactory. This chapter looks at measuring ‘digital addiction’, which assumes not that digital technology is addictive, but that people with compulsive tendencies will use it as if it were. In other words, someone who has digital addiction is not addicted to technology, as they would engage in some other compulsion, such as smoking or drinking. Equally, it is unsatisfactory to use the term ‘Internet gaming addiction’
because one would not say board gamers who play and drink at public houses have “pub addiction” as the public house is simply the venue for their compulsive game playing and drinking.

This chapter therefore seeks to assess the impact the environment in which a person is situated has on their propensity to be compulsive in their use of digital technologies. It is assumed throughout that addictive behaviours are caused as a result of disruption to the optimal regulation of a person’s dopamine and serotonin levels, which creates a condition called serotonergic-dopaminergic asynchronicity, or ‘SDA’ (Bishop, 2011; Bishop, 2012).

BACKGROUND

This chapter looks at how digital addiction can manifest in educational environments through learners increasing the extent to which they are excited by or engaged with the environment in which they are located. To test this there are three variables that are controlled for. This includes the intensity of ICTs used in the environment, the learning style of the participant and the architecture of the environment in which the learning takes place.

ICT Intensity

The intensity of the use of information and communications technologies in a classroom can affect the extent to which learning outcomes are achieved and learners are able to feel a sense of community. Figure 1 sets out the blended learning continuum (Chew, Jones, & Turner, 2008), which is utilised in this chapter to design the learning environments in which the learners’ level of engagement and propensity to experience digital addiction are measured.

Figure 1. The blended learning continuum