Chapter 20
Student Engagement with Technology: So, What’s it Got to Do with Learning?

Garry Falloon
University of Waikato, New Zealand

ABSTRACT
This chapter explores significant findings from a two-year study of 9 and 10 year old students working in a technology-rich classroom in the northern region of New Zealand. It specifically reports on outcomes relating to the nature of student engagement with learning tasks while using the technology, and poses some questions about the nature of this learning, and how it occurred. Using a case study methodology, the research utilized innovative screen recording software that allowed for authentic data to be collected about student work processes and interactions, as they navigated their way through learning tasks using the technologies at their disposal. Findings indicate that while student engagement and what appeared to be ‘on task’ behaviors were high, this was often not focused towards meeting planned learning outcomes, and that while the technology was a valuable resource to support the learning of more capable and independent students, others struggled to gain any significant learning benefit from its availability.

INTRODUCTION
Back in 1998 in his book Growing up Digital-The Rise of the Net Generation, Don Tapscott commented that young people born in the 1990s were the first generation to truly grow up in a world surrounded by an array of digital technologies which they could access and use in virtually every facet of their daily lives. He termed this the Net Generation or N-Gen, and claimed that their unprecedented access to digital technologies particularly for communicative purposes, had the potential not only to transform what they learned, but also cognitively, how they learned. Similar
views were later echoed by Marc Prensky in his 2001 paper Digital Natives, Digital Immigrants: Do they really think differently? In his discussion, Prensky goes even further than Tapscott in asserting that today’s young people are somehow ‘wired differently’, with a superior capability to their digital immigrant parents and teachers to use digital tools to make sense of, and interact with each other and the world around them.

Prensky’s arguments dwell at some length on the capacity of digital technologies to engage young people for prolonged periods, in what appears to be sustained cognitive activity. To illustrate this, he discusses the powerful impact that digital gaming has had on young people, and counters the criticism often leveled at N-Geners of diminished attention spans head on, with statements such as…

...sure, they have short attention spans, for the old ways of learning. Their attention spans are not short for games, for example, or for anything else that actually interests them. Traditional schooling provides very little of this compared with the rest of their world. So it generally isn’t that Digital Natives can’t pay attention, it’s that they choose not to. (Prensky, 2001, p. 4)

Such criticism of present educational methods and their apparent failure to capitalize on what are presented as the obvious benefits of using digital technologies in learning, should have every self-respecting teacher running to their principals demanding a laptop on every desk. However, while not disputing Prensky’s claims about young people’s passion for digital gaming, engaging in playing computer games, while being a lot of fun, is a far cry from using technologies in the cut and thrust of the classroom, for the hard graft of learning. There is little doubt about the seemingly magnetic attraction of the computer screen to the eyes of today’s youth, but there seems to be an unquestioned assumption by such authors that this attraction translates into useful learning. That is, because students are paying attention, then useful learning must be happening.

A number of other studies have also attempted to draw links between technology use, learning engagement, and improved student outcomes (for example: Bradbrook, Alvi, Fisher, Lloyd, Moore, Thompson, Brake, Helsper & Livingstone, 2008; Condie, Munro, Seagraves & Kenesson, 2007; Hollingworth, Allen, Hutchings, Kuyok & Williams, 2008; Jarvela, Veerman & Leinonen, 2008; Passey, Rogers, Machell & McHugh, 2004; Somekh, Underwood, Convery, Dillon, Lewin, Mavers, Saxon & Woodrow, 2004; Somekh, Haldene, Jones, Lewin, Steadman, Scrimshaw, Sing, Bird, Cummings, Downing, Harber-Stuart, Jarvis, Mavers & Woodrow, 2007). While it is not possible within the limitations of this chapter to detail each of these, it would be fair to state that outcomes from these studies have been mixed. Where motivational benefits were identified, they usually related more to the aesthetic-enhancing and functional (cognitive tool) qualities of particular software, or the visual appeal or “wow factor” (Hollingworth et al., 2008, p. 53) of so-called educational games, rather than any use that conclusively pointed to enhanced engagement in activities likely to lead to higher levels of cognitive functioning.

The following study goes ‘behind the screens’ to find out exactly what goes on when some students are using technology for learning in their classroom. It details findings of a two-year doctoral study, which explored the way in which students working in a digital classroom environment engaged with and completed learning tasks, through the ‘saturated’ use of technology. While the thesis research was broad in nature in that it encompassed an analysis of social, affective, and cognitive impacts, the discussion that follows will specifically concentrate on student engagement with learning tasks through using the technology. It will identify what precisely they were engaged with, and how, and detail a variety of strategies...