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Facebook® and academic performance

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ABSTRACT

There is much talk of a change in modern youth – often referred to as digital natives or Homo Zappiens – with respect to their ability to simultaneously process multiple channels of information. In other words, kids today can multitask. Unfortunately for proponents of this position, there is much empirical documentation concerning the negative effects of attempting to simultaneously process different streams of information showing that such behavior leads to both increased study time to achieve learning parity and an increase in mistakes while processing information than those who are sequentially or serially processing that same information. This article presents the preliminary results of a descriptive and exploratory survey study involving Facebook use, often carried out simultaneously with other study activities, and its relation to academic performance as measured by self-reported Grade Point Average (GPA) and hours spent studying per week. Results show that Facebook® users reported having lower GPAs and spend fewer hours per week studying than nonusers.

1. Introduction

We read it every day in the newspapers, hear it constantly on the news, and thanks to our Really Simple Syndication (RSS) feeds, we also get it 24/7 online. The "it" is the news about today's children who are spoiled, love luxury, have bad manners, have contempt for authority, are disrespectful to their elders, contradict their parents, and tyrannize their teachers. We also are constantly being reminded of the fact that the world is passing through troubling times, and that young people today think of nothing but themselves, are impatient, talk as if they know everything, and what passes for wisdom for us is foolishness for them. The only problem with the aforementioned is that the first statement was uttered by Socrates, sometime around 300 BCE and the second statement was uttered by Peter the Hermit, a priest of Amiens and a key figure during the First Crusade, who died July 8, 1115 in Neufmoutier by Huy in Belgium.

A glance in the myriad of scientific journals, academic book sellers, and web sites cannot help but make us think that today's generation of children is radically different from its predecessors. It appears that the Baby Boomers have spawned Generation X, the MTV generation, Net Geners, Millenials, Generation Y/iGeneration, and even Generation Z (Howe & Strauss, 2000; Oblinger & Oblinger, 2005; Prenksy, 2001; Rosen, 2007; Tapscott, 1997). At a recent conference of the Western Psychological Association (i.e., April 23–26, 2009 in Portland Oregon), Rosen defined these children as follows:

> Welcome to the Net Generation. Born in the 1980s and 1990s, they spend their days immersed in a "media diet" accumulating a fulltime job plus overtime devouring entertainment, communication, and every form of electronic media. They are master multitaskers, social networkers, electronic communicators and the first to rush to any new technology. They were born surrounded by technology and with every passing year they add more tools to their electronic repertoire. They live in social networks such as Facebook, MySpace, and Second Life gathering friends; they text more than they talk on the phone; and they Twitter the night away often sleeping with their cell phones vibrating by their sides.

The assumption is that these children now have acquired specific new multitasking skills that they are able to apply in a learning setting, and that education as we know it is frustrating them in the application of these multitasking skills. Unfortunately, most empirical research shows that this is not the case finding either that (1) children do not possess these skills, or (2) that acting in this way negatively affects the processing of information. This article first tackles these two widely-held, modern-day "truths," and then presents the results of a preliminary study on the potential relationship between Facebook® (FB) and academic performance.

2. We hold these truths to be self-evident

We see children today doing their homework, watching YouTube®, instant messaging (IM), Twittering, using FB, surfing

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websites, and so forth in a way that seems as if they are doing all of this simultaneously. In other words, today's learners are multitasking *Homo Zappiens* (Veen & Vrakking, 2006). Consequently, the assumption is made that these children are also able to do all of this effectively, efficiently, and without a loss to the present task. But is this so? Is the youth of today a *Homo Zappien*, and can children, adolescents and emerging adults really multitask?

2.1. Homo Zappiens

Wim Veen proposed the term Homo Zappiens, referring to the new generation of learners who, according to him, unlike their predecessors, learn in a considerably different way. According to Veen and Vrakking (2006), children belonging to this generation develop – on their own and without instruction – the meta-cognitive skills necessary for enquiry-based learning, discovery-based learning, networked learning, experiential learning, collaborative learning, active learning, self organization and self regulation, problem-solving, and making their own implicit (i.e., tacit) and explicit knowledge specific to others. In addition, Beastall (2008) stated that the current generation of children and young adults have an advanced relationship with technology that is formed at birth. Prenksy (2001) noted their familiarity with and reliance on Information and Communication Technology (ICT), describing them as living lives immersed in technology, "surrounded by and using computers, videogames, digital music players, video cams, cell phones, and all the other toys and tools of the digital age" (p. 1). He argues that children and young adults today, due to their relationship with technology from birth, have an innate technological competence that can be characterized as multitasking (i.e., parallel processing functions; Prensky, 2003). The author also details that even very young children are developing multitasking strategies via technological familiarity that enable them to navigate novel spatial environments, and recognize and manipulate visual images. Overall, according to Prensky (2003), encounters with technology can allow young children to have experience with how sounds, images and texts interact, which may be crucial to early schooling success and overall development in this digital world.

But does such an information technology-savvy generation actually exist? Owen (2004a, 2004b), Director of Learning at the United Kingdom's (UK) Nesta Futurelab, has shown that the majority of children in advanced economies spend less than 30 min a day on the computer. Additionally, the main demographic for computer game playing is 20–35 year-olds, and in the United States, the highest usage of the Internet at home is among 35–44 year-olds (National Telecommunications and Information Administration, 2000). More recently, Margaryan and Littlejohn (2008) reported that current university students (i.e., those in the Net Generation) use a limited range of technologies for learning and socialization. They state:

> For learning, mainly established ICTs are used – institutional VLEs [Virtual Learning Environment], Google and Wikipedia, and mobile phones...the findings point to a low level of use of and familiarity with collaborative knowledge creation tools, virtual worlds, personal web publishing, and other emergent social technologies (p. 1).

A number of recent research studies (Bullen, Morgan, Belfer, & Qayyum, 2008; Ebner, Schiefner, & Nagler, 2008; Kennedy et al., 2007; Kvavik, 2005) in different countries (e.g., Austria, Australia, Canada, Switzerland, the United States) question whether Homo Zappiens or Net Geners really exist. These researchers found that university students do not really have deep knowledge of technology, but that this is often limited to basic office suite skills, e-mailing, text messaging, FB, and surfing the Internet. According to Kvavik, students have basic office suite skills and can use e-mail and surf the Internet with ease but "...moving beyond basic activities is problematic. It appears they do not recognize the enhanced functionality of the applications they own and use." (p. 7.7). He also states that "...significant further training in the use of information technology in support of learning and problem-solving skill..." is needed; "...[s]tudents appear to be slower developing adequate skills in using information technology in support of their academic activities which limits technology's current value to the institution" (p. 7.17). In a learning environment, functionality was limited to mostly passive consumption of information (e.g., Wikipedia®) or for downloading lecture notes.

The fact that children nowadays make use of many electronic devices and are called digital natives does not make them good users of the media that they have at their disposal. First, they are capable of playing with technology, but not really using it efficiently (Bullen et al., 2008; Kvavik, 2005). They can Google®, but lack the information skills to effectively find the information they need, and they also do not have the knowledge to adequately determine the relevance or truth of what they have found. This leads to essays on Baconian science (i.e., Francis Bacon, the 16th-century natural philosopher) with texts about the 20th-century British artist Francis Bacon and on the problems that Martin Luther King had with Pope Leo X and Holy Roman Emperor Charles V (i.e., Martin Luther, the protestant reformer)!

2.2. Multitasking

Multitasking is the simultaneous execution of two or more processing activities at the same time. Because people see children do this, many have assumed one or both of the following: (1) They actually are multitasking, and/or (2) they are capable of doing this without any loss of efficiency or effectiveness. This belief is often larded with statements that this is different from what previous generations could do, and that there has been a specific evolution of their brains to allow this. First, human beings are not really capable of multitasking, but can, at best, switch quickly from one activity to another (Kirschner, Sweller, & Clark, 2006; Sweller, Kirschner, & Clark, 2007). Actually, we can only multitask that which is automated (i.e., when schemas have been automated), and where thinking does not play a role (e.g., chewing gum, walking, and talking at the same time; though even this sometimes leads to walking into streetlamps or falling off curbs).

What people are really suggesting is that the current generation has, through practice, developed the ability to quickly switch between different tasks or different media. Unfortunately, this does not mean that it is beneficial or positive for them to do this or for learning in this way. It has been broadly shown that such rapid switching behavior, when compared to carrying out tasks serially, leads to poorer learning results in students and poorer performance of tasks (American Psychological Association, 2006). This is primarily due to the fact that switching requires a person to juggle her or his limited cognitive resources to accomplish the different tasks successfully. This juggling leads to greater inefficiency in performing each individual task, namely that more mistakes are made, and it takes significantly longer as compared to sequential work (Ophira, Nass, & Wagner, 2009). According to David Meyer, director of the Brain, Cognition and Action Lab at Michigan State (Wallis, 2006),

> If a teenager is trying to have a conversation on an e-mail chat line while doing algebra, she'll suffer a decrease in efficiency, compared to if she just thought about algebra until she was done. People may think otherwise, but it's a myth. With such complicated tasks [you] will never, ever be able to overcome