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Preferences and Learning Behaviors of Digital Natives

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ABSTRACT
Because students' lives today are saturated with digital media at a time when their brains are still developing, several popular press authors suggest that media use has profoundly affected students' abilities, preferences, and attitudes related to learning. They claim that "digital natives" (often defined as those born after 1980) have a distinctive set of characteristics that includes preference for speed, nonlinear processing, multitasking, and social learning, allegedly developed through immersion in digital technology during childhood and adolescence.

The purpose of this project is to explore claims that the digital "native" generation as learners demonstrate different learning behaviors, by exploring relationships between technology use and productive learning habits. This study will test theoretical assumptions in the literature and popular press, and gather data through survey research to address the possible connection between technology use and learning by asking university students in to report patterns of use across a variety of technologies, as well as their preferences and behaviors when learning about topics that interest them. This data will help us better understand how digital natives themselves see their technology use and approaches to learning, which may in turn provide an empirical basis for both curriculum design that provides students with opportunities for more productive learning behaviors, and academic success. Updated research on this topic can provide better direction for developing the tools and approaches best suited to the delivery of higher education.

Keywords
Digital natives, technology use, learning behavior, education

1 INTRODUCTION

The digital native generation will be the pioneers of technological innovation to address global social, political, environmental and economic issues. Those born after 1980 prioritize education and technology as the means to establish roles of global leadership. Western nations have maintained a traditional approach to classroom learning but have initiated changes to better adapt to the needs of the digital natives. Although many high schools and universities have transitioned from print textbooks to digital eBooks, iPads, and laptops, it is essential to analyze data concerning student technological preferences to maximize their effectiveness in the classroom. Academic innovators and researchers have explained that the lack of data about digital natives has made the improvement of education difficult.

2 LITERATURE REVIEW

Penny Thompson's (2013) study on digital natives and education investigates patterns of technology use in the learning process for those born after 1980. Traditional educators worry that digital natives' preference for speed, nonlinear processing, shared learning and multitasking make them "incapable of deep learning and productive work" (Thompson, 2013:12). Thompson's conclusion indicates that digital natives are proficient in a limited range of technologies as social media is integrated into learning, replacing traditional platforms of digital expression such as blogs. The relationship between technology use and productive learning habits vary depending on the frequency of technology use. Overexposure to technology use may present diminishing returns on productivity, focus and learning behaviors, but educators must accommodate and educate students to control their technology use in a productive manner (Thompson, 2013:23).

3 STUDY AIMS AND METHODOLOGY

The objective of this research is to identify characteristics of the digital native generation to better assist educators and academic administrations. The first section of the survey is titled "Characteristics of Digital Natives" and prompts respondents to state to which degree they agree with a series of statements about their own generation. The second section, titled "Digital Characteristics Scale," asks respondents to select their technology of choice for reading, research or study. The third section, titled "Productive Learning Habits Scale," requires respondents to select how they would act in specific situations when learning and about their

expectations with technology in those situations. The "Technology Use Scale" is the final section of the survey where data is collected regarding the use of all forms of digital products and services, from social media to word processing documents.

This research was originally conducted as a multi-country study. The data presented here are for the U.S. only, where a total of 130 undergraduate students responded.

4 SURVEY RESULTS

Connectivity with Technology

Digital natives within the United States have a preference for connectivity with technology but the degree of connectivity varies. The average score for American respondents concerning technology connectivity was 3.8 on a scale of 1 to 6. When the results for this preference are applied to the attitude and behaviors of students, connectivity with technology has a positive correlation with the student's demand for technology in the classroom. US respondents that preferred digital connectivity behave as if technology prevents distractions when learning about something interesting to them. While the respondents behave as if digital immersion is a way to prevent distractions, American respondents with a preference for constant digital connectivity tend to develop habits that demand activity-based experience.

Multitasking

The US respondents' multitasking behavior is directly related to the technology available. Students with a preference for constant digital immersion have a 46.8% positive correlation with multitasking constantly. Similarly, the respondents have a 53.9% positive correlation with multitasking behaviors and the expectation of technology within the activity-based learning experience. American digital natives seem to multitask only when technology is available for the various activities. Multitasking has been indirectly promoted by applications that allow users to access multiple files and projects simultaneously.

These digital natives also present a 36.7% positive correlation with mixing work and play with the behavior of multitasking. This questions the efficiency and effectiveness of American digital natives' multitasking. This could be calculated by comparing the quality and time of completion of the student's work with the quality and duration of work if the projects were completed individually without any multitasking. Although the survey did not collect quantitative data concerning the work quality and time of completion for digital natives, the "Productive Learning Habits Scale" depicts the habits that digital natives actually exercise in terms of their preferences. Similar to Thompson's conclusion, digital natives may prefer to mix work and play, but this does not mean that digital natives demand constant entertainment (Thompson, 2013:21).

Social Learning

The highest standard deviation (variance) of the "Preferences of Digital Native Scale" was the preference of learning in groups or alone. Those that prefer social learning have a 23% correlation with gathering a large amount of information quickly without thinking about the context of the overall project. In terms of research projects and learning, this correlation suggests that students rely on each other to organize research data into the project's topic. American digital natives that prefer to work alone may have higher tendencies to take the time to reflect on their research to process the data more effectively.

The social learning preference also had the lowest average on the scale of 1 to 6. Most digital natives that preferred constant digital immersion also preferred to collaborate projects. This displays how those born after 1980 have embraced technology as a collaborative and hands-on tool, but there will be conflicting preferences for group projects and working in solitude.

Motivation and Focus

Finding the best way to motivate and focus students will contribute to their success. The data illustrates that students focus their attention on the graphic portion rather than the text, and are becoming more visual learners. When digital natives are reading about an interesting topic on the Internet, they proceed by reading the page fully through before clicking on the multiple hyperlinks provided within the text. When it comes to studying and learning, Digital Natives slightly prefer to study with friends rather than study alone. Teachers can build off this data and allow for more group activity rather than independent work where appropriate. Although most digital natives in the US prefer immediate feedback, there is a pretty even split when it comes to learning and short-term boredom. Students slightly prefer immediate returns for their effort but also understand that learning something requires patience and persistence.

Digital Natives & The Technology Use Scale

The "Technology Use Scale" creates an illustration of what technologies digital natives prefer and how they learning. All of the Digital Natives in the US use a word processor, spreadsheet program, or slideshow presentation at least a few times a year. This shows how Digital Natives and teachers have integrated technology into education and the classroom. The Internet also gives students an advantage when searching for information. Platforms such as Google have become powerful search engines for digital natives. The use of Google allows students to quickly and conveniently answer nearly any question at the tips of their

fingertips. Now, students expect answers quickly and immediately, and three-quarters of these students say they use the Internet once a day to look up answers.

The way students collaborate on assignments such as research papers, presentations, and more is also changing. The vast majority of these students use programs like Google Docs to collaborate on projects at least once a year, read blogs at least a few times a year, and check social media notifications *daily*. Social media is one of the greatest distractions for these digital natives. It can prevent students from paying attention in class, reading books, and even getting a good night's sleep. Teachers must also embrace the use of smartphones and try to integrate them into the learning environment.

5 CONCLUSIONS AND RECOMMENDATIONS

What can teachers and educators do to raise the willingness of digital natives to learn and to push their boundaries?

Implement Technology for Innovation, not for the sake of using technology

Promoting technology advancement as pull factor is encouraged, but the services must be intertwined in most aspects of the curriculum's structure. Education administrators cannot implement technology for the sake of using digital services. Instead, academic institutions must create seamless fusions of technology and curriculum.

Educators should not assume that digital natives are efficient researchers

The digital natives' ability to quickly find information can increase productivity, but universities must educate this generation on the proper methods of conducting research electronically. There is the risk accidentally plagiarizing if these students are not trained to research and cite sources from digital databases.

Balance between activity-based learning and distractions

Digital natives have a threshold for productivity and diminishing returns when using technology as digital immersion can become a distraction in the classroom. Activity-based learning can provide digital natives with hands-on approaches toward grasping a topic while catering toward their digital proficiency. The activities should prompt students to solve cognitively complex tasks in order to further develop their problem-solving skills.

Incorporate Social Media and update frequently

Educators should also consider utilizing social media tools *within* the classroom. By promoting students to use of social media within their curriculum, educators create an effective environment of free thought and a socially conscious generation that is cautious about what they share on social media. This can replace traditional methods of intertwining academics and online activities, such as discussion forums. Teachers have the ability to shape their curriculum to accommodate the needs of digital natives. The process of effectively implementing technology into the learning process must be considered a continuous process.

6 REFERENCES

References are available upon request.