

# USING LEARNING TECHNOLOGIES TO PROMOTE THE SEVEN PRINCIPLES FOR GOOD PRACTICE IN UNDERGRADUATE EDUCATION

Nina Sarkar  
Queensborough Community College, NY  
nsarkar@qcc.cuny.edu

Wendy Ford  
Queensborough Community College, NY  
wford@qcc.cuny.edu

Christina Manzo  
Queensborough Community College, NY  
cmanzo@qcc.cuny.edu

Stephen W Hammel  
Queensborough Community College, NY  
shammel@qcc.cuny.edu

## EXTENDED ABSTRACT

The seven principles of good practice in undergraduate education (Chikering & Gamson, 1987) identified the following seven principles as good practice:

1. Encourages contact between students and faculty
2. Develops reciprocity and cooperation among students
3. Encourages active learning
4. Gives prompt feedback
5. Emphasizes time on task
6. Communicates high expectations
7. Respects diverse talents and ways of learning

The seven principles today are as valid as they were 40 years ago. What has changed are what characterizes today's student body. According to The Center for Educational Statistics, more than 75% of students enrolled in higher education today are digital natives. The term digital natives was popularized as a way of defining someone who has grown up immersed in digital technology (Prensky, 2001). It is claimed that digital natives have certain characteristics that are different from previous generations which have developed because of their intensive exposure to computer games, online videos, use of social media and other popular digital technologies, (Tapscott, 2009). This immersion in technology has a significant influence on their personalities, including their attitudes and approaches to learning. This calls for significant educational reforms because traditional education systems do not cater to the needs and interests of digital natives. The most effective way that both students and instructors can benefit from this paradigm shift is to integrate technology that is appropriate to the cognitive learning patterns of the digital natives into the curriculum.

This study explores how to incorporate cost effective technologies into the curriculum that help faculty to adapt their teaching styles to suit the cognitive learning patterns of the digital natives while still adhering to the seven principles of good practice. The study also explores the impact of using these technologies on academic performance and student satisfaction.

As result of their upbringing and experiences with technology, digital natives have a particular learning style that differs from earlier generation of students, (Bennett, Maton & Kervin, 2008). There are several studies that have reported on the characteristics of the digital natives, and each study provides a slightly different list of essential characteristics, (Prensky, 2001; Tapscott, 2009; Thompson, 2015). However, there is much overlap between these characteristics and they may be generalized as follows:

1. Expect technology infused learning environment
2. Prefer informal learning structure and flexible learning schedule
3. Possess short attention span
4. Expect immediate feedback
5. Prefer active learning
6. Display universal adoption of mobile devices

Outside the classroom digital natives use a variety of social networking and media technologies like TV, Internet, gaming consoles, various mobile devices like phones and tablets, (Cox-Holmes & Lodde, 2006). They also typically have access to some or all of these technologies in their home environment.

This paper identifies a few functional technologies that were used by the authors to encourage contact and interaction between faculty and students, develop cooperation and collaboration among students, provide prompt feedback to students and allow faculty to address different learning styles of different students. The benefits of the tools employed in this study are that they are free, they are independent of any learning management system, they are easily integrated within a course or a curriculum without technical support and they are easy to learn and use both for faculty as well as for students. Using these technologies not only allows the instructor to adapt their teaching styles to suit the learning styles of digital natives but also simultaneously allow faculty to follow the seven principles for good practice. Further, these tools have the potential for supporting student learning in creative and innovative ways, improving students' academic performance and student's satisfaction with the learning process.

The purpose of this study is to incorporate these technologies in different Business courses and explore the impact on student academic performance as well as explore students' satisfaction with the learning process.

There are several educational technologies available that are free and independent of the learning management system of the institution. After experimenting with several of these tools, the authors chose PowToon and Educreation for content creation and delivery of micro-lectures. They are both web-based applications that can be used as an alternative to PowerPoint presentations. They can be used to create engaging content for introducing new material or to reinforce difficult concepts. They allow digital natives to have a technology infused learning environment, and allow them the flexibility to access the content when and wherever they choose. Furthermore, these types of microlectures encourage contact and dialogue between faculty and students and allow faculty to adapt their lectures to different learning styles

The authors also integrated classroom response system like PollEverywhere into their courses. PollEverywhere allows faculty to create small quizzes or questionnaires that students can answer in a classroom and get immediate feedback on their response. PollEverywhere is similar to clickers used in the classroom but have the added advantage of creating open-ended questions as well as displaying graphically the students' response in an embedded PowerPoint slide. It encourages classroom interaction and allows for prompt feedback to the digital natives, while allowing faculty to gauge the class's understanding of the topic in question.

Kahoot is a free game based social learning tool. Using a hand held device or a computer, with Internet access students can join an interactive game in the classroom. The game created by the instructor can be a quiz with a timed response and point system, or it can be a single close-ended question that can lead to open discussion or debate. The questions, created by the instructor, are displayed on a shared screen and answered on the individual devices. Kahoot can be adapted for various learning styles by including pictures and videos. Kahoot allows digital natives to use their handheld devices and creates a competitive spirit in the learning process. By displaying the questions and answers on a shared screen it gives them the instant feedback that they desire. Depending on how the game is set up, it can also be used to encourage reciprocity and collaboration among students.

Using technologies such as the ones mentioned above, it is possible for faculty to adapt teaching styles to the needs of the digital natives and simultaneously follow the seven principles of good practice. The authors incorporated the above mentioned technologies into some of their courses in Fall 2017, with the expectation that these technologies would help to improve the students' academic performance. In order to conduct an empirical study, the authors have designed a quasi-experimental study. Some of the classes taught by the authors in Fall 2017 have been designated as Traditional Classes (TC) where no technology is being used other than Blackboard, the learning management system used by the institution. These classes will be used as the control group. Different sections of the same classes that have incorporated the technologies will be designated as Experiment Classes (EC). Both TC and EC will be taught using the relevant textbook for that particular course. Both will be given the same reading assignments, same outside resources and the same set of homework. Assignments will be the same in both types of class – each with the same number, type and difficulty level of questions. So the difference between TC and EC is the use of technology to enhance the learning process. In both types of classes students will be graded on the same combination of tests and portfolio of student work. Data on student performance will be collected at the end of the semester. In order to compare student academic performance in TC vs. EC, the authors will use a two-sample t-test to assess the possibility of a difference in the means of TC and EC.

The authors also want to explore if students were satisfied with the learning process. To that end the faculty has created a satisfaction survey that will be administered to the students at the end of the semester.

Data analysis both for academic performance and for student satisfaction will be completed by Jan 2018, and ready for presentation in March.

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