Chapter 9
The Potential for Student Engagement Using Clickers in a Large Introductory Class

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ABSTRACT

This pilot project employed personal response systems, or clicker technology, in an effort to address student inattention and the distractions created by electronics in a large, first-year introductory communication class. The objectives of the project were to increase student engagement through a more hands-on, active and collaborative learning environment and to better gauge student understanding of important concepts throughout the lecture. This case discusses the challenges of student engagement, in particular with today's millennial students, examines the role of technology generally in engaging students and the personal response systems specifically, describes the pilot project and presents a series of exercises that may be used to most effectively take advantage of this technology in the classroom.

INTRODUCTION

Engaging students has become more of a challenge than ever. Students (and faculty members) perceive themselves as part of an increasingly fast-paced world where multi-tasking and information overload are the norm. Today's students, called millennials by Strauss and Howe (2000, 2003), noted authorities on generational identities and behaviors, were born in 1982 or later and are the first university cohort to have grown up with the internet, the cell phone, and a host of instant-communication and social networking technologies. As a generation, millennials are constantly wired and connected to their friends, their media and the internet through their cell phones, MP3 players, and laptops. Jones (2002), in his study of the impact of internet use of college students' daily lives and academic and social routines, found that 72% of all students check their email daily, and 26% of college students use instant messaging on an average day. A 2008 survey reported that 87% of American adults in the 18-29 age range participated in online activities (Pew Internet Project, 2008). These data show that university

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and college classrooms are made up of participants who are likely in a constant state of distraction -- playing on laptops, watching videos on Youtube, communicating with friends on various hand-held technologies and checking their Facebook pages (Rice & Bunz, 2006). These distracting behaviors interfere with both the student's own ability to attend to and understand the course material as well as that of his or her peers sitting nearby, and is likely to have a negative impact on student engagement.

What is Student Engagement?

Student engagement is understood to mean "the time and energy students devote to educationally sound activities inside and outside of the classroom, and the policies and practices that institutions use to induce students to take part in these activities" (*Kuh, 2003, p. 25)*. It is clear from this definition that if they want their students to invest time in their classes, instructors must find ways to maintain the interest and attention of students, and that students need to be involved in meaningful, participatory classroom practices in what Coates (2005) calls the "joint proposition" of learning. Research shows that student engagement is among the better predictors of learning and personal development (*Carini, Kuh, & Klein, 2006*) and thus is critical to the academic achievement and retention of post-secondary students (Kuh, 2003).

The Role of Technology in Student Engagement

While technology may be blamed for much of the distraction in university and college classrooms, it can also offer solutions to this problem by enhancing student engagement. Millenials are adept at learning, are used to handheld devices and are eager early adopters of new technologies, As Prensky (2001) describes them, millenials are "digital natives in a land of digital immigrants" so it may well be that the most effective approach to engaging these students is to meet them where they are.

As Chickering and Ehrmann (1996) suggest, technology can be used as a lever to advance the seven principles of effective undergraduate education developed by Chickering and Gamson (1987). In sum, Chickering and Gamson argue that good practice encourages contact between students and faculty, develops reciprocity and cooperation among students, encourages active learning, gives prompt feedback, emphasizes time on task, communicates high expectations, and respects diverse talents and ways of learning.

One technology that offers hope is the personal or classroom response system (PRS/CRS) commonly referred to as the *clicker*. This technology is being used in schools internationally in an attempt to bring students' focus back to the lecture. In classrooms equipped with a receiver and the appropriate software, students each have a hand-held remote control, purchased along with their textbook for about $20. Students "click" in their responses to multiple choice questions posed by the lecturer that are projected on the screen from within a slide presentation. When all responses are received, the results are projected onto the screen for the entire class to see (either anonymously or with respondents identified). Individual student and collective class data are saved for each session, allowing for responses to be recorded, analyzed and graphed. As Rice and Bunz (2006) argue, clickers create the opportunity for collaborative learning, which they define as a group- or team-based approach to and which allows for "the fundamental roles of direct interaction with information, and of social interaction in learning" (p. 2). These authors point out that the clicker technology at once fosters participation by requiring every student to provide a response and, depending on how it is used, can encourage collaboration if students discuss questions before posting their answers. Participation and collaboration, according to Kuh (2003), are both critical aspects of student engagement and, ultimately, learning.

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