

Chapter 8

Personalized Learning and Online Instruction

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ABSTRACT

This development of digital inclusion with personalized learning has had an impact on how courses are designed and delivered. To that end, a behavioral approach that combines digital with personalized learning is CAPSI (computer-aided personalized system of instruction). In CAPSI, students decide when and where to study course material and where and when to take a test on their learning. The changes occurring in higher education also need to incorporate the development of critical thinking skills. CAPSI is highly adaptable to developing critical or higher-level thinking based on Bloom's taxonomy; CAPSI's emphasis on written answers, providing feedback, and writing appeals leads to higher order thinking. To assess student satisfaction, questionnaires given at the end of a course show that many students find CAPSI to be beneficial to their learning. Also, due to its flexible design, CAPSI is highly modifiable and can be used in all courses in a variety of locations and with students at different educational levels.

INTRODUCTION

The current demographic on university campuses includes students who are trying to maintain a full course load yet for personal reasons have limited opportunities to be on campus and attend lectures (Ausburn, 2004; Chickering & Kytle, 1999; Concannon, Flynn, & Campbell, 2005). The challenge for students in this situation is that the design for promoting learning and independent thinking in higher education has remained relatively unchanged since the Middle Ages when universities first began: an

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instructor in a classroom lecturing to a group – sometimes a very large group – of students (Brothen & Wambach, 1998; Levy, 2004).

Digital or online learning offers a promising alternative for students by reducing the need to attend hours of in-class lectures each week while providing the opportunity to be part of a learning community in a face-to-face classroom (Garrison & Kanuka, 2004). This development of digital inclusion – i.e., providing access to digital technology to individuals at every level in all walks of life – has had an impact on how course content is delivered, leading in higher education to a re-thinking of the traditional learning model that includes integrating digital technology with personalized learning (Dzubian, Hartman, & Moskal, 2004). The term “personalized learning” can refer to several things. It can refer to teaching that is specifically tailored to the immediate learning needs of an individual, as in tutoring. Alternatively, it can refer to a system that contains the flexibility to adjust to the learning needs of the individual student, which is the approach emphasized in this chapter. This may seem like a subtle distinction, but it is an extremely important one.

Digital technology can enhance personalized learning. A step toward a system that promotes personalized learning occurs when technology-based online learning activities are combined with in-class instruction. This approach maintains flexibility and convenience in a manner that most effectively improves student learning (Akkoyunlu & Yılmaz-Soylu, 2008; Ben-Jacob, 1999; Dzubian, et. al, 2004; Garrison & Kanuka, 2007; Lim, Morris, & Kupritz 2006; Osguthorpe & Graham, 2003; Welker & Berardino, 2006). This combination of technology with in-class instruction, which is known as blended learning (Carr-Chellman & Duchastel, 2001; Concannon et al., 2005; Merisotis, 2001; Svenningsen & Pear, 2011), is a method or a group of methods that combines facilitating student learning through direct instruction with opportunities for student self-paced learning (Akkoyunlu & Yılmaz-Soylu, 2008; Alonso et al., 2005; Osguthorpe & Graham, 2003). Essentially, it is a natural extension of traditional classroom learning that offers increased flexibility for both students and instructors (Matheos, Daniel, & McCalla, 2006).

Despite the positive effects of involving technology in the educational process, a major challenge associated with incorporating new ideas or changes in classroom design is that, on a practical level, monitoring and analyzing trends or practices in education, especially those prompted by personalized learning and the rapid evolution of technology, is problematic (Basham, Hall, Carter, & Stahl, 2016). For example, personalizing learning deemphasizes measuring performance on the traditional normal curve. Instead, its focus is on the knowledge development of individual students progressing at their own pace. This can pose a pedagogical threat to instructors who are invested in traditional approaches to education.

A specific challenge to personalized learning is that post-secondary education increasingly needs to adapt to larger class sizes (Ontario Confederation of University Faculty Associations, 2014). Increased class size can have a negative effect on learning. Monks and Schmidt (2010) studied the effects of a policy change relating to class size at a private university in the United States. Class sections changed from three smaller sections to two larger sections, with roughly an equal total number of students. This change was in place for six years, and was followed by a change back to three smaller sections. Assessing student outcomes over these changes, Monks and Schmidt found that class size “had a statistically significant negative impact on the amount of critical and analytical thinking” (p.13). A possible reason for this finding is that with a larger class size, the instructor provides less attention to individual students, thus depersonalizing the learning experience. In addition to the decreased instructor attention there is also less interaction between instructors and students, and between students. As a result, the chance to assess student learning is often limited to true/false and multiple-choice tests with decreased opportunities for the students to become critical thinkers.

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