Chapter 1.10

Instructional Design Methods Integrating Instructional Technology

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ABSTRACT

Effective teaching begins with effective planning of instruction. Planned instruction with technology integrated appeals to students and accommodates students' needs. Students expect technology to be utilized to support the learning process because of their acquaintance with a variety of technologies at a very early age. Educators must be aware of the needs and expectations of students and then design courses that integrate technology based on these identified needs and expectations. A critical element required to integrate technology into the learning environment successfully is the instructional design process. The instructional design process provides a framework for systematically planning, developing, and adapting instruction based on learner needs and content requirements. With the instructional design process, educators evaluate student needs, plan the lesson objectives, design the instructional content, and create assessments. Evaluation and revision of each of the instructional components is continually modified to meet the changing needs of the learners and the advancement of technology.

INTRODUCTION

Educators today integrate technology into the classroom to create various instructional opportunities for students. There are four primary reasons why educators should integrate technology into the instructional process to create new and varied instructional opportunities to support student learning. First, educators need to develop

and design instruction that will build student understanding. The term "understanding" is best defined through the following three principles:

1. Understanding is a function of learning facts and core principles of a topic
2. Understanding is the product of actively relating new knowledge with prior knowledge and experiences
3. Understanding is a consequence of using and managing intellectual abilities well. (Sherman & Kurshan, 2005)

Developing and supporting student understanding includes keeping the student actively engaged in the instruction while at the same time appealing to students' various learning styles.

A second reason for educators to integrate technology into the instructional process is because there is a need to plan instruction that will motivate students to learn. According to Sherman et al. (2005), "the lack of interest is generally the number one reason that students give for not learning to mastery level" (p. 11). Technology-based instruction can stimulate students' interests to explore, discuss, and compare their knowledge with others.

It is important to note that instructional technology, in and of itself, will not directly improve student understanding. In fact, a primary reason that instructors use technology in their instruction is to increase motivation to learn. Motivation is indeed one of the necessary components of learning. According to the self-efficacy theory of motivation (Bandura, 1978; Salomon, 1981), a direct relationship exists between instructional technology (how and when it is used in the teaching process) and student learning because of the motivation factor. Researchers believe a student's attitudes, beliefs, and values influence their motivation to gain understanding of a topic or discipline (Clark & Sugrue, p. 350). At the same time, the level of knowledge or skills needed to successfully utilize the technology is also important to the learning process. According to Clark and Sugrue, if students view instructional technology to be within a moderate range of difficulty to use, then they will invest time and effort to learn from this instructional medium. If the students find the instructional medium is too challenging, their motivation to participate and learn is reduced (p. 359).

Third, students expect the use of technology to be a part of the learning process. Students are using technology very early in their lives for non-academic activity; therefore, they are more likely to use technology in all aspects of their lives especially in their educational careers. "Students believe computers are helpful and they will use them more in the workplace," (Dooling, 2002, p. 22). In addition, Ellis reports that students have very high expectations of technology-supported learning (2004). Educators aware of these expectations will focus on course designs that integrate technology. Therefore, planning instruction with the student's expectations and needs in mind will help the student to be successful in achieving the instructional objectives.

The fourth reason for integrating instructional technology into the classroom is because educators are searching for new and more effective ways of communicating with students. Students should be provided opportunities to communicate with instructor, with peers and with the content. Understanding of new concepts in the course content is developed through various types of interactions and media.

It is also important to note that integrating technology into instruction is not a "quick fix" that will automatically improve student learning. In fact, the integration of technology into a poorly planned lesson will not transform the instruction into a well-designed or effective instructional opportunity for students. In fact, when technology is integrated into a poorly designed lesson, the learner will many times feel frustrated and

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