Chapter 2

A Reflection on the History of Educational Technology and Evolving Pedagogies

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ABSTRACT

Educational technology has developed from five basic approaches toward technology use: (1) the technical perspective, (2) the objectivist perspective, (3) the constructivist perspective, (4) the collaborative perspective, and (5) the social-ethical perspective. Each perspective has distinctly impacted educational technology. Every one of these threads has roots in a related field and no single thread can form the foundation for educational technology. The unique element of online instruction is the potential for a truly non-sequential model of learning. This is the only element that can be better designed online; all the other characteristics that have been reviewed can be implemented by other methods, or as adaptations of other methods used in other formats. For this reason, it is recommended that future efforts at designing pedagogy for online learning make non-sequential instructional design central to the theoretical model. This is an issue that technology leaders must consider when planning technology integration.

INTRODUCTION

A primary purpose of education is to develop an educated citizenry that fully participates in society. What has changed over the centuries is how this preparation is achieved. Although a relatively new field, educational technology has grappled with the core issues of what it means to be an educated person and how that goal is to be achieved from its very inception. In a real sense, the evolution of computers and media in education forces the re-examination of what is worth knowing, and by extension, how to share that knowledge with others. The history of educational technology is a record of how people relate to content, how instructional programs define their purpose, and how that content is valued.

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The heart of any educational system is the determination of what basic knowledge is needed to function in a given societal role. Computers were designed to support these goals through the collection and the organization of information. In the simplest terms, the computer frees individuals from minutia and allows for an examination of larger concepts. This function inspired multiple threads of inquiry that converged to create the field of educational technology.

Defining the Field

As educational technology evolved from an emphasis on media support for traditional education to collaborative learning environments, multiple terms developed to describe the study of the interaction between technology and learning (Gentry, 1987; Reiser, 2001). Each advancement in technology introduced new perspectives and new terminology resulting in loosely defined working definitions within the profession. Prior to the development of personal computers, the terms educational media and educational technology were in common use. As computer technology became more widely available, instructional technology (IT) became the preferred term (Seels & Richey, 1994). Several organizations provided definitions that emphasized the importance of the process of instruction and how that process blends with technology to create new learning environments, yet no clear and uniform definition of this concept emerged (Reiser, 2001). The profession divided into separate professional groups in the 1990’s; two notable groups being the Association for Educational Communications and Technology (AECT) and the International Society for Technology in Education (ISTE). Each group had a different mission: AECT viewed instructional technology as part of instructional system design while ISTE emphasized the integration of technology into the existing school curriculum (Association for Educational Communications and Technology, 2001; International Society for Technology in Education, 2009).

This resulted in multiple attempts to define the field and in a search for terminology that clearly communicated the purpose of the field. In an attempt to clarify public perceptions of the profession, AECT recommended that the field return to the term educational technology (Januszewski & Molenda, 2008). Educational technology was defined by the AECT board as “the study and ethical practice of facilitating learning and improving performance by creating, using and managing appropriate technological processes and resources” (Januszewski & Molenda, 2008, p.1). Hlynka and Jacobsen (2010) described the AECT definition as a good starting point in defining technology in terms of human purpose.

This definition was not universally accepted as it was criticized for placing less emphasis on instructional design (Lowenthal & Wilson, 2010; Richey, 2008). Reiser (2001) proposed instructional design and technology (IDT) as a more appropriate term to highlight the interconnected relationship between technology and instructional design. Hlynka and Jacobsen (2010) noted that new terminology is continuously developing and offered information communication technology (ICT) as example of an increasingly popular term for the field. It is reasonable to assume that as the technology develops, the definitions of the field will continue to evolve as the relationship between technology and learning continues to change.

Like many other technological innovations, the development of computer technology empowered some groups and diminished the influence of other groups (Postman, 1990). In the early years of computer-assisted instruction, software developers greatly influenced the evolution of the field because academic research lagged behind industry-based advancements. Unlike other forms of innovation, computers were an anticipated advancement that had been explored in fictional works long before they were a reality. Being highly anticipated, the templates of how this technology