Chapter 1.3
The Pillars of Instructional Technology

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ABSTRACT

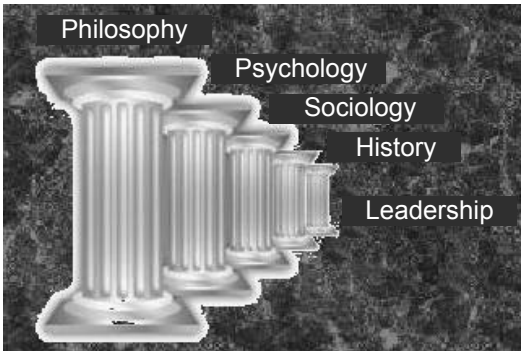
This chapter provides an overview of the foundational components of teaching and learning with technology. The pillars of instructional technology include the philosophy of technology (What are we teaching about IT?), the psychology of technology (How are we teaching with IT?), the sociology of technology (Who are we teaching with IT?), the history of technology, and technology leadership. Each "pillar" offers a venue for creating a program of instructional technology at the higher education level. In addition, a new model for implementing an instructional technology program is introduced: the K-A-RPE model of instructional technology provides the infrastructure for any institution of higher learning to infuse technology into its undergraduate, graduate, and post-graduate teacher curriculum.

INTRODUCTION

Philosophy, psychology, sociology, history, and leadership are the pillars of teaching and learning—whether in the classroom or by way of distance-based tools. As such, instructional technology is supported by the following five foundations:

1. **Philosophy,** that answers the question "*What* are we teaching about instructional technology?"
2. **Psychology,** that addresses "*How* do we teach with instructional technology?"
3. **Sociology,** involving the "*Who* are we teaching with instructional technology?"
4. **History,** encompassing the "*When* (in the history of education) are we teaching with technology?"
5. And, **Leadership,** focusing on "*Whom* (sic) is responsible for using technology to teach?"

Figure 1.



THE PHILOSOPHY OF INSTRUCTIONAL TECHNOLOGY

What are We Teaching About Instructional Technology?

Technology has played a significant role in education and in most successful educational reform movements of the past four decades: charter schools and home schooling; standards, testing, and accountability; best practice; outcome-based learning; professional teacher qualifications, and so forth. It remains a catalyst for changing what we teach—the essence of a personal philosophy of technology.

The International Society for Technology in Education (ISTE) provides technology standards for students and divides them into six broad categories. Standards are meant to be integrated into K-12 curriculum at the introduction, reinforcement, or mastery levels. At the state level, 49 of the 51 states have adopted, adapted, aligned with, or otherwise referenced at least one set of standards in their state technology plans, certification, licensure, curriculum plans, assessment plans, or other official state documents (ISTE, 2004).

With respect to the philosophy of instructional technology, teachers have these standards and profiles as guidelines for planning technology-based activities in which lesson-based learning outcomes are focused. Table 1 displays the current technology standards for students. For technologists, NETS*S represents much of "What are we teaching about technology?"

Technology fosters better communication, removing barriers that, in the past, have stymied learning. Yet, technology is not a magic potion for resolving all the woes of education. Technology, in and of itself, does not create better teachers, learners, or administrators. However, when technology is used side by side with other school improvement efforts, it can be a very effective vehicle for progress.

Learning is a process that happens when teacher and student share a common experience. When students gather and process information (and as a result, form new knowledge, attitudes, or change their behavior), learning occurs. One popular philosophy of teaching and learning offers that "the teacher does not deliver education, the student constructs it." Technology plays a significant role in changing the instructional environment by promoting the role of the teacher as a guide in educational discovery, serving as a resource to the student-as-information-gatherer. In other words, the effective teacher serves "not as the sage-on-the-stage but rather as the guide-by-the-side."