A Definition of Instructional Technology

Instructional Technology is defined by Seels and Richey (1994) as "the theory and practice of design, development, utilization, management, and evaluation of processes and resources for learning" (p. 1). The five domains within the definition, which are shown in Figure 1, include design, development, utilization, management, and evaluation. They are the foundations for practice in the field. While each domain has its own knowledge base, the domains "contribute" to each other and have a "synergistic" relationship (Seels & Richey, 1994, p. 25).

The domains were created as a classification structure that provides the field with a "conceptual framework" (Smith & Ragan, 1999, p. 23). Smith and Ragan (1999) emphasize that this organizes the interrelation between theory and practice. In order to be an effective instructional technologist, one must master the theories in each domain because in practice he/she may work throughout multiple domains within one project. In my experience in the field, I have found that the most effective instructional technologist may not only work within multiple domains, but must have a working knowledge of all domains and how they affect one another. For example, the domain of development relies on design while evaluation relies on design, development, and utilization for gathering data and management is involved in planning for and implementing all aspects of a single project across all domains. In other words, I believe that no one domain can exist without the others.

Instructional technology is a term that is often used synonymously with other terms such as educational technology, instructional design, and instructional media as well as the growing field of human performance technology when in fact these are all separate parts of the same overall framework. To identify instructional technology as an entity independent of these assumptions, I find it helpful to compare and contrast the terms. By comparing and contrasting the different terms, one can conceptualize not only what instructional technology is in theory and practice, but also how it is interwoven with similar fields of practice.

Instructional Technology vs. Educational Technology

Educational Technology is defined as "the study and ethical practice of facilitating learning and improving performance by creating, using, and managing, appropriate technological processes and resources" (AECT, 2004, p. 3).

Some members of the educational technology and/or instructional technology fields argue that the two terms can be used interchangeably or are simply terms resulting from geographic preference. However, my analysis of the differences between educational technology and instructional technology are found at the roots of their definitions. Education is defined as the "activities and resources that support learning" (AECT, 2004, p.1). This refers to all activities and

resources both planned and unplanned that contribute to a students' learning regardless of whether the learning is intentional or unintentional. Teaching, which is defined as "learning experiences facilitated by a human being", falls within the field of educational but does not encompass all educational experiences because learners are interacting with multiple stimuli (Smith & Ragan, 1999, p. 3).

On the other hand, instruction refers to "activities structured by someone other than the learner and oriented toward specific ends" (AECT, 2004, p.1). Instruction is a part of education as a whole but instruction, unlike education, is carefully mapped out in every detail. Based on my experience as an educator, I would describe education as a process that allows the flow of the teaching to change as questions and attitudes change and knowledge is changed thus creating a more informal environment at times while some educational activities occur in a more formal environment. While educational activities may begin with one focus in mind, the activities may lead students to new areas of knowledge that were not part of the original plan.

In contrast, instructional activities are intentional and directly tied to a specific end result. Training, defined as "instructional experiences that are focused upon individuals acquiring very specific skills, falls completely under instruction due to its very narrow scope (Smith & Ragan, 1994, p. 3). The broad nature of the definition of education, as shown in Figure 2, encompasses the definition of instruction by its very nature because education includes the instruction of learners during the educational process.

As a former teacher, I firmly believe that education is clearly defined differently from instruction because, while I was concerned with providing specific knowledge and skills through instruction, my overall goal was to create well-rounded members of society through both instructional and non-instructional interactions.

Therefore, I believe that educational technology, although a separate field of theory and practice would overlap the field of instructional technology because the use of technology processes and resources includes the design, development, utilization, management, and evaluation of the resources.

Instructional Technology vs. Instructional Design

Instructional design is another term often confused with instructional technology. Smith and Ragan (1999) define instructional design as "a systematic and reflective process of translating principles of learning and instruction into plans for instructional materials, activities, information resources, and evaluation" (p.2).

As stated in the definition of instructional technology, "the theory and practice of design" are one of the domains of the instructional technology field. The design domain of instructional technology encompasses the definition of instructional

design through Instructional Systems Design (ISD), message design, instructional strategies, and learner characteristics as shown in Figure 1. Design refers to the planning of the instruction that will be developed, utilized, managed, and evaluated throughout the process. I also think design is interrelated within all domains of instructional technology because each domain is based on instructional design and requires some level of planning and design. Therefore, as shown in Figure 3, instructional design falls within instructional technology rather than being an identical term.

Instructional Technology vs. Instructional Media

Reiser (2001) defines instructional media as the "physical means, other than the teacher, chalkboard, and textbook, via which instruction is presented to learners" (p. 55). Instructional media are often defined during the design phase of an instructional design project. Based on the design decisions, instructional media decisions are made within the development and utilization domains of instructional technology. Media are chosen and/or developed within the development stage of instructional technology and the medium for delivery and use are key in the utilization stage (Figure 1). I believe the technologies used in the development of materials and the media developed based on these technologies as well as the media through which the instruction will be utilized are all necessary in the practice of instructional technology.

In Figure 3, instructional media, like instructional design, is shown as one aspect of the instructional technology field as a whole rather than a term that can be used interchangeably with instructional technology.

Instructional Technology vs. Human Performance Improvement Technology

Human Performance Improvement Technology (HPT) is defined as "the study and ethical practice of improving productivity in organizations by designing and developing effective interventions that are results-oriented, comprehensive, and systemic" (Pershing, 2006, p. 6). While some performance problems may require instruction as part of the solution, I have found through my experience that there are times when a needs assessment confirms that instruction is not an appropriate solution.

Improvements within the organizational systems, management systems, physical and technical systems, or human and social systems may be needed within the organizations that do not require instruction (Pershing, 2006, p.19). Performance technology incorporates non-instructional solutions in addition to instructional solutions to solve problems within these systems. Furthermore, my experience has been that there are sometimes problems unrelated to either instructional

technology or human performance technology such as funding issues may exist and must be solved by the oversight organization before any other solutions may be considered.

While the terms themselves may not be confused, the processes may, at times, be assumed to be the same. Instructional technology always involves an instructional solution with supplemental materials if required. However, performance technology may not involve an instructional solution. Therefore, performance technology may serve to "partially subsume(s) educational and instructional technology", as shown in Figure 4, but "it does not replace educational or instructional technology" (AECT, 2004, p.17).

Conclusions

Instructional Technology is a field with far-reaching influence and a wide knowledge base. According to Seels & Richey (1994), the knowledge base for Instructional Technology is derived from multiple fields of study and practice (p.68). Most importantly Instructional Technology is influenced by:
- Psychology
- Engineering
- Communication
- Computer Science
- Business
- Education

This diverse knowledge base has given the field of Instructional Technology a extensive reach in application and allows the field to ever adapt to new needs within the instructional community. According to Seels and Richey (1994) the field although first recognized in military settings during World War II was first successfully practiced in schools, then military settings, the business sector, and even more recently healthcare fields because of its adaptability. The establishment of the domains of the field as well as the 1994 definition of the field allowed instructional technology to become a "field and profession" rather than simply a "movement" (Seels& Richey, 1994, p.21).