

Domain of Utilization

Utilization is sometimes considered to be the oldest domain within instructional technology. Seels and Richey (1994) claim that utilization has the “longest heritage of any of the domains...in that the regular use of audiovisual materials predates the widespread concern for the systematic design and production of instructional media” (p. 42). Beginning with the visual education movement, instructional media has been used in the classroom with or without careful design and development processes. In fact as early as 1932, multiple school systems included items such as projectors, stereopticons, film rentals, and lantern slides in their budgets (Seels & Richey, 1994, p. 42). Primitive technologies, such as the lantern slides shown in Figure 9 were the precursor to many of our instructional media options available today such as video, DVD, and PowerPoint presentations.

The importance of utilization grew during the mid-20th century as instructional media options expanded. In the 1960s, most schools and colleges had instructional media centers and curriculum packages began to incorporate instructional media into their offerings (Seels & Richey, 1994).

Seels and Richey (1994) define utilization as “the act of using processes and resource for learning” (p. 46). In the overall process of learning, effective utilization of materials is necessary to meet the instructional goals. I agree that if materials are not used, learning cannot occur. Study of utilization allows the designer and developers to “address the interface between the learner and the instructional materials or system” (p. 46) based on knowledge of learner characteristics, learner needs, performance context, and instructional context gathered during front end analysis. Information concerning resources is also necessary when developing a plan for utilization because the availability of the resources will affect the ability to utilize instructional media.

Within the domain of utilization, Seels and Richey (1994) have identified four sub-domains meant to aid instructional designers facilitate the appropriate use of materials toward the instructional goals (p. 43). These four sub-domains are:

- Media Utilization
- Diffusion of Innovations
- Implementation and Institutionalization
- Policies and Regulations

Media Utilization

Seels and Richey (1994) define media utilization as the “systematic use of resources for learning” (p. 46). This involves not only decision making but also consideration of any needs the learners may have including learner with disabilities or other special needs. I believe media utilization creates an overlap

between the field of utilization and design. Seels and Richey emphasize that the selection of media for learning can be identified as a design task when the media is selected by someone who is part of a systematic design process. However, it falls under the domain of utilization when the decision is based on content or media characteristics.

Diffusion of Innovation

Diffusion of Innovation is the “process of communicating through planned strategies for the purpose of gaining adoption” (Seels & Richey, 1994, p. 46). This process exists to facilitate change in environments of all types including the workplace, instructional settings, and even on the personal level by facilitating product acceptance. Everett Rogers (1995) is considered the authority and developer of the “theoretical framework” and “model of diffusion” that is currently accepted by instructional technology scholars (p. xv). His book *Diffusion of Innovations*, published in 1962 brought many early theories about the diffusion of innovation together.

According to Rogers (1995), the diffusion of Innovation has four distinct elements that contribute to the adoption of change in an environment. They are:

- Innovation
- Communication Channels
- Time
- Social System

Innovation

Rogers (1995) defines innovation as “an idea, practice, or object that is perceived as new by an individual or other unit of adoption” (p.11). An innovation may be something that is literally, new, or something simply new to the person or community. According to Rogers (1995), innovations have five characteristics and can influence adoption. These characteristics are relative advantage, compatibility, complexity, trialability, and observability (pp. 15-16).

Relative advantage is “the degree to which an innovation is perceived as better than the idea it supersedes” (Rogers, 1995, p.15). If the innovation is perceived to be better, more efficient, more prestigious, more economical, or more convenient then the relative advantage of the innovation will be higher and have a more rapid rate of adoption.

Compatibility is “the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters” (Rogers, 1995, p. 15). An innovation that is compatible with systems or programs already in place then the chance that it will be adopted is increased.

On the other hand, low complexity is more beneficial to adoption. Rogers (1995) defines complexity as the “the degree to which an innovation is perceived as difficult to understand and use” (p. 15). Innovations that are easier to understand and use will result in a higher rate of adoption.

Trialability is defined by Rogers (1995) as “the degree to which an innovation may be experimented with on a limited basis” (p. 15). By allowing potential adopters to experiment with the innovation they will increase the chances of adoption. Adopters will be more likely to choose “new ideas that can be tried on the installment plan...than innovations that are not divisible” (Rogers, 1995, p.15).

Finally, observability which is defined by Rogers (1995) as “the degree to which the results of an innovation are visible to others” (p.16). The more observable the innovation the more likely adopters will be to adopt because observation “stimulates peer discussion of a new idea” (Rogers, 1995, p.16).

In my experience with technology change projects, the more consideration that is given to these five characteristics of innovations during the design and development phases, the smoother the change will be and the more likely the innovation will be viewed in a positive light by the adopting organization and its members.

Communication Channels

Rogers (1995) defines communication channels as “the means by which messages get from one individual to another” (p.17). Two types of communication channels exist:

- Mass media channels
- Interpersonal channels

Rogers (1995) explains that mass media channels represent messages that travel through a mass medium such as radio, television, the Internet, or print media. On the other hand interpersonal channels “involve a face-to-face exchange between two or more individuals” (Rogers, 1995, p. 17). Rogers (1995) emphasizes the importance of interpersonal communication because the adopters feel a sense of trust for their peers over mass media, interpersonal channels are often more effective in positively influencing adoption of innovations.

I agree that interpersonal channels are more effective because adopters not only trust their peers more but they also feel that their peer’s knowledge of the innovation is more applicable to their specific situation because of the familiarity. However, I believe that a combination of both mass media channels and interpersonal channels are ideal in influencing adopters because the status and large scale influence of mass media combined with the trust and personal

relationships of peers will reach a wider audience and address multiple levels of concern.

Time

According to Rogers (1995), time influences diffusion of innovation in three ways:

- Innovation Decision Process
- Adopter Categories
- Rate of Adoption

Innovation Decision Process

The innovation decision process has five steps according to Rogers (1995). They are knowledge, persuasion, decision, implementation, and confirmation. When a new innovation is being considered for adoption the decision makers must first learn about the innovation, develop some attitude or preferences concerning the innovation, decide what to do regarding the innovation, implement the innovation, and in some way confirm that the decision was correct or reinvent the innovation to make it correct.

Adopter Categories

According to Rogers (1995), adopter categories are “the classifications of members of a social system on the basis of innovativeness (p. 22). The more innovative a person or group is within the organization the earlier they will fall on the adopter categories continuum shown in Figure 11.

The characteristics of each adopter category are detailed in Table 2.

Rate of Adoption

The rate of adoption is “the relative speed with which an innovation is adopted by members of a social system” (Rogers, 1995, p.23). In practice, most innovations rate of adoption can be charted using an s-shaped curve as shown in figure 12.

Social Systems

According to Rogers (1995), social systems are defined as “a set of interrelated units that are engaged in joint problem solving to accomplish a common goal” (p. 24). Social systems research includes social structure, system norms, opinion leaders and change agents, types of innovation decisions, and the consequences of decisions.

Social structures make the systems more stable and can help decrease uncertainty with the introduction of an innovation (Roger, 1995, p. 24). Formal structures involve a hierarchy while more informal structures use a

communication structure involving cliques of people who spread information through interpersonal communication. Both types of structures can “facilitate or impede the diffusion of innovations in the system” (Rogers, 1995, p.25). I think the social structure of an organization is often the most important factor in the initial stages of adoption because these structures influence how an innovation is introduced and how adopters will communicate about it both as a group and as individuals.

System norms are “established behavior patterns for the members of a social system” (Rogers, 1995, p. 27). They set boundaries whether intentional or unintentional about types and ranges of innovations that may or may not be accepted by the group. Innovations that stray too far from norms may not be accepted.

Rogers (1995) defines opinion leadership as “the degree to which an individual is able to influence other individual’s attitudes or overt behavior informally in a desired way with relative frequency” (p.27). These opinion leaders are considered trustworthy and reliable as sources of information within the system. They can influence the population for or against the innovation and often follow the system norms. Change agents, on the other hand, are individuals “who influences clients’ innovation decisions in a direction deemed desirable by a change agency” (Rogers, 1995, p.28). These change agents operate from outside the system and may not always be as effective in influencing a system as the internal opinion leaders.

Having acted in both an opinion leader and change agent role on different projects in the past, I agree that opinion leaders may have a greater influence in many situations because of their internal influence. However, in many scenarios, I feel the change agent’s role is more beneficial to the organization because they can provide a more objective view of the innovation in relation to the organization and the organization’s needs.

Rogers (1995) describes three types of innovation decisions that can be made by individuals within the system or by the system as a whole. Optional innovation decisions are made by individuals within a system regardless of what their peers have chosen to do. Alternatively, collective innovation decisions are the choice to adopt or reject innovations as a group decision among members of a system. Finally, authority innovation decisions are decisions made by those members of the systems that hold some sort of authoritative position within the system.

According to Rogers (1995), once a decision has been made consequences of the innovation decisions will occur that will affect the individual, total system, or both. These may be desirable vs. undesirable consequences, direct or indirect consequences, or anticipated and unanticipated consequences.

Implementation and Institutionalization

Seels and Richey (1994) define implementation as “using instructional materials or strategies in real (not simulated) settings” (p.47). Implementation can occur at both the macro- and micro-level of a system or organization. The purpose of implementation is “to ensure proper use by individuals in an organization” (Seels & Richey, 1994, p. 47). I agree with Seels and Richey that if the program or innovation has not been implemented then it is impossible to evaluate the effects, therefore, utilization is vital to the evaluation domain as well.

Institutionalization is similar to implementation in that the innovation is used by the organization. However, institutionalization is “the continuing, routine use of the instructional innovation in the structure and culture of an organization” (Seels & Richey, 1994, p. 47). Institutionalization, unlike implementation, requires the innovation to become a part of the everyday operations of a system and, therefore, is more difficult to achieve because knowledge, skills, and attitudes must all change within not only the organization itself but also its members. I think in many situations institutionalization does not occur because of attitudes about the innovation or lack of follow through from the innovation implementation, but appropriate change management planning can avert this situation and create a positive environment for institutionalization to occur. The purpose of institutionalization, according to Seels & Richey (1994) is “to integrate the innovation into the structure and life of the organization” thus bringing about more long lasting change (p.47).

Policies and Regulations

Utilization is both affected and has an influence on policies and regulations. Seels & Richey (1994) define policies and regulations as “rules and actions of society (or its surrogates) that affect the diffusion and use of instructional technology” (p.47). Influences both within the field of instructional technology and outside the field have shaped the policies and regulations that products and innovations must now conform to in practice. While practice is heavily affected by these standards, theory is less affected by the rules that govern day to day practice (Seels & Richey, 2004, p. 47). Some examples of policies and regulations that the instructional technology field has influenced are copyright law, television programming, and curriculum standards. In my experience, policies and regulations are often the biggest challenge to proper utilization because they may be unclear or complicated and affect the program or package on multiple levels.

Conclusion

Utilization focuses on the actual use of materials and processes in the learning process. The domain of utilization is interrelated with the other domains through

design of resources, development of the resources, management of the media being used, and as a prerequisite for both formative and summative evaluation. Within the study of utilization the acceptance of new innovations is important as well as the policies and regulations affecting how the innovations may be used. Those instructional technologists involved in the study and practice of utilization, according to Seels and Richey (1994) will be involved somehow in “involvement in issues of policy formation, political behavior, organizational development, ethics, and sociological or economic principles” at the institutional level (p. 45).