Domain of Utilization

Utilization is best defined as to make use of the processes and products of instructional technology. Similarly, Seels and Richey (1994) define utilization as the "systematic use of resources for learning" (p. 46). Activities within the domain of utilization transform the job of instructional technologist from analyzer, planner, designer and developer to implementer, change agent, instructor, and administrator. Thus, utilization involves the execution of planned change and initiation of instructional delivery. It also includes monitoring of the process to determine success and progress toward a set of desired outcomes and process revisions as they are identified. Both foresight and flexibility are key attributes needed to successfully implement instructional solutions. An understanding of the subcomponents of utilization will equip an instructional technologist in both areas.

Utilization is the oldest domain of instructional technology in that the use of audiovisual materials predates research in the systematic design of instructional media. In their definition of instructional technology, Seels and Richey (1994) identify four subcomponents of the definition of utilization:

- **Media Utilization** refers to the "systematic use of resources for learning." Based on instructional design specifications and learner characteristics, technologists select appropriate media, settings and resources for learning (Seels & Richey, 1994, p. 46).
- **Diffusion of Innovations** is the "process of communicating [an innovation] through planned strategies for the purpose of gaining adoption" (Seels & Richey, 1994, p. 46). This is the process of organizational and systemic change as an innovation, intervention or instructional module is introduced to learners. This process increases awareness of a planned change, provides information about the benefits of changing, encourages a decision by providing resources, supports implementation, and confirms the adoption choice to adopt by helping stakeholders recognize the benefits.
- **Implementation** is the process of "using instructional materials in real (not simulated) settings." (reference, p. 47).
- **Institutionalization** is the "continuing, routine use of the instructional innovation in the structure and culture of an organization" (Seels & Richey 1994 p. 47).).
- **Policies and Regulations** are the "rules and actions of society (or its surrogates) that affect the diffusion and use of instructional technology (Seels & Richey 1994, p. 47). In many organizations, policies and regulations help facilitate the processes of instructional technology; but, as the system adapts to its environment, it may need critical analysis and revision. In many instances, as needs are identified during the analysis phase, revision to policies, procedures and regulations may be needed. Conversely, policies can be constraints to a project (as discussed in the management section of this portfolio) or barriers to the change process (Pershing 2006).

Work within the utilization domain falls within the "Implementation" stage of a generic Instructional Systems Design (ISD) model and includes planning for and implementing the delivery of instruction or interventions. Like the other domains of instructional technology, a series of questions can help to better define the domain and its processes more clearly:

What factors are considered as an instructional product is deployed to adopters?

In order to successfully implement an innovation or a change an instructional designer should understand the culture of the organization and the adopters of the change. Helping a potential client understand why a new learning solution is a change and requires careful planning is essential to a

successful implementation and management of a change. When planning for a change, an instructional designer should work with the client to identify the relative advantage of implementing an intervention.

The decision to adopt an innovation, or intervention, by members of an organization largely depends on the ability of implementers to convince the adopters why the innovation is being proposed in the first place. In addition, Havelock (1973) suggests that there is the need to have change integrated into the daily life of any organization so that when changes are implemented, the process is not inhibited by as many barriers.

Garland (1991) identifies people, cost and infrastructure issues as possible barriers to the adoption of instructional technology interventions. In order to overcome these barriers, technologists must inform stakeholders of the "relative advantage" of change by understanding the individuals and roles that people play within the organization to determine their willingness and capacity to change; highlighting the cost of not changing; and, working with technology systems personnel to integrate the change appropriately (if it is related). Burkman (1987) suggests that cost, disruptiveness and quality of learning will be the key attributes that clients will consider in measuring the relative advantage of adopting an instructional technology intervention, but also identifies other important variables such as complexity (how complicated is the innovation?), trialability (can it be tested or "tried out?"), compatibility ("will it integrate with our current system, values, experiences?), and observability (can the results of the change be easily detected?). As the client has gained knowledge of the innovation and has decided to change, the process continues.

Rogers (1962) defines the process of adopting a change as a "series of choices and actions over time through which an individual or system evaluates a new idea and decides whether or not to incorporate the innovation into ongoing practice" (p. 168). Havelock (1973) identifies cyclical nature of this process, a system of constantly improving an organization driven by the need to "survive and thrive" (p. 1). There are several models of "change management" and most include the general processes of identifying what needs to be changed, making people aware of what needs to be changed, suggesting strategies for changing, deciding to change, implementing the change, sustaining the change, re-evaluating the system (Rogers, 1962; Havelock, 1973). One specific model for change in public schools is Hord and Hall's (1987) Concerns-Based Adoption Model (CBAM). CBAM identifies seven stages of concern as users are introduced to an innovation Table 1 illustrates how Havelock's CREATOR model (1973) serves as the theoretical basis for Hord and Hall's CBAM (1987).

Table 1: Theoretical basis of Hord and Hall's CBAM model

Comparison of Stages of Concern by Havelock (1973) and Hord and Hall (1987)		
Havelock (1973)	Hord and Hall (1987)	Description of Stage
Care	Non-use	"I am not concerned about the innovation"
Relate	Informational	"I would like to know more about it"
Examine	Personal	"How will using it affect me?
Acquire	Management	"I seem to be spending all of my time getting materials ready"
Try	Consequence	"How is my use affecting learners? Can I refine it?"
Extend	Collaboration	"How can I relate what I'm doing to what others are doing?"

Renew	Refocusing	"I have some ideas about something that would work even better."

As Table 1 shows, it is evident that these stages seem to parallel the general stages that were present in both Rogers and Havelock's research. In general, while the methodology may differ depending on the content, system or learner characteristics, the general approach used by instructional designers are similar.

Who are the potential adopters/stakeholders? Is the system ready for the proposed intervention?

A number of researchers have identified categories of adopters (Rogers, 1962; Havelock, 1973; Hord & Hall, 1987). These identifications from the CBAM model of change seem to align with Roger's (1962) adopter categories. Table 2 illustrates the direct relationship between Rogers' *Diffusion* theory (1962) and Hord and Hall's *CBAM* (1987).

Table 2: Comparative Analysis of Adoption Characteristics in Two Models

Comparison of Potential Adopters Identified by Rogers (1962) and Hord and Hall (1987)			
Rogers (1962)	Hord and Hall (1987)	Percentage	Description (CBAM)
Innovator	Innovator	8%	Eager to innovate, open to change, willing to take risks
Early Adopter	Leader	17%	Open to change, but more thoughtful of process of change
Early Majority	Early Majority	29%	Cautious and deliberate about innovation adoption
Late Majority	Late Majority	29%	Skeptical of change, somewhat "set in their ways"
Laggards	Resisters	17%	Suspicious and opposed to new ideas

The above categories may seem over-generalized and somewhat stereotypical. However, they do offer some insight into the social process of change. As change is implemented, an understanding of these categories can help an instructional technologist understand where his energy should be focused (i.e. early and late majority) and where it should not (i.e. laggards).

What data will influence media selection and how does this relate to the sustainability of an instructional solution?

As discussed earlier, a client's needs and system constraints must be taken into account when selecting methods within the domain of utilization. Selection and use of appropriate media for the intended system, learners and content are very important to the success of any instructional innovation. Should a technologist select media that is beyond the scope of learner's prerequisite skills, incompatible with an organization's technical infrastructure, out of alignment with system policies or unsuitable for

instructional objectives, work within this domain will be ineffective (Dick, Carey and Carey, 2005; Seels and Glasgow, 2001).

These are also considerations as the adoption process moves into the phase of sustaining and refocusing. Gagne, Reiser (1981) and Romiszowski (1988) all present models that guide instructional technologists. Considering instructional methods, type of learning tasks (subject matter), learner characteristics, practical constraints, instructor preferences, physical attributes of media (sensory channels), and physical environment when selecting media seem to be common components of media selection models (Reiser, Gagne, et. al. , 1981; Romiszowski, 1988). The above utilize data collected in the learner and environmental analysis to determine appropriate media.

Once an intervention has been implemented, the instructional technologist must "build capacity" within the system for the change to actually occur once he is removed from the role of "change agent" (Havelock, 1973). Periodic support and "follow-up" may be needed, but the instructional technologist, through careful implementation and selection techniques, should build confidence within the system personnel to sustain the interventions. This can be achieved through the systemic and strategic process of working within the system to facilitate change.

What level of support will be needed for the stakeholders to utilize these resources?

Burkman (1987) suggests four levels of support when building the capacity for change within an organization:

- Moral support – forms of encouragement ("pats on the back") to use the innovation that are provided to the person who is trying to implement it. Moral support can include kind words, salary differentials, work load adjustments, or citations.
- Tactical support – removing or changing organizational practices that impede implementation. This could include changes to policies, procedures, technical systems, or materials selection to facilitate stakeholder adoption of an innovation.
- Training support – ensuring all who are affected are prepared to do whatever will be required of them. In many cases, the intervention designed by the technologist is an instructional program; but to support the learning, adding support for adopters who may not possess the prerequisite skills for the new learning and may need additional training.
- Material support – providing any supplies and materials needed for implementation on time and in sufficient quantity. This would include instructional supplies, flawless computer software, job aids, and any other materials that would be needed to assist stakeholders in the process of implementation.

How will the system need to change to support the proposed interventions?

In many cases, this may not be possible. Policy in an organization, especially in the public arena is a highly political and carefully constructed entity, although as time passes and systems are faced with societal change, they must change policies to remain relevant to influences outside their system. Organizations must also be willing to change policies due to internal strategies and issues, if needed. The example of an Acceptable Use Policy (AUP) for a public school system best describes a "living" policy that is in a state of constant revision. Ten years ago, public school officials drafted an AUP that addressed very different, and less sophisticated, issues from AUP's that are being implemented in school American school systems today. The rise of web-based applications that are both social and

collaborative, the availability of malicious software and techniques and the intense battle over copyright of media that is easily accessible have forced systems to constantly update their policies.

As instructional technology initiatives and interventions are implemented, the instructional technologist must be mindful of policies, procedures, regulations and strategic goals in place at the organizational level in order to ensure that he is presenting a model of change within the constraints of the system. If adapting these boundaries is feasible, then a critical analysis would ensue; but, if not, they must be taken into consideration as media is selected, change is implemented and interventions are adopted.