**Domain of Utilization**

Believed to be the oldest of the instructional technology domains, utilization occurs when an individual or group learns using processes and resources designed for that purpose (Seels & Richey, 1994).  The process of facilitating the utilization of an <u>innovation</u> within a system, and bringing about sustainable change, is often one of the toughest challenges for an instructional designer.  A productive relationship between the learner and instructional material must be carefully cultivated, which is why this domain is so important.  There are many factors that must be considered which can affect the utilization process significantly, and most are in regard to the people who will be involved in this change.  Factors such as cultural traditions, lack of knowledge, user acceptance and risk aversion can be critical, as well as infrastructure and cost (Garland, 1996).

Within this domain, the primary responsibilities of an instructional designer are to plan and supervise the implementation and/or delivery of the instructional materials.  This also entails evaluating the innovation-adoption process and maintaining its utilization within the system while abiding by any pertinent rules and regulations.  The designer must also ensure that the learners' needs are being met by preparing them and offering guidance while they are learning to use the appropriately selected instructional tools and strategies.

There are four subcategories within the domain of utilization including: media utilization, diffusion of innovations, implementation and institutionalization, and policies and regulations.

**Media Utilization**

Based on instructional design specifications, especially in regard to learner characteristics, media utilization is a decision-making process in which learning resources are used systematically.  The instructional designer's responsibilities in this situation are to ensure that the instructional materials and strategies, which were decided upon in the media selection design phase, are indeed compatible with the learners and that the learning objectives will be met.  It is important to note that the process of media selection in this context is not the same as the media selection which occurs as a step in instructional systems design.  When an instructional designer is selecting media as a step within the design phases of a project, then it is considered to be a design function.  Media selection is considered to be more a function of utilization when the selection is based on subject content or characteristics of the media (Seels & Richey, 1994).

There are several models available which can aid an instructional designer in planning for and selecting appropriate media for the instructional materials.  One very popular procedural guide is the ASSURE model (Heinich, Molenda, Russell & Smaldino, 1999).

This model and a brief description of how an instructional designer would use it to aid in their decision-making process can be found below in Table 1.

| | |
|---|---|
| **A**nalyze learners | First, the designer needs to understand the target audience.  To accomplish this task, they must obtain information about the learners' <u>general characteristics</u> (age, ethnicity, socioeconomic status, etc.), <u>specific entry competencies</u> (prior knowledge, skills and attitudes), and <u>learning styles</u> (verbal, logical, visual, etc.). |
| **S**tate objectives | Next, the designer will need to write clear and measurable learning outcomes or objectives.  To do this, they need to follow the ABCD's of writing objectives and address the following**:**<br><br>• **A**udience - who are the learners?<br>• **B**ehavior - what do they need to be able to do?<br>• **C**ondition – what are the conditions under which the behavior will be observed?<br>• **D**egree – what is the level at which the skills are to be mastered? |
| **S**elect media and materials | Once the designer knows the learners and has a clear idea of the objectives, the next step is to select the:<br><br>• <u>Instructional method</u> most appropriate for particular students,<br>• <u>Media </u>that best complements chosen instructional method, and<br>• <u>Materials</u> students will need to master the objectives. |
| **U**tilize media and materials | During this step, the designer will deliver the lesson using the media and materials selected in the previous step. |
| **R**equire learner participation | As a part of the teaching strategy, the designer should incorporate questions and answers**,** discussions**,** group work**,** and hands-on activities**.**  It is important that the learners are actively involved in the learning process, as opposed to being passively taught. |
| **E**valuate and revise | In the final step, the instructional designer should reflect upon the training, objectives, instructional strategy, materials and assessment in order to determine their effectiveness and to identify any areas needing revision. |

Table 1.  The ASSURE Model from *Instructional Media and Technologies for Learning* by Heinich, Molenda, Russell, and Smaldino (1999). Retrieved from http://www.uncw.edu/education/edtech/techcourse/assure.htm.

**Diffusion of Innovations**

The overarching goal of diffusing innovation is to bring about change by using planned strategies to communicate with learners or adopters.  According to Burkman (1987), in order to optimize the probability that an innovation will be adopted, the product needs to be perceived as favorable by the potential adopters.  The instructional designer should

also make sure that the pertinent information and necessary support is given to the potential adopters at the right time.

According to Rogers (1995), "diffusion is the process by which an innovation is communicated through certain channels over time among members of a social system" (p.5).  The four primary elements of this definition are the <u>innovation</u>, <u>communication channels</u>, <u>time</u> and <u>social system</u>.  He also describes five innovation attributes that should be considered by the instructional designer in order to facilitate effective change which include: <u>Relative Advantage</u>, <u>Compatibility</u>, <u>Complexity</u>, <u>Trialability</u>, and <u>Observability</u>.

Another model that can be utilized as a means to facilitating change within a system is Havelock's Seven Stages of Planned Change (1995), also known by the acronym CREATER.  The seven stages for the instructional designer (change agent) to follow are:
- Care: figure out what are the concerns.
- Relate: build client relationships within the system.
- Examine: define the problem in measurable terms.
- Acquire: obtain the necessary resources.
- Try: test the solution.
- Extend: give the solution (innovation) to the users and work on gaining acceptance
- Renew: maintain usability throughout system.

**Implementation and Institutionalization**

When instructional materials or strategies are used in real situations, not simulations, then implementation has occurred at the level of the individual learner.  When an instructional innovation is utilized on a continual and consistent basis at the system or organization level, then the product is considered institutionalized.  In order for this to take place, the innovation must be incorporated into the organization's routine policies and procedures. Both of these situations are dependent upon changes in both the individual learner and organization (Seels & Richey, 1994).  It is important for the instructional designer to plan for both individual and organizational change in order for the innovation to be successfully integrated.

An example of innovation implementation and institutionalized change, involves the local gas distribution company, GOGAS, which currently has 19 stations all across southeastern North Carolina.  This company's entire operation relied upon an outdated mechanical system, which they wanted to do away with in favor of a newer computer-based electronic system.  At the organization level, this change was regarded as necessary, accepted and was incorporated into the policies and procedures of the company.  As a way to facilitate acceptance and utilization of the innovation among the employees, a training program was designed and implemented, and supportive services were put into place (technical support).  Today, all 19 stations and the corporate office use this new electronic system, which has been successfully institutionalized.

**Policies and Regulations**

As with any system, large or small, there are regulations and policies which govern how the operation runs, which must be carefully considered and followed in order for a change to be effective.  It is the responsibility of the instructional designer to understand the issues and constraints at hand, and also to facilitate a policy change if one is determined to be necessary in order for a planned change to take place.

There are also federally mandated policies such as the Americans with Disabilities Act (ADA) and copyright laws, which are critical for instructional designers to be cognizant of in regards to instructional materials and implementation.  Another example of such a policy is a standard that governs how virtual learning materials are created and disseminated in a web-based learning environment. This standard is referred to as the Sharable Content Object Reference Model (SCORM).  Federally-funded agencies, including state-funded institutions, are required to maintain compliance with SCORM, as well as Section 508 of the Rehabilitation Act of 1973, in order to ensure that all electronic materials are accessible to individuals with disabilities.