Ten Significant Aspects of Instructional Technology
A Personal Reflection

1. Technology in the Classroom

During my first semester of graduate school I became aware that many teachers, specifically classmates who weren't in the IT program, were hesitant to use technology as a teaching tool. They expressed apprehension at having to learn something that, in their opinion, wouldn't necessarily be useful in the classroom. I soon learned that technology should not be implemented without a specific plan and that it must have a clear link to the curriculum in order to be effective. Simply having access to computers or the internet in a classroom is not enough to make a difference in learning. I also became aware that in order to improve student learning, teachers must be capable in their ability to appropriately and successfully use technology.

With this knowledge I will be better able to provide support to teachers and assist them in using technology to its greatest potential. The guidance that I will be able to provide if I am employed as a technology coordinator will enable them to use technology to support the curriculum and enhance the learning process, consequently allowing students to be actively involved in their own learning. I am aware that this takes considerable time and planning, but the effort involved will have a significant impact on the effectiveness of technology implementation in the classroom.

I have also learned that the way teachers choose to use technology is ultimately based on their own knowledge of the technology itself and their skill in using it. This shows that training and development programs for educators are needed to ensure that they are competent technology users, a major factor in the success and growth of technology implementation in the classroom. In order to ease their apprehension and help them see the benefits of educational technology, educators must be provided with adequate technical support and training. They must be given the resources needed to restructure their lessons with technology integration, and I will work with administrators to ensure that the shared vision for technology is consistent with the overall educational mission.

2. Open Source

I've learned that when computer applications are used to support teaching and learning there are always new things to learn and new ways of doing things. What works best in one situation will not necessarily be the best fit in a different situation. For this reason it is important to continually learn new skills and be aware of all options. I had only a small

amount of prior experience with open source software. Now that I am aware of the range of products available and their reliability and quality, I see the merit that they have in educational settings and plan to take full advantage of open source software whenever possible.

From word processing, spreadsheets, and presentation software to server technology, open source can be indispensable to educators and those who work with them. Using open source software can save money for schools with limited financial resources. If I am to someday work as a school technology coordinator I will need to be able to budget these resources in an efficient way. There will be situations in which open source will be the ideal option.

A possible barrier that I can foresee will be those individuals who do not know what open source is and are hesitant to try it. In these situations I will need to be sure to provide a clear, comprehensive explanation and be ready to demonstrate the uses of open source software to show that they are equivalent or superior to "brand name" counterparts. Research findings, hands-on demonstrations, and training sessions or informational workshops will be vital in such situations.

3. Universal Design and Assistive Technology

Universal design emphasizes the creation of learning environments and materials in a way that meets the needs of learners with a broad range of characteristics. This concept stresses that designing products and learning environments that are accessible to people with disabilities will often benefit others as well. For this reason I will always be sure to apply the principles of universal design to the overall design of instruction, training, and educational materials.

I am aware that universal design does not guarantee a perfect learning environment for everyone. Rather, it reflects an understanding of the uniqueness of each learner and the need to accommodate differences, and consequently maximizes the learning potential for all students. To improve learning outcomes for every student, instruction needs to be accessible and appropriate for individuals with different backgrounds, learning styles, abilities, and disabilities. If materials are designed for such universal use they will not need to be significantly altered in the future.

With this in mind I will strive to create instructional and training materials with universal aspects of design in mind. To ensure accessibility and usefulness to as many people as possible, I will use simple layouts with clear, easy to read text. I will also use varied methods of content presentation, using electronic format whenever possible so that it can be easily altered to meet the needs of different learners.

While I doubt I will ever become an expert in the laws that surround disability services in higher education, I feel it is important for anyone working at U.T. to be aware of the scope of services that are provided for our students who have disabilities (who are

growing in number). Technology plays a large part in providing accommodations for students with disabilities, those that are apparent as well as those that are "hidden". I have had the opportunity to learn about and use assistive technology products such as text-to-speech software, word prediction programs, screen readers, alternative keyboards and mice, graphic organizers, and various accessibility options and I am aware of the effectiveness and benefits of differentiated instruction. Partnered with universally designed instructional materials, these tools can make a world of difference to a learner with disabilities and allow a greater number of students to participate in the learning experience.

4. User-Centered Design and Web Accessibility

Related to universal design (but deserving of a separate mention) is user-centered design and accessibility in web design. I've learned that user-centered design is key in creating effective instructional websites, and I am now aware of the importance of making websites accessible to all users. The internet plays a very large part in information sharing and course delivery, and I have learned that accessibility, legibility, and navigation are critical elements of all websites.

While it can be difficult to keep accessibility in mind while planning, implementing, and maintaining a web site, I have definitely found that it is easier to plan ahead then to go back and make changes and modifications. Proper planning saves time in the long run, and this will benefit me as I create websites for myself and for instructors, both in my current role at U.T. and in the future.

I have also learned how important it is that the audience be considered throughout the entire design process. Their needs must influence all decisions made about a website and the site design should be driven by audience considerations. The better I understand the audience and their needs, the more effective a website I can create.

A simple and consistent layout, sufficient contrast, logical flow of information, clear navigation, design integrity, and bandwidth consideration are design components that are important in providing for the needs of all potential users. It is also important to use alternate text descriptions and to preview page designs in different web browsers and a variety of computing platforms, monitor sizes, and screen resolutions. I will also make use of accessibility testing software to be aware of any inaccessible elements. If the internet is to be used as an educational tool, usability and accessibility must be at the forefront to ensure equal benefits for all learners.

5. Andragogy – Adult Learning

The term adragogy was completely new to me, though the theory and concept made immediate and perfect sense, and I found it interesting and extremely relevant to learn about the differences between andragogy and pedagogy. Adult learners do possess unique

learning characteristics and technology provides access to educational opportunities that might otherwise be unavailable to them.

My understanding of how adults learn will be valuable to me in many ways, especially when I have responsibilities at U.T. that are more aligned with the field of instructional technology. I currently work with adult students and I feel that I have greater understanding of their needs as they apply for admission to the program and then pursue a graduate degree. I have a greater awareness that, as self-directed learners, adults have unique learning styles and reasons for continuing their education. The students in my department want to improve their ability to impact social change and effectively serve and advocate for underprivileged populations. Most also want to achieve higher status and professional advancement, as well as be competitive in the job market. They are self-directed learners who have specific goals that they want to achieve and they do not want to feel as if their time is being wasted. The reasons for learning something must be evident to them.

I hope to continue working with adults in the future and I feel that it is crucial to understand these learning characteristics. It is essential to make apparent how each class and activity or assignment will help them attain their goals. I will identify goals and objectives early in all teaching and training and give special consideration to how technology can be used to support and expand adult learning. Andragogy will also be important to me in a role as technology coordinator, as I will provide training to teachers and must make it clear that what they are learning is relevant and useful.

6. Effective Online Collaborative Learning

As I planned my first online collaborative project I learned that in order for it to be successful it must have specific goals, tasks, and outcomes. Planning was once again a key element, as were clear guidelines & expectations and close alignment with instructional objectives.

Online collaboration is an opportunity to transform the way social change is affected and has strong implications for our M.S.S.W. curriculum, which is currently being revised. When thinking of how I will use online collaboration in my career at the College of Social Work, I immediately think of the great possibilities for our students and the agencies they work with. Organizations, agencies, and social work programs can use technology as a means to collaborate with one another in sharing information and ideas to better serve clients. Professionals and students can join together for the common purpose of producing more effective and efficient learning environments.

Online collaboration can be especially important in a department such as the one I work in, as the M.S.S.W. program is offered in three locations across the state. The internet offers increased communication between these groups of students, who are in the same graduate program but surely have many different experiences and perspectives between them. Tools such as wikis, blogs, and message boards can be utilized for reflective

interaction, which I feel should be encouraged and supported. As I work with instructors who are in the early stages of implementing technology for collaboration, I will make them aware that there must be a purpose for the collaboration and that it must be meaningful to the learners. The participants must be aware of what the collaboration can offer to them.

7. Sense of Community in Asynchronous Learning Networks

As many programs move to online learning environments, it becomes important to understand how the internet can best be used to support and facilitate learning. By taking a class in the IT program that was entirely web-based, I was able to gain a first-hand experience of online learning. It provided an opportunity for me to learn about distance learning by experiencing it myself. Since much of the learning took place collaboratively through learner interaction, the importance of a feeling of community quickly became apparent.

When a learning community is formed it helps facilitate the exchange of ideas and information among the members. It is common to assume that the lack of personal, face-to-face contact would limit the social dynamics of asynchronous online learning and such a community would not develop. However, the group does move through stages to form communities of learners who share their experiences and knowledge and from this discussions and conversations can build.

As more asynchronous learning networks are developed in the College of Social Work, it is logical that online discussions and project work will continue to form a significant part of the courses. In such instances traditional classroom instruction cannot merely be transferred to web format, it must be transformed. By the very nature of material being taught I'm sure it will be a challenge for some of our instructors to successfully create an online experience that enhances and enriches learning while still maintaining a personal approach to social work. The instructor will facilitate the learning experience, and with my background in instructional technology I will be able to provide support and guidance to assist in creating meaningful online interaction and presentation of information. I will be able to provide ideas on how to develop and use media and technology in online learning and determine ways to build student interactivity into asynchronous online discussions.

8. Multimedia in Education

I've learned that tools such as Flash, digital photography, and digital video can be used in exciting and creative ways to enhance teaching and engage students in the learning process. I am now capable of using these tools to create a range of media and will be able to present information and ideas to learners with varied learning styles.

My main goal in using multimedia will be to enhance the learning experience. The internet is ideal for presenting information and content in various formats, and I will create web-based interactive modules for many different learning purposes. Multimedia can be incorporated into instructional activities such as tutorials, and simulations and used to present ideas and concepts in a way that might be easier to understand than text alone. I will use images and audio to create interactions between the students and the content, and will be able to integrate these modules into online training to demonstrate different concepts ideas, and skills.

By using multimedia I will be better able to hold the learners' attention and interest, which will hopefully increase their motivation and learning. Different types of media appeal to our different senses and learning styles. For this reason I see limitless creative possibilities in combining media to increase the potential for learning. I especially like the social aspect of film and video when it is used to learn about other places and cultures. Video and images can expose students to realistic experiences and situations they may not have the chance to encounter directly. Interactive, instructional websites can enable students to experience vicariously what they cannot see in person.

As I prepare to design and use educational multimedia, I will need to consider factors that might limit its learning effectiveness. It is possible that the technology itself can cause a distraction rather than add educational benefit and is important to be sure it adds value and will specifically support or extend learning, not just used as mindless entertainment. This is why I will use multimedia elements carefully, appropriately, and with a specific purpose so as to not create a distraction or accessibility issues for the learner.

9. Instructional Design

I've learned that **i**nstructional design is the process of creating an efficient, effective instructional environment and materials that will enable the learner to accomplish learning objectives, and it is followed throughout the development of any training session, activity or course. It provides a plan by which to analyze, design, develop, implement, and evaluate instruction to meet specific learning objectives.

There is opportunity for learning in most employment situations, be it continuing education, training courses, or online instruction, and all successful learning environments depend on effective instruction. I will be able to use instructional design in many such settings to enable learners to achieve specified learning outcomes. Effective teaching begins with effective planning, and learners, objectives, delivery methods, and evaluation must form the structure of instructional design to produce an effective learning activity or environment.

I will hopefully work with faculty to assist them in creating instructional materials and will apply principles of design to the creation of courses. In doing so I will work with them to develop specific and clear learning goals and objectives and select technology and media (as appropriate) to reach the desired learning outcome. It will be important to

understand what they are trying to achieve and focus on the most effective way to present content. I will also focus on content and course organization, learning activities that support objectives, and effective assessment methods. I am especially interested in the application of instructional design principles to online learning environments, and will hopefully use this knowledge to transform course material into effective instructional websites that support learning outcomes.

10. Research

Research is an area that at first seemed daunting, but I learned to appreciate its importance and place in the rapidly changing world of technology. The merits of educational technology can be discussed at length, but research is needed to back up these claims and enhance understanding of its role in teaching and learning.

Technology does provide vast learning opportunities, but research is necessary to prove its worth as a classroom tool and also to show the need for funding and the importance of training. Research is a way in which the field of instructional technology can become further established. It is also extremely important in understanding the importance of equal access to educational technology and why this issue has such significance in today's world.

As I embark on a career in instructional technology it will be important to monitor trends and issues in the field and be informed of current and relevant information. Therefore, it will be important for me to be able to recognize legitimate research sources, differentiate between the different research methods, and understand the importance of validity. If I am someday in a position to conduct my own research, I will need to be able to write a comprehensive research proposal and conduct a review of the literature, and use proper sampling techniques. If I were to embark on a research project today (with adequate funding, of course), I would most likely choose to study digital divide issues, constructivism, online education, and/or adult learning. With this in mind, I find qualitative research to be very interesting as it can produce data that is not obtainable through quantitative research and therefore the results provide a different type of knowledge.