The Relationship of IT Professionals and Facilitators’ joining together to emphasize Pedagogy with Technology

By
DEBRA PETERSON
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Recognizing the Need for Training

Instructors serve as coaches, motivators and role models, representatives of distributors of information. Computers, technology, and software can outperform the role of the traditional teachers these days. As instructors we have to look at the seemingly possibility that computers are trying to take our place. Due to the efficiency of the computer, society relies upon its usage more so now than 20 years ago.

Facilitators that use information technologies are often in need of help. Since there is such a wide range of technological choices many facilitators find it difficult to be proficient in technology in which they can demonstrate pedagogy outcomes. Facilitators need training to acquire new skills that will make them proficient users to create engaging technological environments.

Pettenati et al, from the Department of Electronics and Telecommunications, University of Florence stated, teachers promote innovative activities in education, and their efforts must be facilitated and integrated with new technologies that support their work. Efforts have to be made to invest time and resources, into facilitators so that they will master technologies and effectively accomplish instructional design.

Professional development is an option that instructors can use to stay current with technological demands in education. Facilitators need full training courses to be prepared to teach with technology and provide pedagogy outcomes and have follow-up support once they have engaged in workshops and or coursework to improve their technology skills.

Faculty Acceptance of IT trainers

Pettenati et al, stated, the approach to the design of courses that support information technologies is structured differently than those of conventional training due to the fact that
teaching and communications has become versatile in its delivery methods, new roles have emerged for services and staffing indicating a more skilled use of networked information resources.

Shelly McCauley Jugovich et al, author of the article, IT and Educational Technology: What’s Pedagogy Got to Do with It? Stated in her article that, “The University of Minnesota Duluth (UMD), as at many universities, the organizational structure separated the responsibilities for teaching the use of a technology tool ("Go to the Edit menu and click on Copy") from teaching the pedagogical application of the same tool. On our campus, Information Technology Systems and Services (ITSS) taught the mechanics of the tool, and Instructional Development Service (IDS) was responsible for teaching effective pedagogical uses.”

Pedagogy and technology are vital during the learning process and facilitators want more training and instructions on how to become better instructors when using various communication methods of instruction. Instructors are finding themselves ill equipped to transfer their traditional pedagogy skills to intertwine with technology.

However, Matthew J. Koehler author of Integrating content, pedagogy and technology, feels that there is little clarity about what form technological knowledge should take, when thoroughly looking at its representation, how it is measured, and how it is reported upon. Mr. Koehler reminds us that scholars are researching this area and agree that traditional methods of training instructors, such as through workshops, and courses are ill equipped to convey a deep understanding of how to implement technology and pedagogy.

Since instructors are not gaining the skills to implement pedagogy with technology by attending workshop or courses. There are some universities that are utilizing their IT departments and staff to mentor/train facilitators on how to incorporate pedagogy with technology.
Faculty Skepticisms

Shelly McCauley Jugovich et al, discussed in her article, IT and Educational Technology: What’s Pedagogy Got to Do with It? Those IT professionals have acquired the ability and qualifications to teach pedagogy. Conventionally IT departments were never required to have pedagogical expertise when hired and IT jobs do not require a background in pedagogy.

Her co-author, Bruce Reeves, said there is discussion and skepticism concerning IT’s being professionally qualified to teach about pedagogy. There are 3 barriers that education executives are facing to implement IT’s mentoring/training of instructors. 1) The organizational barriers, 2) cultural differences within academic disciplines and 3) matching personality to job.

Even though there are three barriers to establishing a bridge that joins IT and instructors together both parties draw on prior experiences, the understanding of social certainty, prior logic framework, and the assembly of appropriate information to serve as personal and professional support.

Organizational Barriers

Shelly McCauley Jugovich et al, stated in, IT and Educational Technology: What’s Pedagogy Got to Do with It? Those organizational barriers are caused by Information Technology Systems and Services (ITSS) having to keep a low profile due to their teaching of pedagogical use of technology. Because of the expansion of technology, new faces and ideas, these elements are causing the collaboration of ITTS and Instructional Development Service (IDS) and are forcing barriers to collapse and causing organizational change. Even though the departments are intact there is no separation of the mechanical from the pedagogical use of the tool. Each discipline has its own language as well as faculty having their own language in their
discipline and every department has their own unique cultural that cannot be duplicated and these norms must be address if departments are to work collaboratively together.

**Measuring Acceptance**

Jugovich et al, quoted in, IT and Educational Technology: What’s Pedagogy Got to Do with It? “For example, the word “rubric” is acceptable when discussing teaching with an education department faculty member, but when speaking to faculty from industrial engineering department and using the phrase “benchmarks for grading” to refer to the same concept.” Our intentions are to focus on the instructors needs so that they are able to teach what they want their students to learn so that the information is then translated to the appropriate language for that discipline. Matching personalities is an important concept in IT departments when working with instructors. We are conveying that IT staff should embrace the philosophy to aid in finding an effective solution based on the instructors needs (technical skill level, time constraints, resource availability, and so forth).

Research shows that instructors who learn how to incorporate technology and pedagogy can improve the way that they teach and provide student-centered approaches that instruct and develop higher order thinking skills. Courses like instructional technology implements thinking, learning and the promotion of creativity. Integrating instructional technologies with assessments and resource materials provides instructors the opportunities to organize and manage instructional activities.

Shelly McCauley Jugovich et al, stated, arguments were presented at the conference concerning peer mentoring between faculty members receiving educational technology skills, but felt there was no need for IT staff to teach pedagogy and instructors are embarrassed to expose their vulnerabilities to their colleagues. At the University of Minnesota Duluth (UMD), we find
peer mentoring is limited to interpersonal skills, such as developing trust, creating a safe environment, and empowering the instructors to direct his or her own learning.

Teacher must be able to obtain a central focus of content when re-defining their skills. Training must accentuate the design and development of skills, pedagogical strategies, and basic IT skills. New teacher training must have foundational courses that target pedagogical strategies that provide proficiency in teacher training. For teachers to be able to demonstrate that they understand their training they must have opportunities to discuss with one another throughout their training process, because they are the learners. Instructors should have the availability to take training course online to focus on pedagogy integration in an online environment.

Shelly McCauley Jugovich et al, stated that they did not have any formal assessment measures, but there were many indicators that ITSS’s new role was successful among instructors. 1) Instructors were asking how to apply pedagogical application of technology tools as they learn. 2) Instructors requested workshops both pedagogy and technology from ITSS. 3) Workshops increased presented by ITSS and IDS. 4) Collaboration with IDS and ITSS increased.

To provide effective training programs using IT departments as mentor/trainers empirical research in this matter must be accomplished and examined concerning pedagogical approach. We have to look at a comparison of face-to-face training verses online training. Assessment must be taken into consideration to record the satisfaction of achievement while in training the many factors concerning the learning process, and different instructional training approaches.

Staff Development Needs

Instructors have reported that short workshops are not in their best interest when trying to develop sufficient skills concerning pedagogy content with technology. Instructors learning from
one another would be considered as a colleague and not a mentor or trainer. When training instructors about pedagogy with technology there should be an IT trainer to teach how to implement pedagogy and instructors should have intrinsic motivation to learn from them.

Pettenati et al, said in her article, Information Technology and Staff Development, if instructors do not spend enough time learning how to use IT for instructional purposes it will sparsely be used in the classroom, implemented only by occasional and personal choice. She also stated that Europe is constantly behind in technological literacy by the standards of western countries, but the problem of computer integration is happening on a global scale. Compensation is an extrinsic motivator of any learning and instructors are not receiving any extra money for teaching technological concepts that require extra work. It cost more money to have a course prepared and formatted by IT professionals due to the fact that it requires more creativity than traditional classes. Therefore, new teacher standards much be implemented to insure diverse teaching roles based on competencies and skills developed.

Project Development Plan

To have effective training there must be a system in place that provides excellent delivery of expected outcomes. These outcomes must be demonstrated throughout an instructors training or the system is a failure.

Pettenati et al, stated in her article, Information Technology and Staff Development, created a schema, an IT-based educational project development: phases, roles and tasks. The instructional design model included, 1) Analysis (of users' needs, their learning styles, expected objectives, available material etc.) 2) Design (of strategies and activities) 3) Implementation (of instructional material, instructional strategy etc.), 4) Evaluation (whether final, intermediate, formative or summative). This model for instructional design is a procedural framework, the
systematic production for instruction. The model is for an entire course of instruction or for a combination of instructional models. Please view (Appendix A) for roles and task.

Pettenati, et al stated that the profiles (appendix A) are in relation to content and subject being taught. It is important to remember in this framework, there is a multi-disciplinary approach for the acceptance of this educational product, regardless of technology in this process. The roles and responsibilities have changed from the traditional teaching; therefore it is imperative for the creation of appropriate curricula and the development of new skills.

**New Professional Roles Involved**

For instructors to achieve effective student learning in their classroom, instructors must be secure in their new role and aware of their educational responsibilities to maintain effective learning outcomes while using technology. Some instructors may struggle with letting go of their old informative style teaching role, while learning to switch gears in becoming a technological facilitator of student learning. Instructors must have an acute understanding of how to re-direct their expertise when implementing pedagogy so that there will not be a mix match of student and faculty expectations. Students should be confident that their instructors are capable of teaching while providing excellent academic support via technology.

Pettenati, et al stated in the article, Information Technology and Staff Development, gave a general concern amongst professionals, seemingly that there is not enough suitable staff for the development and training of new skilled instructors within many institutions. Many institutions lack resources, and strategic planning for Network Learner Support (NLS) at organizational levels. Therefore, professional development needs are not being addressed. NLS requires partnerships and role participation from a wide range of academic staff and administrative support. The task is complicated, because it is not simple to categorize one
homogeneous group of staff that needs NLS training. Even though information and computing staff and new “hybrids” were identified, the greater area of interest was with the teaching and learning support position which promotes the learning environment. The process for continuing professional development, within the boundaries of NLS is useful when targeting a variety of staff with diverse backgrounds and specializations such as those in Appendix A.

Market Demand for New Professionals

Pettenati, et al stated new skilled professionals that show competent skills are easily identifiable in the job market. Universities and enterprises are looking for such skilled individuals who can demonstrate their qualifications in the Educational Technological fields. These fields represent the integration that is taking place in the job market: 1) Instructional Designer, 2) Educational Technology Librarian, 3) Web-based curriculum developer, 4) Head of Media Services, 5) Tutor. More and more demands are upon those who enter the IT in education certifying that they are qualified and skilled in interdisciplinary domains extending from managerial, to pedagogical, and technical. Because of the divers roles of technology there is a need to separate the instructional roles, to shape task and functionalities, and to provide efficient development has arisen.

Required Skills and Competences

Pettenati, et al stated, for networked learning to be successful the functionality of it must be shared by having a team in place embossed with complementary skills that cross the boundaries between libraries, computing services, between libraries and academic departments. Connecting these departments redefines and reorganizes the capability needed in supporting shared relationships through learning and research. The roles are changing within the development of network user needs, while new roles are evident and institutions are supporting staff and student, the importance of having information support for networked teaching and
learning is imperative to the library’s role. However, having information support issues which include continuing professional development that correlates the wider multi-disciplinary, and converging context of institutional support for networked learning, through educational technology domains, and the skills to be acquired for Network Learning Support (NLS) can be grouped in four categories, 1) Information Technology expertise: to enable development of open learning materials. 2) Information expertise: corresponds to the specialization in the use and evaluation of networked information resources. 3) Educational skills for the networked learning environment: is related to the pedagogical skills relevant to the facilitation of open learning communication skills, instructional design and tutoring, curriculum design skills. 4) Team-work and change-management: corresponds to particular understanding and skills required for multi-disciplinary team working.

Development Model for Professionals

Pettenati, et al stated that the central point is to present a modular training tool that is open and assessable at a distance, so that staff maybe trained in the activities of conception, it’s acceptance, delivery and evaluation of information technology-based courses. This model promotes two kinds of access to the training program. 1). Knowledge is accessible through a thematic organization, and adaptable to the individual progress and variations. 2). The second type consist of a "job" organization, this is let trainees explore the knowledge through a professional on-the-field practice. This schema of modular training anticipates the development of five kinds of professional specialized in the use of IT: 1) Teachers and Tutors, 2) Programmers, 3) Technicians, 4) Managers. The success of the program is based on formative modules in a sequential way. This program offers the acquisition of competencies in both domains (technical, pedagogical or management), or in a multidisciplinary domain. This module is obtainable to all participants and is organized to create a balance for on the field experience in educational technology field.
Summary

There are many challenges when re-designing an organization that puts new demands upon different departments when taking individuals out of their comfort zone which can cause uncertainty and resistance. Organizations and their epistemological beliefs, including their concepts of teaching and learning could find it difficult to adapt to the TELEFOR training modules model. This TELEFOR training module is an exceptional project, due to its diversity of courses. The courses are geared based on the participants’ background level and the courses are developed to create individualized pathways in the pursuit of learning educational technology. Any one that would participate in these courses would surely increase their knowledge and gain much technological experience.

Research dictates that professional development on this level is expensive, but worth the investment for universities who would want to increase their facilitators’ knowledge in implementing pedagogy and creating excellent learning environments that provides a framework of continuous support for instructors.

The University of Minnesota Duluth (UMD), established that their IT department professionals have acquired the ability and qualifications to teach pedagogy skills to instructors.

There was some indications that other believed that IT were not qualified nor is it a sound practice to try to integrate content, pedagogy and technology, based on what form technological knowledge should take, when thoroughly looking at its representation, how it is measured, and how it is reported upon.

Educational technology is here to stay, however, educators, and IT professionals will continue to have many barriers to overcome if universities do not provide funding to properly train facilitators with managing pedagogy via technology.
Appendix A

**WBT project development**

This appendix shows the relationship between the tasks (and their aims) to be accomplished in the Instructional Design model of the Web Based Training, with respect to the professional responsibilities involved. This gives an overview of the complexity of skills required for the successful performing of the project development.

Appendix A: Tasks & Roles for the Web-based Instructional Design

<table>
<thead>
<tr>
<th>Task</th>
<th>Aim</th>
<th>Responsibility</th>
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<tbody>
<tr>
<td>Analysis of client's need</td>
<td>Corresponds to the identification the explicit needs of the project, and the characteristics of the final product</td>
<td>Project Manager and Instructional Designer</td>
</tr>
<tr>
<td>Analysis of the final users</td>
<td>Users are classified on the basis of their characteristics, their background, etc. in order to choose the support, and the kind of technology to be used</td>
<td>Project Manager and Instructional Designer</td>
</tr>
<tr>
<td>Technical analysis</td>
<td>Definition of technical resources and skills available</td>
<td>Project Manager, System Analyst and Programmer</td>
</tr>
<tr>
<td>Design of the Interfaces</td>
<td>Build interfaces according to user centered approach</td>
<td>Project Manager, System Analyst and Programmer</td>
</tr>
<tr>
<td>Usability testing</td>
<td>Assess at different stages of the interface design and building process, the quality of the interfaces</td>
<td>Usability Engineer, Human Factor Expert and Cognitive Psychologist</td>
</tr>
<tr>
<td>Instructional design</td>
<td>Presenting the content in such a way to satisfy user's needs and relating to teaching methods and technologies used</td>
<td>Instructional Designer and Subject Content Experts</td>
</tr>
<tr>
<td>Creation of the media</td>
<td>Contents realization in the different media (text, audio, graphics, movies, etc.)</td>
<td>Instructional Designer, Media Designer and Programmer</td>
</tr>
<tr>
<td>Evaluation and Updating</td>
<td>Evaluation of the impact and the effectiveness of the educational system, assessment of the quality of the product, corrections and revisions</td>
<td>Teacher, Cognitive Psychologist, and Instructional Designer</td>
</tr>
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</table>

Examples, of professional roles which could be involved in the different development phases :

- Project Manager
- Cognitive Psychologist
- Instructional Designer
- Subject Content Expert
- System Analyst
- Media Designer
- Programmer
- Teacher
- Usability Engineer
- Human Factor Expert

Web Based Training site, [http://www.filename.com/wbt](http://www.filename.com/wbt)
## Instructional Designer Profile

<table>
<thead>
<tr>
<th>Responsibilities &amp; Duties</th>
<th>Qualifications</th>
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<tbody>
<tr>
<td>To provide vision, leadership, and coordination for the design and development of technology-based educational products, including World Wide Web sites for courses delivered on and off campus, extension and outreach educational products, and public information.</td>
<td>- Master's degree, experience in instructional design, the World Wide Web, distance learning, multimedia design, curriculum design, and adult and continuing education.</td>
</tr>
<tr>
<td>- To work collaboratively as part of a multimedia and Web/instructional technology applications development team</td>
<td>- Strong computer skills with an ability to work and design for cross-platform applications.</td>
</tr>
<tr>
<td>- To refine identified goals and instructional strategies, select and develop appropriate curricula, modules, distance learning products, and materials for the specific needs of target audiences.</td>
<td>- Experience in the use of instructional technologies and media such as linear and nonlinear video, the World Wide Web, computer-based instruction, teleconferencing, computer graphics and animation, presentation systems, and digital video and audio.</td>
</tr>
<tr>
<td>- Incorporate contemporary learning styles, teaching methods and techniques, and state-of-the-art instructional technologies into new curricula for credit and non-credit applications.</td>
<td>- Experience working in higher education advising faculty and staff on the appropriate use of computer-based programs.</td>
</tr>
<tr>
<td>- Provide leadership to the Web/ID team in the techniques and methods of developing curriculum and instructional materials, modules, and units.</td>
<td></td>
</tr>
<tr>
<td>- Help prepare estimates, budgets, and costs associated with Web/ID team projects.</td>
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<tr>
<td>- Assist in the analysis of new and emerging technologies for instruction, distance learning, and other institutional technology needs and potential applications.</td>
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## Educational Technology Librarian Profile

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<tr>
<th>Responsibilities &amp; Duties</th>
<th>Qualifications</th>
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<tbody>
<tr>
<td>- Assist faculty in integrating new strategies for teaching and learning using present and emerging information and instructional technologies (integrating electronic information resources into courses, including creating guides, tutorials, and bibliographies).</td>
<td>Master's degree, experience in higher education.</td>
</tr>
<tr>
<td>- Encourage, develop, and support faculty projects using multimedia and information technology in classroom teaching.</td>
<td>- Evidence of highly developed communication, organizational, and interpersonal skills and the ability to effectively convey complex technical concepts to lay persons.</td>
</tr>
<tr>
<td>- Assist curriculum development teams in identifying appropriate information resources, and participate in the creation and ongoing development of course and instructional Web sites</td>
<td>- Educational background or experience in teaching, training, and/or learning styles.</td>
</tr>
<tr>
<td>- Identify, evaluate, and recommend information technology software and hardware based on user defined needs and currently available technology.</td>
<td>Demonstrable record of experience in using a range of instructional technologies.</td>
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<tr>
<td>- Maintain an up-to-date knowledge of the techniques for assessing the impact of technology use on teaching and learning, and familiarity with current research on the effectiveness of various uses of technology</td>
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### Web-based Curriculum Developer Profile

<table>
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<tr>
<th>Responsibilities &amp; Duties</th>
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<tbody>
<tr>
<td>Consult with faculty and academic staff on the development of Web-based curriculum.</td>
<td>Strong academic background as well as technical expertise in the use of the Web.</td>
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</table>
| - Assist in the development of web-based courses and programs.                           | - Master's degree in instructional design/technology  
| - Conduct training for faculty and staff on techniques and methodologies of Web-based curriculum development. Review and make recommendations on current off-the-shelf Web development products. Administer the academic web site server. | - Experience as an instructional designer, educator, university instructor, trainer or combination of the above.  
|                                                                                         | - Knowledge of instructional design principles, distance learning methods, Web page design and production, visual interface design, multimedia authoring tools, and digital graphics, audio, and video production.  
|                                                                                         | - Experience in Web site/Web server administration                                                                                               |

### Head of Media Services Profile

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<th>Responsibilities &amp; Duties</th>
<th>Qualifications</th>
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| - Responsible for library and university instructional technology                         | Bachelor's degree and an advanced degree in a relevant field  
| - Management of staff in working with university automated information resources, the campus Interactive Video Network and university-wide instructional media equipment delivery, set-up, training and use.  
| - Assist faculty in identifying appropriate uses of technology in their instruction.     | - Experience in a highly automated, technically advanced academic environment  
| - Plan, formulate and publicize media policies Evaluate current and emerging information and media technologies in order to make sound recommendations to campus units on upgrading and adding media equipment. | - Extensive technical background in computers and media.  
|                                                                                         | - Practical experience with Audio Video, multimedia and computers in instruction. Knowledge of technical issues in telecommunications, library automation, digital media, video and general audiovisual operations. |

### Tutor Profile

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<th>Responsibilities &amp; Duties</th>
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| Provide advice to end users for the optimal use of the system and to aid the user to select optimal individual curricula. - Support for curriculum development and delivery; liaison and advice to academics in the information and communication resource aspects of curriculum design (available resources, etc.) | Master's degree and experience in education  
|                                                                                         | - Knowledge in learning process and style  
|                                                                                         | - Extensive technical background (creation of media, Web searching and publishing capabilities, use of distance learning technologies)  
|                                                                                         | - Patience  
|                                                                                         | - A sense of humor                                                                                                                               |

Web Based Training site, [http://www.filename.com/wbt](http://www.filename.com/wbt)
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