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

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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 seemly 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.

<u>Measuring Acceptance</u>

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

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

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

Appendix B

Instructional Designer Profile	
Responsibilities & Duties	**Qualifications**
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. - To work collaboratively as part of a multimedia and Web/instructional technology applications development team - 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. - Incorporate contemporary learning styles, teaching methods and techniques, and state-of-the-art instructional technologies into new curricula for credit and non-credit applications. - Provide leadership to the Web/ID team in the techniques and methods of developing curriculum and instructional materials, modules, and units. - Help prepare estimates, budgets, and costs associated with Web/ID team projects. - Assist in the analysis of new and emerging technologies for instruction, distance learning, and other institutional technology needs and potential applications.	- Master's degree, experience in instructional design, the World Wide Web, distance learning, multimedia design, curriculum design, and adult and continuing education. - Strong computer skills with an ability to work and design for cross-platform applications. - 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. - Experience working in higher education advising faculty and staff on the appropriate use of computer-based programs.
Educational Technology Librarian Profile	
Responsibilities & Duties	**Qualifications**
- 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). - Encourage, develop, and support faculty projects using multimedia and information technology in classroom teaching. - Assist curriculum development teams in identifying appropriate information resources, and participate in the creation and ongoing development of course and instructional Web sites - Identify, evaluate, and recommend information technology software and hardware based on user defined needs and currently available technology. - 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	Master's degree, experience in higher education. - Evidence of highly developed communication, organizational, and interpersonal skills and the ability to effectively convey complex technical concepts to lay persons. - Educational background or experience in teaching, training, and/or learning styles. Demonstrable record of experience in using a range of instructional technologies.

Web-based Curriculum Developer Profile	
Responsibilities & Duties	**Qualifications**
Consult with faculty and academic staff on the development of Web-based curriculum. - Assist in the development of web-based courses and programs. - 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.	Strong academic background as well as technical expertise in the use of the Web. - Master's degree in instructional design/technology 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	
Responsibilities & Duties	**Qualifications**
- Responsible for library and university instructional technology - 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. - 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.	Bachelor's degree and an advanced degree in a relevant field - Experience in a highly automated, technically advanced academic environment - 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	
Responsibilities & Duties	**Qualifications**
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

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