Facilitating a Collaborative Approach to E-Learning for Program Planners, Instructor Training and Technology Leadership

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Abstract: *Significant differences in expertise and attitudes towards e-learning technology are not uncommon between those who design the program and maintain the technology (program planners and technicians) and those who use the resources and technology (instructors and trainers). This wide disconnect between the two groups will often result in frustration and a poor quality product. Models of e-learning training and collaboration will be illustrated in three settings: higher education, secondary education, and the corporate level.*

Introduction

Dr. James Canton, CEO and Chair of the Institute for Global Futures, in 2006, lists the five factors that will define the extreme future of the world as speed, complexity, risk, change, and surprise. Each factor is affected by and driven by technology. The world we live in today and the outlook for the future is led by information technology, the Internet and technological tools, and a technology so advanced that few can understand what these tools will look like even a year from now. The rate of change will be so fast and blinding that every aspect of life will be affected. This rate of change will be complex and connected and the use of technology in the learning process will be ever changing, ever evolving. The competitive edge of organizations will depend upon making drastic changes as needed and the ability to make adjustments, to take risks with new ideas, and to provide new learning to meet the changes.

The National Research Center for Career and Technical Education (NRCCTE, 2003) reports post secondary education has responded to the creation of the world wide web since the 1990s and is now expanding the use of distance learning, most commonly called, "e-learning" by making educational programs delivered on the Internet accessible 24 hours a day, 7 days a week from almost any location in the world. Use of e-learning courses rose from 25,730 courses in 1994-95 to a 70% increase by 1998-99 (p. 2). The trend is increasing with the largest number of courses delivered by e-learning in the community and technical colleges. Universities and K-12 are quickly catching up and the corporate world has replaced much of its face to face (f2f) training with training through the web. The US government has already replaced f2f training for its IRS workers with an extensive e-learning delivery system.

Reasons given for using e-learning are that the higher education institutions have a better chance of reaching new students and increasing student access to the courses. Access is a very important factor for all institutions with cost effective delivery as the other important factor, but not as important as the access. Younger students also are expecting flexible delivery of their courses. A national survey by the Kaiser Family Foundation (2009) found

> that with technology allowing nearly 24-hour media access as children and teens go about their daily lives, the amount of time young people spend with entertainment media has risen dramatically, especially among minority youth. Today, 8-18 year-olds devote an

average of 7 hours and 38 minutes (7:38) to using entertainment media across a typical day (more than 53 hours a week). And because they spend so much of that time 'media multitasking' (using more than one medium at a time), they actually manage to pack a total of 10 hours and 45 minutes (10:45) worth of media content into those 7½ hours.

Adults 30 and under have always had access to computers and expect to use them in their learning process. This NRCCTE (2003) report expects to see growth in virtually all forms of Internet-based career and technical education courses and technology, with the delivery most likely to be one-way live audio or video. (p. 31)

A special report on the future of higher education and how technology will shape learning (Economist Intelligence Unit, 2008) concurs with the NRCCTE report that on line learning is gaining a firm foothold in universities around the world and that universities view technology and the impact in a positive way. But the report also acknowledges challenges in keeping up, in finding enough money for the technology, and the difficulty in finding faculty to adopt new technologies. The report says faculty generally do not understand how to use technological tools in their classes. While the new generation of "digital natives" come to the classrooms with an array of digital instruments, – phones, laptops, IPods and now iPads, they sit in classrooms that are fairly traditional, most without technology, and reflect philosophies and practices the same for the last 150 years. The use of a multi-modal classroom requires teaching to become outcome-based and student-centered, and this is a dramatic shift from traditional teaching, and one not readily accepted by teachers.

Students in a traditional classroom can easily sit in the classroom or auditorium and not interact with the instructor for a whole semester. E-learning requires a response from students and the instructor becomes more of a facilitator of learning than a teacher. The Economist Intelligence report says, "Homework, quizzes and projects will have to be designed in such a way as to require genuine thoughtfulness on the part of the student. That paradigm shift offers enormous potential for advancing educational quality." (p. 7)

Strother (2002) finds 85% of corporate trainers responding to her surveys said their trainees learned equally as well online as face to face and some believed the learning was more successful through e-learning. Trainees, trainers and management all respond positively to the convenience and flexibility of e-learning. A survey of 700 e-learners by ASTD in 2001 found 87% preferred e-learning during the work day and 38% preferred e-learning to face to face classroom training. Industry is examining return on investment (ROI) by e-learning and looking at more collaboration between trainers and learners to improve the quality of training.

While e-learning programs continue to grow in number and will hopefully improve in quality, many faculty have difficulty making the change or refuse to make the change. Technicians in higher education are usually quick to embrace the new technology in their institutions but are unsure or unable to help the faculty adapt to e-learning opportunities.

The result is often a disconnect that comes about as program planners, instructors, and technicians engage in e-learning. Technicians work with instructors and set up training programs that instructors can't understand. Instructors speak a language that technicians do not understand. Program planners attempt to coordinate collaboration between technicians and instructors, often with frustrating results. Instructors of higher education, K-12 teachers, corporate trainers and technicians all would agree e-learning classes and training delivered by e-learning have great possibilities in their institutions but the disconnect between the players trumps the effort. Keengwe, Kidd, & Kyei-Blankson (2009) examined the factors affecting adoption of information technology processes in higher education and recommend an effort be

made to finding effective ways to support, motivate and help faculty gain the knowledge, skills and abilities (KSA) to effectively use technology in their classes. (p. 23) Emerging research in support of e-learning is finding that faculty helping other faculty learn about best practices is increasing. (Puzziferro and Shelton, 2009)

Models for Successful Collaboration

Palloff and Pratt (2005) say collaboration forms the foundation of a learning community online, and if those providing the e-learning have a disconnect in preparing the e-learning experience, the learning community online will be faulty and unsuccessful.   They use the term "collaboration" to be defined as the 'heart and soul' of the online learning process. (p.6) The focus on collaboration by Palloff and Pratt is generally between instructor and students and centers around a constructivist learning theory. They suggest the instructor develops learning cycles or activities that build on each other to form the scaffolds for learning. The instructor and students work together to complete the learning process. This leads to the first model, the Palloff and Pratt (2005) model of online collaboration.   They acknowledge it takes a community collaborative effort to make the learning successful.

The Palloff and Pratt model indicates the community needed to produce on line collaboration that is comprised of more players than one would expect. The people involved are the students, instructor, and staff (which includes program planners and technicians). The model has the shared purpose of coming together of all players to make the on line course as collaborative as possible to enhance learning. There are a common set of rules to follow, the expectation that technological tools are used to support the collaboration and that everyone has access to the learning. As in any type of a collaborative learning situation, reflective practice, critical thinking and problem solving are emphasized in this model. Brook and Oliver (2002) suggest strategies used by faculty in graduate courses to develop a sense of a learning community for the online environment. The use of purpose for the course is a factor in building community as well as the use of problem based learning to solve problems in small groups and large groups on line. Students are given an opportunity to set up social dialogues and form a bond within the class.

In the study of faculty choosing to use technology by Keengwe, et. all (2009), found that a collaborative effort by the organization and leaders in the higher education institutions to support faculty is a common denominator for faculty who say they are willing to adopt various instructional technology tools. Factors such as cost, ease of use, flexibility and purchase of the latest technological tool have little impact on the faculty's willingness to use the tools. Dagada (2005) argues that in many cases, the decision by faculty to try or to use a new technological tool or not is not made on objective or rational grounds. Faculty are often influenced by the opinion of their peers and it is difficult to predict who will agree to use the technology. If faculty members are not confident in their ability to understand and use technology, they are unlikely to attempt to use it, unless another faculty member shows them how. Use of technology, such as e-learning requires faculty to not only learn to use the technological tool, but to fundamentally change the way they teach. Barriers to faculty implementing e-learning are lack of proper professional development and training and lack of support by the institution.

Puzziferro and Shelton (2006) studied faculty learning communities and said faculty find communication and contact with their peers the most important factor in learning about on line teaching. Faculty are comfortable sharing with each other and find the interaction with other

faculty and the discussions with other faculty who use e-learning to be the most valuable learning tool. Daffron and Webster (2006) used a web-based learning lab for faculty to learn how to deliver distance education and trained adult education graduate students, most who were faculty themselves, to mentor the higher education faculty, one on one.

A model used by many higher education institutions for faculty adoption of technology is the Concerns-Based Adoption Model (Hall and Hord, 1987). The model has 8 different levels of use of an innovation, from non-use, to orientation, preparation, mechanical use, routine, refinement, integration, and renewal. This model combined with Rogers, 2003, Diffusion of Innovations Theory, provides an approach for faculty to study and consider technological innovations and if supported by their institution and peers and technicians who can effectively describe the use of the innovation, multiplies the chances of the faculty member trying and using the tool.

Bonk (2001) established Multimedia Educational Resources for Learning and Online Teaching (MERLOT) website as portals for faculty to share their experiences in using online teaching. Faculty, 77%, shared their teaching ideas, while 64% discussed their problems with other teachers and 56% gave tips for classroom management. (p. 10)

The NEA (2000) found that although faculty members studied and became familiar with technology tools, this familiarization would not translate into proficiency or even use in the classroom. The need for training that is not generic but training that is targeted to using the tool to teach or to help with research or to demonstrate in the classroom is the kind of training faculty need. The best support for faculty training comes from other faculty or graduate students.

A study by Hardcastle (2008) of over 10,000 faculty in the community and college system of the state of Washington found most of the faculty used some type of technology in the classroom and were told about the technology by another teacher. Hardcastle says, "peer-to-peer networks are critical since that is the most important source of new information regarding technology." (p. 4) A peer to peer network for learning about technology is recommended by Hardcastle.

The Keengwe, et all (2009) study found faculty were most likely to use new technology if they had departmental and peer support, had a chance to work with other faculty who were using the tool and if there was a strong motivation to use the new tool. Another critical factor was a strong push by the administration with a proper framework or procedural guidelines. If the administration is serious about adopting technology, administrators had to relay the message. A third factor is the training and development. Faculty preferred training programs with other faculty demonstrating how the tool would be used in the classroom or another setting within higher education. Faculty wanted the opportunity to practice and have help readily available. The least effective training programs were a one-time 1-3 hour workshop. A final factor, the availability and quality of resources included up to date hardware and software, but also time to learn and strategize how to use the new innovation and technology support with technicians who understood how to use the tools in classrooms and could be patient and supportive.

The Keengwe, et all (2009) study recommends a strategic plan in approaching the use of technological tools in higher education. A thorough needs assessment is conducted by the administration of the institution as to the culture of the organization and how technological tools will best fit and be used to meet the need of all at the institution. Once the needs are known, a vision is created with strategic plans for adoption. The technology vision should be planned with at least 10 years into the future. Policies and procedures outlining standards and learning objectives must be aligned with the mission, goals and policies and procedures of the institution.

A gap analysis and a SWOT are conducted before any equipment is purchased and includes faculty and staff representatives. Communication about the vision and plan is known by all and training and development time is calculated into the cost and plans. A learning organization such as an institution of higher education has to also be a learning organization for its faculty and staff.

Gopalakrishnan (2006) studied the types of personal support used for technology integration in eight adult education programs. He then organized the results into three models for personal technology support of instructors. His results tell what types of personal support are critical for teachers implementing technology; what kind of support the administration should provide and what type of supportive infrastructure follows. Instructors and staff indicated support was needed with 4 types of personal support:

1. Personal encouragement and motivation - technicians used multiple approaches in helping teachers work through the technology; they started with large-group training, were sensitive to teachers who were intimidated or embarrassed and used personal encouragement and boosted the confidence of the teachers in small group training or one-to-one training sessions.
2. Instructional mentoring - technicians co-taught with teachers to demonstrate how the tools worked and were in the classroom to support any problems; graduate assistants or other graduate students also helped support the teachers
3. Routine technical support - the technicians offered routine support to fix problems but they also demonstrated new software and equipment and were available to teachers in their own offices; some had regular supportive conversations with instructors using new technological tools
4. Administrative technical support - this kind of support maintained networks, server maintenance, etc. to keep everything running smoothly; technicians would encourage teachers when working on their computers and help to motivate them to try new approaches
5. Teacher to teacher - as teachers became more techno-savvy and gained self-confidence, they were asked to share their experiences with other teachers; the support then changed from technicians motivating and supporting teachers to peer support and motivation.

The three models emerging from this study are (p. 47-49):

1. The Teacher Technology Coordinator - one person was appointed to lead and coordinate all types of teacher support – the individual had a strong teaching background but also strong technical skills and was good at mentoring and encouraging the teachers
2. The Department Teacher Leader - this person had already coordinated the programs as administrator, knew all teachers and their abilities and with technology knowledge, became a tech support as an extension of their duties
3. The Technical Specialist - with technology training and background, these specialists did not have classroom background, but they were able to give support of the technology issues

The study discusses the advantage of each of these 3 models and concludes the administrator of each program chose which model worked best for his/her program and it seemed that in smaller programs, the technical specialist was used more often with the teacher technology coordinator working well in any size program. Recommendations are given for various types of technological support with emphasis on all staff, technicians, administrators and teachers

working together in a team approach to advance their programs with the use of technological tools.

Developing a Plan for Collaboration in Higher Education

This paper illustrates one plan for facilitating both a collaborative and technology support platform between technicians, program planners, graduate students and faculty in a higher education setting.

Goals

The use of electronic (e) technology to enhance learning is e-learning. Often e-learning is narrowly thought of as the course management systems used in distance education but can encompass a wide range of technology. Classroom VHS players, Internet social networking and videogames are all e-learning technologies.

As new technology is introduced, early adopters often explore the exciting e-learning possibilities but most faculty find it difficult to stay informed on the latest innovations. A reasonably "level playing field" of e-learning understanding for all faculty in a department or institution is desirable.

The implementation of e-learning often carries the stigma of cost cutting and staff reductions. It is important for faculty to see actual peer-created best practices examples of how the efficiencies of e-learning increased resource creativity as well as the transfer of learning for their students.

Providing a forum for peer comments, advice and prompt replies to requests for assistance is important to develop faculty confidence as well as archived answers to common questions and guides to relating classroom resources and techniques to e-learning equivalents.

e-Learning Resource Center (ERC)

A modular, easy to use Blackboard based resource site is created for faculty.
Any electronic e-Learning tool that is used in the classroom today is illustrated and placed in the ERC.
Each quarter, grad students update and add new resources and host Blackboard forums.
Forums provide faculty with help, give an exchange of ideas and best practices by peers.
Each quarter, problems and solutions are recorded as a FAQ resource for the future and posted on the ERC.

Creating the ERC

The e-Learning Resource Center is created on Blackboard. (1st draft)
The ERC is reviewed by faculty/staff and revised. (2nd draft)
The 3rd draft of the ERC is reviewed by Dean and all program directors.
The ERC is made available as a 24/7 resource for all technical classes.

ERC Modules…

The modules are created for all file formats, all media, CMS's, web conferencing, social networking, etc.
They are updated and added as e-Learning technology evolves.
The modules will have a simple, consistent 'similar look and feel' format.
They are dual titled to reinforce that faculty needn't *re-do* but *adapt* their existing resources.
The modules will connect the classroom resource name to the e-Learning resource.
They will show actual examples of e-Learning resources and how they are delivered.
They will show how transfer of learning can be maximized with each e-Learning resource.
The modules will fairly list the pros and cons of each e-Learning resource.

Review of the ERC by Faculty

The Dean introduces ERC and briefs program directors on a strategic/use plan for e-Learning.
Program directors present ERC to their faculty and encourage self exploration.
Faculty explore and comment on e-Learning resources they find applicable for use.
Program directors create an e-Learning strategic/use plan for the Dean.

E-Learning Collaboration and Mentoring In Secondary Education

McKenzie (2001) created the "Technology Coach" program which is an effective model for collaboration when integrating technology in the K-12 classroom. The program goal is to help schools build capacity in technology use with their teachers through a peer coaching model. This model emphasizes coaching and mentoring relationships, teacher- to- teacher, no matter what the capacity of the teacher or the lack of knowledge about technology.

Teachers are matched with teachers who have similar skills and interest and often, teach the same subjects or levels. The coach can customize the information to suit themselves and content is taken from their curriculum or lessons. Everything is created for use in the classroom and it doesn't take long for the coach and peer teacher to become creative and supportive of each other. It becomes a win-win situation.

This win-win situation is further strengthened by the coach empowering his or her partner to make use of technologies that are used in their own classes. An expectation for this coaching exercise is that teachers supporting teachers and together they become more creative in their classrooms as they use technology.

According to Greene (2004) in a study for school-based staff developers and coaches, most of the research studies available present a promising view of the effectiveness of coaching as a venue for improving instructional quality. (p. 14) The study found that only about 5% of teachers apply what they learn in professional development activities to their classroom practice, but when they are coached along with professional development, the level of application increases to 90%.

An example of the coaching idea has been developed in Twin Rivers Unified School District, Sacramento, CA. The Tech Coach program is implemented district-wide and has been in operation since 2006. The district has two trained technology coaches, who are teachers, per high school and one per junior high. In addition, the district has the Secondary Tech Ex Program that provides cross grade level teams and technology support for all neighborhood strands. Team

meetings are held to discuss professional development, materials creation and scheduling. There is supervised development of the Tech Ex online resources which include website, coaching logs, Google groups, School Loop groups and a "mouse squad" of talented seniors who work on an hourly basis to support teachers who need assistance with their technology.

Programs like this that emphasize coaching and mentoring relationships and encourage the teachers to try technology tools because they feel supported; these are the same teachers who have previously been thought reluctant, resistant and technology challenged.

E-Learning Collaboration and Mentoring In Corporate Training

Thomas (2009) says two major world changes, moving from a manufacturing-based economy to an information-based economy and then the globalization issue of shrinking the world's workforce to compete globally, has led companies such as IBM to take a new look at the training of their workforce to remain competitive and to survive. IBM is among the majority of the companies around the world who has learned to use technological tools to train their employees, right in the workplace and this idea and model can be used in any learning situation.

IBM took a look at its classical and very traditional method of educating its work force of sending its employees away from work to specialized programs. But all too often, the workers would come back from these very expensive programs and retain small amounts of information, estimated to be about 10%. (Daffron and North, 2010). The Return on Investment (ROI) would rarely justify the cost of travel and time away from the job, not to mention the cost of the conferences and workshops.

IBM has an innovative learning model that integrates the organizational culture and familiar practices of the organization, sets up networks of experts to individuals and individuals to individuals' in networks of communities of practice. The knowledge, skills and abilities (KSA) resulting from these networks and innovative learning are chained together by technological tools and raises the bar of learning to new heights. And they take place on the floors of the company.

Thomas (2009) examines the IBM Basic Blue for Managers, a plan of a 4-tier training plan. The first tier focuses on learning from information that comes from texts and websites, audio and video presentations on line, and social networks through discussions and observations. Since IBM is a tech company and is an international company, all of these tiers of learning are internet–based. They have "Quick Views" a website of best practices that are podcasts, audio-taped presentations and videos. The second tier is a reaction to new knowledge in the form of games, simulations, and interactive modules. All are virtual and testing instruments for transfer to the job are a part of the second tier. The third tier is learning through collaboration. Discussions about best practices and new knowledge are held through e-teams in e-labs and web conferences. The fourth tier is collaborative learning and informal and often times is face to face. This tier takes advantage of the network, mentoring, coaching, and practitioner-based research with case studies and problem solving.

One would expect virtual learning from IBM, Google, Hewlett Packard, etc., but this model used by IBM is not that unusual in the corporate world today. Information or knowledge is gold in the corporate world that faces tough competition, often a world away. The downturn in the economy has often meant training budgets have been slashed, so smart trainers are turning to e-learning as the answer to get knowledge, set up networks for supporting the employees and to have global companies link their employees together to share their knowledge base and ideas

through virtual discussions. Adult educators can support these innovative learning measures by showing the trainers how to set up learning in this manner. The corporate world of learning will never go back to the old model of learning off-campus.

Implications of This Study for Future Practice

In conclusion, we have found if these players – the administration, the instructor, program planner, technician, trainer, and students all follow the strategic plan for implementing technology andwill work as a team, the e-learning course will be a successful collaborative effort. With interaction and effective communication, with critical thinking, a constructivist approach to learning, and a sense of community for all, the collaborative effort will be successful and learning will take place.

Summary

Learners are not the same as they have always been, and the methods of teaching that have worked for 150 years no longer are effective. With the factors of speed, complexity, risk, change, and surprise affecting the extreme future of the world, the learning process will be ever changing and ever evolving. The various models of e-learning given here and the examples of higher education instructor to instructor mentoring about e-learning, the K-12 teachers coaching other teachers, and the corporate change from traditional learning to innovative learning to keep competitive in the ever-changing global market, can change the way we teach and train. The world keeps getting smaller and we can benefit by continuing to transform and grow.

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