Identifying Key Issues for Institutions of Higher Education Which Seek to Implement Online Learning Programs

Introduction

Background

In a recent paper, we reviewed the explosive growth of the Internet as the vehicle by which college instruction is delivered: college courses that are delivered online through the Internet are currently estimated as growing nationally at 33% annually (Tallent-Runnels et al., 2006); while at the University of Central Florida (UCF), Web-only courses (W) have grown at an annual average of 67% over the last three years, and Mixed-mode (M, also referred to as "blended" courses) grew at an annual average of 54%. By contrast, traditional face-to-face (f2f) courses at UCF grew at an annual average of 26% for the same period (Center for Distributed Learning, University of Central Florida, 2007).

This author intentionally re-used the initial paragraph from the last paper because this is the third paper in a series looking at critical aspects that support online course delivery strategies for institutions of higher education. The first paper examined the technology and the associated technical skills a college faculty member should address prior to engaging in a project to design or deliver a course in an online format. The second paper examined the instructional design skills or best practices necessary for successful online course development or delivery. This third paper will seek to identify institutional support issues associated with higher education as they proceed to support online course delivery strategies and programs. Given the statistics in the first paragraph, the reader should recognize the need to review these three areas in detail as each area (i.e., technology and technology skills, instructional design skills, and institutional support) represents a significant challenge for any institution to face and manage.

For simplicity, we use Hirumi's (Hirumi, 2002) definition for e-learning to be equal with the concept of "online learning programs" as used in this paper. That is, online learning programs are those instructional programs facilitated through the use of telecommunication technologies, which can include electronic mail, electronic bulletin board systems, so called "chat" systems, desktop video conferencing systems, and the World-Wide-Web. We will assume that "telecommunication technologies" to refer to computer-to-computer communication technologies based on the protocols equal to or compatible with TCP/IP (i.e., Transmission Control Protocol/Internet Protocol), which is a vital part of the Internet. We bring this to the reader's attention because many relatively new applications, such as *Voice Over the Internet* (VOIP), *Video Conferencing*, *Web Safaris* (also called *Web Quests*) or *Application Sharing over the Internet*, are only possible with implementations of TCP/IP. Therefore, when referring to "telecommunication technologies," this author is including the many applications users commonly employ without realizing that they are using telecommunication technologies.

With the intense pressure to grow and deliver online learning programs, institutions of higher education must face a variety of issues and challenges. The question guiding this paper is, "What are the key issues for institutions of higher education seeking to implement online learning programs?" An answer to this question, even if it might be incomplete, will lead the reader to a better understanding of the range of issues any institution will likely be required to address, and thereby, at a minimum, provide an important perspective and some direction to planning such projects.

Connections

In 1993, Cole and Engeström (Cole & Engestrom, 1993) presented a model to describe areas of influence on people as they carry out work within a given social system. In 1999, this author modified the Cole and Engeström model as part of an effort to communicate the nature of influences on performers who would perform work in complex business environments. As Cole and Engestöm present a general model to fit the many characteristics of social systems of work, this author's model presented the situation of a particular corporation in San Francisco, California,

and how the development and implementation of an online performance support system will impact their organization. The point of the model was to illustrate how workers work with or are influenced by the variety of technology tools, the policies and procedures of the organization, the community of fellow users or workers, and the culture of the institution. Presented in this way, the complexity of a system of work is obvious. A college or university that promotes, plans, and implements an online learning program faces an equal level of complexity to that of the aforementioned corporation. However, the policies and procedures (i.e., the *rules* of the institution of higher education), the community of students, faculty, and administrators, and the culture of the institution are very different from the corporation.

As for the previous paper, this author employs a research technique described by Cooper in his book *Synthesizing Research, Third Edition: A Guide for Literature Reviews* (Cooper & Cooper, 1998). Cooper employs a research methodology to search for relevant work and encode the findings across the literature base to find common themes that would support answers to the central question on identifying the key institutional issues for online learning program support.

Method

Overview

Using Cooper's definitions, the methodology for this article is called a research synthesis, alternatively named *integrative research review*, or just *research review*. In Cooper's words, "research syntheses focus on empirical studies and seek to summarize past research by drawing overall conclusions from many separate investigations that address related or identical hypotheses" (Cooper & Cooper, 1998, p 3). The aim of this article is to use Cooper's methodology to perform a narrow search of the literature to derive the key issues institutions face or manage when promoting or supporting programs to develop and deliver online courses. To keep the quality of articles that will be used in this study high, and thereby satisfy the requirement that only expert opinions or experience will be used, we limit the search for material to only include articles published through peer-reviewed journals. From this point forward, the

methodology is specifically described in the steps taken to find material to answer the primary question.

As before, we take note of Cooper's advice and cautions. Cooper describes the process of research synthesis as consisting of five stages:

1) Problem formulation
2) Data collection or the literature search
3) Data evaluation, or the assessment on the quality of the literature search
4) Analysis and interpretation
5) Presentation of results

Cooper notes that "Synthesists… can make different choices about how to carry out their inquiries. Differences in methodologies will create differences in conclusions" (p 5). He then warns us that "…each methodological decision at each stage of a synthesis may enhance or undermine the trustworthiness of its conclusion or, in more scientific terms, create a threat to its validity" (p 5). In an effort to mitigate threats to the validity of findings that can arise through the process, appropriate steps in the methodology used herein are identified together with Cooper's general suggestions he outlines in the context of the stages of the research process.

Stage 1: Problem Formulation

The objective in this paper is to identify the key issues institutions of higher education will face and manage as they consider or engage in supporting programs to place college courses online. The primary question for this article is to derive through a literature search for what experts, or individuals with practiced experience placing or supporting online programs, identify as challenges, problems, issues, or concerns that in general reflect an institution's readiness to successfully support online learning programs. Cooper's suggestion is that "the researcher must decide what distinguishes relevant from irrelevant material" (p 5). For this project, a search was initially made using the search terms "institution" OR "organization" AND "college" OR "university"

AND "online" AND "learning" AND "prepare" OR "support" as key words in the Wilson Web database.

Stage 2: The Literature Search

Cooper's advice here is that since this stage involves "making a choice about the population of elements that will be the target of the study." Further, "…identifying target populations is complicated…" as researchers will want to "make inferences about two targets. First they want the cumulative result to reflect the results of all previous research on the problem. Second it is hoped that the included studies will allow generalizations to the individuals or groups that are the focus of the topic area" (p 8). To meet this requirement, this study narrows the targeted articles in ways detailed below.

As before, the first check on relevancy will be that any resulting article leads must be no older than a published date of 1998 (i.e., all relevant articles will be published from 1998 forward). Articles published therefore before 1998 were ignored. The articles must be from Peer-Reviewed Journals, be no older than 1998, and must address *institutional* or *organizational preparations* or *practices* by institutions of higher education, administrators, and college faculty in their efforts to support programs that develop and or deliver courses for the Internet (i.e., "*e-learning*" or "*online*").

Stage 3: Data Evaluation

Cooper states that "after data are collected, the researcher makes critical judgments about the quality of data" (p 8). From a list of approximately 20 articles, eight articles were identified as containing all the appropriate search terms, as well as met the other criteria of published date and published through a peer-reviewed journal. Finally, from the eight articles, seven were found to be the most promising in that besides meeting all the search criteria, they were authored to address various aspects of preparing for, or retrospective consideration of, supporting learning programs where the content would be (or was) delivered through the Internet.

Stage 4: Analysis and Interpretation

Cooper states that "during analysis and interpretation, the separate data points collected by the researcher are synthesized into a unified statement about the problem" (p 8). Also, Cooper considers that interpretation requires that researcher distinguish systematic data patterns. To meet this need, a three step process was developed.

1) *Create a coding sheet by which all the studies can be reviewed.*

   Using Sun Microsystems Open Office Calc (a similar program to Microsoft Excel – this program was selected due to limitations in Excel), a table was made with generic headings that permitted the author to capture the key content from the article, and in an associated cell, capture an identity marker of the article; this became the general coding sheet. (Note: an initial table was made where the details of each article were entered, and each article was indexed. The index then became the identifying marker for the article.) Then the coding sheet was used to capture any identified issues, concerns, problems, challenges, considerations, reflections, researched findings, or other discoveries focusing on the primary question. The data capture process looked for and included any conceptual definitions and operational definitions and placed these into the general coding sheet. Included with the data capture process were details of the selected article (i.e., title, author(s), journal name, published date, issue, page numbers, and journal type). Identified items were either paraphrased or quoted exactly when entered into the coding sheet, along with associated citation details.

2) *Identify themes (or categories) associated with each finding, and then in a new sheet organize the findings by themes.*

   Themes were extracted based on key words within the findings, or they were based on this author's subjective perspective of what the original article's author intended to convey. Or more simply stated, *what is the author really writing about?*

3) *Revisit the identified themes for duplications or instances where the themes might be assembled into a more concise organization.*

   By revisiting the themes for duplicates and by merging themes into an organizational structure of similar constructs, the entire table of findings was made more concise and directed. Each item was cross-referenced with the original index number on the initial (general coding sheet) table.

Stage 5: Public Presentation

For this stage, Cooper recognizes that the final stage is the creation of the reporting document that describes the investigation and completes the project. In this stage, he details the format and scope of the final document's specific sections. This article follows those guidelines.

Results

Source Materials

A list of the articles used in this study follows.

Table 1: Source Articles Used to Derive Support Issues for Online Learning Programs at Colleges or Universities

Count	Art. No.	Title	Author(s)	Pub. Date	Journal	Publication Format
1	1	Online Learning as a Strategic Asset: A Survey of Presidents and Chancellors	NASULGC-Sloan National Commission on Online Learning	Nov 2007	Alfred P. Sloan Foundation & NASULGC	Independent
2	2	Structure, Content, Delivery, Service, and Outcomes: Quality e-Learning in Higher Education	MacDonald, C. & Thompson, T.L.	Jul 2005	International Review of Research in Open and Distance Learning 6(2)	Peer Review
3	3	Increasing Access to Higher Education: A Study of the Diffusion of Online Teaching Among 913 College Faculty	Shea, P., Pickett, A., & Li, C.S.	Jul 2005	International Review of Research in Open and Distance Learning 6(2)	Peer Review
4	4	Navigating Distance and Traditional Higher Education: Online Faculty Experiences	Yick, A.G., Patrick, P., & Costin, A.	Jul 2005	International Review of Research in Open and Distance Learning 6(2)	Peer Review
5	5	Professional Preparation of Academic Technology	Albright, M.J. & Nworie, J.	2007	International Journal of Instructional Media	Peer Review

		Leaders for Higher Education			34(1)	
6	6	Online Communities of Practice: A Catalyst for Faculty Development	Sherer, P.D., Shea, T.P., & Kristensen, E.	2003	Innovative Higher Education 27(3)	Peer Review
7	7	Understanding Online Learning Through a Qualitative Description of Professors and Student's Experiences	Lao, T. & Gonzales, C.	2005	Journal of Technology and Teacher Education 13(3)	Peer Review

The themes that emerged from the research and review process seem to fit into three broad categories for institutions of higher education. These categories suggest a need for: 1) Institutional (or *Organizational*) Strategies, 2) Theoretical Foundations, and 3) Faculty Skill Development. Each theme category includes several sub-themes:

1) Institutional (or *Organizational*) Strategies:

    i. Is Online Learning Institutionally a Strategic Focus?

    ii. How is Online Learning an Institutional Strategic Focus?

    iii. Program Advantages

    iv. Program Disadvantages/Barriers

    v. Strategic Directions Needed

    vi. Infrastructure Development

    vii. Organizational Development

    viii. Technical Support

    ix. Faculty Development

2) Theoretical Foundations:

    i. Need for Theory Driven Research

    ii. Need to Develop Frameworks

3) Faculty Skill Development:

i. Technical Skills

ii. Instructional Design Skills

iii. Attitude Development

The findings for each theme and associated sub-themes follow.

1.i: Is Online Learning Institutionally a Strategic Focus?

For this category, the issue is whether or not online learning occupies a place of strategic focus in the minds of high level university leaders. These leaders' perception of strategic necessity is instrumental to the success or failure of online learning programs.

Earlier this year, the Alfred P. Sloan Foundation and NASULGC (the National Association of State Universities and Land-Grant Colleges) published the results of a survey submitted to University Presidents and Chancellors regarding the strategic nature of online learning at their respective institutions (NASULGC-Sloan National Commission, 2007). To the question whether these leaders see online learning programs as strategic for their institutions, these leaders responded in the following ways:

- 66.7% respondents note that online education is critical to the long-term strategy of their institution
- 40.5% of respondents note that online education is represented in the institution's strategic plan (NASULGC-Sloan National Commission, 2007)

Further, Yick, Patrick, and Costin (Yick et al., 2005) suggest that online program legitimacy can be derived from three major measures that portend credibility: 1) large student enrollment numbers; 2) accreditation; 3) scholarship and research.

1.ii: How is Online Learning an Institutional Strategic Focus?

For this category, the issue centers on how online learning might be strategic for an institution. The nature of the impetuses to promote and support online learning will impact the degree of

success for these learning programs. Therefore the theme for this category is the identification of where online learning fits into the strategic plan of the institution.

The study sponsored by the NASULGC and Alfred P. Sloan Foundation (NASULGC-Sloan National Commission, 2007) reported the following:

- 71.4% respondents link online education to "increasing student access"
- 61.8% respondents link distributed education to "growing professional and continuing education"
- 57.1% respondents look to online learning to "attract students from outside the traditional service area"

Yick, Patrick, and Costin (Yick et al., 2005) add that some universities adopt online education programs in order to remain competitive.

1.iii: Program (Online Learning) Advantages

For this category, the issue is the identification of advantages to pursuing and supporting online learning programs. The anecdotal evidence presented here represents a fairly narrow sampling and may not be the same for all institutions or all programs being supported.

MacDonald and Thompson (C. J. MacDonald & Thompson, 2005) found that:

- As regards e-learning program outcomes, a mindful weighing of benefits, drawbacks, and trade-offs is important
- Missing f2f (face-to-face) contact was an initial issue, but became less as learners increasingly understood the benefits
- As the program progressed, learners became aware of the ease with which to submit assignments, a reduction in transportation issues and costs, and increased flexibility
- As the benefits are obvious, it is also noted that the same benefits are dependent upon the course organization and efficiency of the instructor (i.e., responsiveness)

Shea, Pickett, and Li (2005) specify to a greater degree the advantages:

- Greater and higher quality interactions with students
- Increased convenience and flexibility for teaching and learning
- Better access to student populations and increased access for students to higher education
- Enhanced knowledge of educational technology
- Increased opportunities for professional recognition and research
- High levels of student learning
- Greater necessity and opportunity for more systematic design of online instruction and a corollary positive impact on student learning and on classroom teaching

1.iv: Program Disadvantages/Barriers

For this category, the issue is the nature of the perceived disadvantages or barriers to online learning program implementations or support. As with the preceding issue, the sampling for the data supporting this issue is narrow, and there may be disadvantages or barriers that exist that did not appear in the studies reviewed.

The NASULGC and Alfred P. Sloan Foundation (NASULGC-Sloan National Commission, 2007) study reported the following:

- 4% respondents note that online learning played no strategic role [at their respective institutions]
- 40.8% respondents note that "online courses cost more to develop" than traditional offerings
- 35.5% link distributed education to "greater faculty time and effort" being required
- 22.4% respondents note "a lack of acceptance of online instruction by faculty"

Shea, Pickett, and Li (Shea et al., 2005) argue that there are significant barriers to faculty who would become online instructors. Shea et al. point to the following:

- Inadequate compensation
- Ownership issues
- More work to develop and teach online
- Work applied to placing courses online does not count towards professional advancement
- Technical difficulties
- Inadequate training, support and the addition of new roles

1.v: Strategic Directions Needed

For this category, the issue is a focus on an apparent lack of direction and strategic support for institutions making decisions on online learning programs.

The NASULGC and Alfred P. Sloan Foundation (NASULGC-Sloan National Commission, 2007) study found that university Presidents and Chancellors feel there is a lack of strategic leadership regarding the development of online learning programs. Respondents identified the following:

- Knowledge of comparable institutions' strategic use of online learning
- Opportunities for executive-level sharing of models and experiences
- Information resources applicable to strategic use of online education
- Availability of leaders in the field to advise in strategic planning for online education

1.vi: Infrastructure Development

For this category, the issue is centered on institutional infrastructure. Infrastructure is not the same as organization. Infrastructure refers to the physical capital of the institution: in colleges or universities we commonly associate infrastructure with Physical Plant. However, computer and

networking services may not be part of Physical Plant, but they are part of the infrastructure. The issue themes in this category would seem to focus on a) the successful integration of technical and administrative teams; b) resource requirements to infrastructure support; c) new and evolving technologies and their potential integration, and the resource requirements necessary to provide support.

MacDonald and Thompson (C. J. MacDonald & Thompson, 2005) identify that a successful e-learning culture is dependent on the integration of delivery partners:

- Technical support and administrative staff
- e-learning design and facilitation teams
- Decision-makers who determine resource allocation and media

MacDonald and Thompson (C. J. MacDonald & Thompson, 2005) also point out that quality e-learning has costs: a significant investment in time and energy, and the programs must be acknowledged and supported. Further, securing resources is a constant challenge for universities that lack experience in finding and securing sustainable support.

Albright and Nworie (2007) remind us that the infrastructure at colleges and universities is now more complex. Technologies that must be administered include course management systems and their supplements, electronic portfolios, learning objects, digital content servers, wireless networks, mobile computing, voice and video over IP, personal digital assistants, assistive technologies, and electronic coursepacks. Additionally, there is version and upgrade management for applications (i.e., programs), operating systems, and server software platforms to maintain. Finally, there are emerging technologies in social computing, personal broadcasting, educational gaming, advanced cell phone technologies with academic implications, and context-aware environments and devices (New Media Consortium, & EDUCAUSE Learning Initiative, 2006) to integrate and manage within the delivery of services through the institution's infrastructure.

1.vii: Organizational Development

For this category, the issue centers on aspects of the organization, and how it fragments or grows, depending on the level of institutional support and focus. This issue also includes the nature of organizational change and the processes of adoption or adaptation: either there is individual or collective adoption of strategies to support online learning programs or there are readjustments made necessary by the new technologies that require changes to the organization. In the first case we are referring to the adoption process, and how single individuals can impede group progress. In the second case we are referring to the adaptation process, and how an organization must make adjustments to adequately reflect the nature of work, the skills and education necessary for getting the work done, the position and rank of key individuals in an organization, and how the organization or key individuals must function in partnership fashion or as a catalyst for adoption and change.

Shea, Pickett, and Li (Shea et al., 2005) refer to Rogers *Diffusion of Innovation* model (Rogers, 2003) as especially useful in characterizing faculty adoption and use of online learning. The diffusion of innovation model consists of six phases: 1) knowledge of innovation; 2) persuasion; 3) decision; 4) implementation; 5) confirmation; 6) reinvention.

Albright and Nworie (2007) point out that with the rapid growth of computer technologies, the World-Wide-Web, the Internet, and online learning, there has been a tendency towards fragmentation of instructional technology support functions among multiple units that provide campus wide services that do not have centralized coordination and leadership. Albright and Nworie (2007) further identify that the contributors to the fragmentation includes growth in units, such as academic computing, information technology organizations, academic libraries with new roles, continuing education and online education units, faculty development centers, independent service units devoted to digital technologies, and individual support positions created in academic colleges and departments. Yick, Patrick, and Costin (Yick et al., 2005) noted a similar fragmentation as the development process of online instructional content, for example, becomes “unbundled” in the shift from traditional classroom courses to online formats as efforts are

delegated to other professionals, including instructional designers, adjunct faculty, and technologists (No Author, 2004).

Albright and Nworie (2007) also focus on academic organizational evolution. They identify that current environments in higher education should offer positions at high academic levels to provide leadership in planning, implementing, and assessing academic technologies. Bates (1999) recommends that overall responsibility and leadership for academic technology should be positioned at the vice president level. This position should provide strategic leadership and direction for all campus academic technology applications, initiatives, and support services. The position should also provide leadership in operational and strategic planning and policy related to curriculum development, e-learning, and instructional technology initiatives, as well as actively promoting the use of technology in support of the educational and research mission of the university. Further, this position should strive to build partnerships with the faculty senate, library, information technology, faculty development center, and the distance/continuing education center. The position must ultimately become a catalyst for curriculum improvement and change across the university by building and sustaining relationships with faculty, chairs, and deans.

1.viii: Technical Support

For this category, the issue involves the nature of support: a) what learners do when support is inadequate; b) how support strengthens the critical element of online responsiveness-thus making the experience more interactive; and c) how the perception of support changes with time (likely due to evolving strategies to provide support).

MacDonald and Thompson (C. J. MacDonald & Thompson, 2005) identified that learners are concerned about the quality of technical support. In the absence of quality support, those learners were found to have organized and relied on a personal support network that included course facilitators, each other, and skilled persons from either work or home. These learners also indicated that responsiveness or quick turn-around on issues, questions, problems, and learner assignments is highly valued and indicative of a commitment to service, “An integrated approach

to service is an essential element of a quality e-learning experience" (MacDonald & Thompson, 2005, p. 17).

Shea, Pickett, and Li (Shea et al., 2005) found a different issue on the topic of technical support: they note that one of the most cited variables when discussing issues concerning quality in online learning is interaction, and high levels of interaction are frequently associated as one of the best aspects of teaching and learning online. Shea et al. equate this to that faculty, who are novice to online teaching and learning, can easily feel overwhelmed by increased levels of interaction. To help such faculty cope with increased levels of interaction, a support infrastructure is important. They sum up this issue with that "Technical support is... recognized as a crucial element in the success of significant online teaching and learning endeavors" (Shea et al., 2005, p. 17). Finally, they note that planning for adequate resources that are allocated to technical support is also critical.

Yick, Patrick, and Costin (Yick et al., 2005) placed their perspective at a higher vantage point. They noted that in businesses, there is a perception that barriers are indicative of the maturity of the organization in the application of online teaching and learning practices: "...the barriers of technical difficulties and support and organization culture and change become less burdensome when distance education becomes institutionalized or integrated in an educational institution's delivery structure" (Yick et al., 2005, p. 3). They perceive this as a paradigm shift that takes place as online learning programs mature, whereby the focus moves from a campus-centric model to a consumer-centric model, such that learners become less reliant on human mediated interactivities within an academic infrastructure.

1.ix: Faculty Development

For this category, the issue centers on the theme of faculty development. With the change of the instructional strategy from traditional classroom to online, some policies with regards to faculty advancement, compensation, and priorities have not kept pace with the rate of implementing online learning programs. The emerging themes would seem to be a) role of the practicing online faculty member; b) prioritization of focus, which is impacted by the level of effort required to

support online learning programs: teaching vs research; c) tenure and having efforts to support online learning programs be positively recognized in the review for tenure; d) release time and support.

Yick, Patrick, and Costin (Yick et al., 2005) found several issues on the theme of faculty development. Yick et al. begin with the view that the role of the faculty is more than just as an instructor in a university educational program; the faculty member is a generator of new knowledge. Scholarship increases can be brought about by using technology to enhance research efforts: “Interdisciplinary cooperation can be promoted and effectively incorporated into research proposals if made a core value from the start” (H.I. in Yick et al., 2005, p. 10). Some faculty view research as essential and not tangential, and that research is a core value that should be promoted by the university. “Conducting research is essential for the faculty working with doctoral learners and for the faculty's professional growth (Yick et al., 2005, p. 10). Yick et al. observe that there is a risk that without tenure, scholarship activities decrease. They identify a need for a different set of performance drivers, such as a stimulating, creative environment with promising incentives and collegial spirit of innovation (Ruch, 2001). Further, there remain questions regarding the rewards associated with online teaching and learning as part of the faculty's role at a college or university (Folkers, 2005). In a study that may now be outdated (and per this author’s research methodology should *not* be included here, but it is to present what seems to still be a prevalent issue for some institutions today), Wolcott (1997) found that faculty and administrators do not consider online teaching and learning programs as having a similar level of prestige as does research and scholarship. Promotion and tenure documents do not include online teaching and learning as activities that count towards tenure.

In a study by Ellis (2000) conducted at Pennsylvania State University World Campus, release time was found to be a major barrier to faculty participation in online teaching and learning. In addition, time spent toward developing online programs becomes a significant factor that detracts from activities that can lead to tenure. Faculty support programs should include faculty-to-faculty mentoring, whereby experienced online instructors provide guidance and support to first time online teachers or developers. And providing administrative support and other resources is

necessary to further encourage faculty to pursue and engage in scholarship. Yick, Patrick, and Costin (Yick et al., 2005) found that scholarship becomes a lower priority due to the day-to-day demands of teaching and dealing with learner issues in online education programs.

2.i: Need for Theory Driven Research

For this category, the issue is the lack of grounded theories to support the development of guidelines, best practices, or other advisories that will function as templates or aids in developing and delivering online instruction. While the anecdotes in this section present a model for developing quality online learning programs, the issue is whether this model will serve well, or whether other models (also based on grounded theories of learning) are needed; in either case, further research is indicated.

McGorry (2003) argues for theory-driven research into deriving the criteria for effective online programs. MacDonald and Thompson (C. J. MacDonald & Thompson, 2005) present the Demand-Driven Learning Model (DDLM) with five inter-related dimensions that describe high quality online designs: structure, content, delivery, service, and outcomes. Structure is the foundation for quality content, delivery, and service. Quality in the structure includes acknowledgment of learner needs, sound pedagogical strategies, creation of a positive learning environment, and regular learning evaluations. MacDonald and Thompson consider that quality delivery is about having high usability, being highly interactive, and containing effective tools. Content is defined to be "...comprehensive, authentic, and researched" (C. J. MacDonald & Thompson, 2005, p. 3). Quality service is defined by the strength of resources, administration, technical support, accessibility, and responsiveness. Quality outcomes are defined by reduced costs for both students and the institution, gain of personal advantages, and achieving learning objectives. MacDonald and Thompson (C. J. MacDonald & Thompson, 2005) restate the call for future research on the interaction of how technology challenges traditional notions of knowledge dissemination, who owns knowledge, power struggles over limited resources, and how to reconfigure previously entrenched organizational structures (C. J. MacDonald & Thompson, 2005; Shedletsky & Aitken, 2001).

2.ii: Need to Develop Frameworks

For this category, we are presented with one research framework on how to study quality issues associated with online learning programs. Only one framework is presented, and this framework is well developed and described. But this is only one framework, and there may be more in the literature.

The MacDonald and Thompson (C. J. MacDonald & Thompson, 2005) study of the Demand-Driven Learning Model (DDLM) model provides us a framework with seven dimensions to study quality in online learning programs: 1) evolving learning needs; 2) search for connection; 3) becoming an able participant in online learning; 4) valued interactions; 5) social construction of the course content; 6) integration of delivery support partners; 7) consideration of benefits, drawbacks, and trade-offs. Anticipating user needs requires strong online course organization with attention to social ambiance. Some learners will struggle, and others will be successful with online learning (Palloff & Pratt, 2001). Search for connection involves building and supporting learner communities that "foster a sense of working together towards a common purpose" (MacDonald & Thompson, 2005, p. 9) and bringing learners together in a face-to-face (f2f) format early in the course, together with posting an image of the learners, helps to create the sense of community (Bichelmeyer, Misanchuk, & Malopinsky, 2001; Song, Singleton, Hill, & Koh, 2004). Students prefer to interact with other students they know rather than with students they do not know (Vonderwell, 2003). By using synchronous communication strategies (f2f meetings, teleconferences, online chats, etc.), learners can develop working relationships they are more comfortable with for future asynchronous interactions (Vonderwell, 2003; J. Macdonald, 2003). J. Macdonald (2003) found that individuals help each other in multiple ways: group moderation, encouragement, and locating information; Wenger (1998) suggests that the strength in community originates from mutual engagement, joint enterprise, and a shared repertoire (C. J. MacDonald & Thompson, 2005).

3.i: Technical Skills

For this category, the issue is perceived self-efficacy with technology.

MacDonald and Thompson (C. J. MacDonald & Thompson, 2005) study found that a perceived incompetency with technology and an inability to assess personal technology skills as pertains to online learning programs become a source of anxiety for learners. They also found that initial frustrations from the challenges of the new learning environments dissipate with increased exposure and experience with the environment. Finally, they found that creating interactive online learning activities that appeal to the whole class was a significant challenge. Because self-efficacy and beliefs influence learner success in online courses, whether as a developer, teacher, or learner, there is a need to be precise in facilitating interactivities and to be careful in the selection of the type of activity.

3.ii: Instructional Design Skills

For this category, the issue would seem to center on faculty self-perceived abilities to be proficient in designing online courses. College faculty are masters in their topics and disciplines, but they feel out of their element and don't know where to start when creating courses that will be delivered in an online format. They might not trust their experience or abilities, so they require guidance. While there is an element of the attitudinal (i.e., relating to the affective domain) in these anecdotes, the more prevalent component is a focus on their level of confidence in teaching in an online environment. The derived anecdotes have the themes of a) systematic approaches to involvement with online learning initiatives or programs; b) a need for mentoring or guidance by experienced peers; c) a consideration of educational strategies.

Shea, Pickett, and Li (Shea et al., 2005) identify the issue on the creation of quality online learning programs: "...high quality online teaching and learning must be supported through systematic and well organized faculty development initiatives" (Shea et al., 2005, p. 16). This study "...implies that faculty development efforts that encourage instructors to participate in ways that highlight the opportunity to explore, learn, create, and apply their learning to their traditional teaching methods, may lead to higher levels of adoption and continued use" (Shea et al., 2005, p. 17). In addition, engaging experienced faculty who attest to the positive impact are more likely to positively influence faculty to adopt online teaching and learning programs. Veteran faculty who

present both the positive and the negative assist new online teachers to better understand the practice and implementation of online teaching and learning, and thereby are facilitative in Roger's diffusion model. Shea et al. observe that as veteran faculty demonstrate academic culture and values, which promote online teaching and learning, they further influence program adoption. Simple and flexible course designs, which encourage greater levels of interactivity between students and between students and faculty, are most likely to positively influence (or increase) interactions and faculty satisfaction. “Appropriate emphasis on interactive pedagogy, faculty training, technical support, and recognition of the time-investment needed to develop and deliver online instruction will advantage institutions that are wishing to increase access to their instructional programs, and will help ensure they are delivered in a high quality format” (Shea et al., 2005, p. 18).

3.iii: Attitude Development

For this category, the issue would seem to be attitudinal: the ability of institutions to adopt programs, such as online learning strategies, is often defeated by the resistance of those who would be most impacted from the change – usually the faculty. The process of reviewing the articles and recording the findings brought forth several areas, which superficially might be considered support issues, but on deeper inspection, the reader will find that they are more opinions (right or wrong, good or bad – but not based on studies or other researched evidence) of the faculty than of anything else. Therefore, these anecdotes to the attitudinal issue belong in this section. The derived attitudinal anecdotes center on the themes of a) levels of personal satisfaction and its origins; b) control of the educational experiences at a distance; and c) anxieties associated with change.

Shea, Pickett, and Li (Shea et al., 2005) found that for faculty who perceived teaching and learning online was a learning experience for themselves, showed a greater tendency to report positive outcomes, such as higher levels of satisfaction, increased likelihood to teach online again, and more likely to recommend online teaching to colleagues. “Support provided to faculty in the training cycle affords opportunities for reflecting on developing and teaching online courses

as a learning experience" (Shea, Fredericksen, Pickett, & Pelz, 2004). Conversely, faculty who reported that more time is required for developing online courses also reported a higher level of satisfaction with courses they had just finished delivering. Interestingly, time considerations do not seem to influence significantly levels of satisfaction with online teaching (Lazarus, 2003). There is small evidence that faculty who teach within Math, Science, Humanities, Business, or Professional Development are more satisfied than are their peers in the Social Sciences, Art, or "other" categories.

There are concerns regarding the ability to track reliably learner's progress at a distance (Folkers, 2005). There is a perception held by some faculty that online education is "diluting the quality of higher education" (Yick et al., 2005, p. 7). Criticisms regarding online teaching and learning seem to stem from a lack of understanding, knowledge, and information about online education.

Some institutions harbor a sense of elitism, and faculty fear that technology will bring about change that will affect their jobs: "...technology often challenges the status quo, bringing about anxiety and fear.... Change is sometimes painful" (Yick et al., 2005, p. 8). "It is essential... that teaching assignments to online course development and teaching start with those faculty members who are intrigued and receptive and based on this study's findings, the 'bring along' effect may soften resistance" (Yick et al., 2005, p. 13).

Discussion

This study identified 14 institutional support issues that impact online learning programs at institutions of higher education. These 14 issues can be placed within three general categories: 1) Institutional (or *Organizational*) Strategies, 2) Theoretical Foundations, and 3) Faculty Skill Development. Within each of the categories is another level of categorization that can be useful in the identification and placement of issues within the complex operations of the institution. The first steps in resolving problems or issues is to be able to define it, which involve identifying the problem, followed by determining its nature (McNamara, C. MBA, PhD, 2007). The temptation at this point is to draw from the data and begin planning solutions to mitigate these issues. Doing so is likely to be premature. While the final goal is to be able to properly plan to execute successful

online learning programs at colleges or universities, there also remains additional research to be conducted. The intent of this study was to *identify* the top issues. Knowing the top issues will provide direction for additional research into correctly ensuring we understand the parameters of the issues, and then to conduct research into identifying mitigating strategies. The results of this study became quite extensive, and so to keep this article on track and simple, the remainder will focus on areas of strength, areas to improve, and areas that should have additional, extra focus.

Areas of Strength

The issues identified in this study have a strong likelihood of being correct. The basis of this statement comes from the rigorous method to derive them and from the sources of authorship they originated. The categorization of the issues is useful. Breaking the issues into different categories will more easily permit future studies and research to be well-directed, as well as the follow-on plans to control or mitigate them. The data within the findings is sufficient to serve as a crude early warning system for institutions already involved with online learning programs. Program managers might use these findings to test if the issue is resident in their institution. Similarly, program managers might integrate the findings into planning sessions for new programs to support online learning.

Areas to Improve

The sampling of research data can be larger. The data derived does reflect what some leaders in the field are saying, observing, or researching on issues in this topic, but these findings should only be considered as indicative, not conclusive. The categorization structure described in this study might be further simplified. The discussion should include a deeper treatment of how the findings should be assimilated into planning strategies and future research.

An Important Area of Focus

Follow-on research into identifying strategies to mitigate each issue is needed. Research into the largest issue in order to find data and solutions that ensure online learning programs are financially, operationally, and pedagogically good investments that serve the mission of the

institution is indicated as being very important. Institutions need effective timelines to review, revise, renew, or release (4Rs) their learning programs. Change is a major factor in this practice, as it originates not only from the constant evolution of technology, but people, organizations, and educational programs must also change to meet the needs to the audiences they serve. Programs need to be *reviewed* to determine whether they meet the needs for which they were designed. These programs might require *revision* to adjust for small changes to retain their usefulness. Some programs might be contained within a contractual agreement that might need to be *renewed* if the outlook is positive that the program continues to serve its purpose, or they might need to be *released* and an alternative program selected in its place.

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