Building Community, Linking Islands:
A Distance Learning Model from Hawaii

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Abstract: While online learning is a relatively new domain with few research based models, results from previous studies can be used in program and course design to provide a foundation for success. Tools and strategies, when carefully aligned and informed by research findings, can support high quality learning and a strong community of learners. A case study is presented that details tools, strategies, and student feedback about an online educational technology graduate program at the University of Hawaii-Manoa linking a professional community in the Hawaiian islands.

Introduction

Online courses and programs, many relying on interactive communications-based tools, have proliferated in the last ten years (Dede, Whitehouse & Brown-L'Bahy, 2002; Dede, 2004; Fletcher, 2004). However, although teaching and learning is increasingly being delivered via communications-based technologies such as the Internet, researchers lament that there are few comprehensive or programmatic evaluations conducted in the area of online delivery (Belanger & Jordan, 2000; Farrell, 2001; Harper, Hedberg, Bennet, & Lockyer, 2000; Jones, 2000; Marshall, 1997; Phipps, Wellman, & Merisotis, 1998; Schwitzer, Ancis, & Brown, 2001). Researchers also point out that even those studies that actually do evaluate online learning fall short of providing conclusions more significant than merely anecdotal evidence or lessons learned (Borland, Lockhart, & Howard, 2000; Phipps, 1999).

Early adoption of online learning tended to focus on the transference of face-to-face methodologies to technology-based ones. Relatively little agreement regarding online

pedagogic strategies, existing technologies, and credible design for online learning could be found in extant literature (Harasim & Stephen, 1996). Johnstone (1997) attempted to define "what are the instructional design principles that make distance learning most effective" (p. 55). She argued persuasively that a critical component of any tele-mediated distance education program was its design. Yet she wondered whether such programs were actually designed and whether those designed were designed well.

For precisely the aforementioned reasons, the Department of Educational Technology at the University of Hawaii at Manoa decided to adhere to research-based principles and strategies when designing and implementing its own communications-based, online program, the Online Masters in Educational Technology (OTEC). Despite limited rigorous research that analyzes interactive online programs, some does exist that helped inform the design model for the OTEC program. In addition, the faculty design team for OTEC decided to use the design and implementation of the program itself as a research study, hoping to add to the body of research. This paper is a first report on the design and initial implementation of the University of Hawaii OTEC program, focusing on the development of the research based model and initial evaluation from the first student cohort. A commitment to building a learning community supported by multiple tools and mixed instructional strategies has resulted in a successful program structure as indicated by initial evaluation data.

A Program Founded in Research

From the beginning, research guided the OTEC program's design at both the process and structural levels. Preliminary research in the field of online learning from earlier studies and programs provides promise for design to ensure quality online programs. When reviewing existing studies, some consistent recommendations emerged from the research and evaluations that provided a foundation for OTEC development (Blakeslee, 1998; Dede, 1996; Dede, Whitehouse, & Brown-L'Bahy, 2002; Belanger & Jordan, 2000; Groff, 1996; Harper, Hedberg, Bennet, & Lockyer, 2000; Menchaca, 2004; Schwitzer, Ancis, & Brown, 2001; Yoder, 2003).

Table 1: Foundational Recommendations

1 Technology tools in distributed environments should **appeal to multiple learning styles** of students. Critical tools include: synchronous environments, asynchronous environments, and web-based content. Technology tools can enhance learning, creating an environment often superior to traditional ones.

2 **Appropriate strategies are crucial for ensuring tools are engaged optimally** in distributed environments. Appropriate strategies include: processing content, discussing content, problem-solving through collaboration, reflecting, and building a community of learning. Designers must consider which tools work optimally with which strategies.

3 **Face-to-face interaction is crucial for establishing a community of learning**.

4 **Learning in a social context** is crucial to the success of online learning.

Collaboration in Program Design

As our research indicated, the Online Masters of Educational Technology was designed collaboratively to ensure a quality program that was sustainable and could grow over time. All faculty members within the Department were included in the development process at multiple levels, including program design, curriculum design, administrative approval, accreditation, and program evaluation. The OTEC program was tailored to prepare practitioners who use educational technology in innovative and effective ways for organizing teaching and learning processes, building on the experience of an existing residential Masters program with a long history at UH.

As one of the graduate programs offered by the Department of Educational Technology, the OTEC program was specifically designed for adult students at a distance from the UH campus. Creating a program that would link the island populations in Hawaii was critical as there are very limited opportunities for students who live outside the island of Oahu (the location of UH-Manoa) to earn advanced degrees unless they are able to relocate for their graduate studies, thus precluding many working adults.

In fall 2005, a faculty sub-committee for the proposed OTEC program presented a proposal to the entire department for discussion. After subsequent revisions, the proposal was formally approved by all faculty members at a department meeting. The proposal was sent forward through UH's institutional approval process, and finally, the proposal was reviewed to ensure articulation with accrediting guidelines. With program approval pending, recruitment began in early 2006. In record time final approval was received in spring 2006 and initial applicants were reviewed.

Establishing a Cohort

Based upon the research, the OTEC program was designed as a hybrid program that includes limited but required face-to-face (F2F) sessions in the first semester of study. Students are part of a cohort taking core courses together to build community and professional support systems. Elective course schedules are flexible to meet individual needs and interests. To foster community-based learning, the program begins with a mandatory 3-day weekend retreat as part of the first required core course. Students who cannot attend the retreat are not able to participate in the program.

The program was formed with the goal of furthering the University's mission to serve the state as a whole and with the College of Education's goal of improving teacher quality at the
K-12 level in Hawaii. At the same time, we wanted to build a cohort that had a mix of participants as our experience indicated that such diversity furthered learning as students benefit from the broader perspectives of their peers. With the possibility that there would be more qualified applicants for the program than could be admitted, we used these premises in developing admissions criteria to ensure a fair admissions process. In fall 2006, the first cohort was admitted with 22 students, of which only two were from Oahu. The other 20 students represent three islands: Hawaii, Maui, and Molokai.

Resources critical to the success of the program are generated through tuition and fees. Because the OTEC program is run through the University's Outreach College, a portion of fees is recaptured by the Department to cover support and administrative costs. It is important to note that an appropriate revenue stream is crucial to the success and sustainability of online programs.

Delivery Tools and Technologies

Also based on research, the program incorporates multiple tools and strategies. There are multiple new and exciting technologies that can be used in online instruction today. An important consideration when selecting distance learning (DL) technologies is the potential impact of the DL technology used on the learning experience.

The theoretical framework that informed the design of the delivery of the OTEC program was based on social constructivist learning theories (e.g., Vygotsky, 1962) and cooperative learning in an effort to minimize transactional distance (Moore, 1973; Moore & Kearsley, 1996). The constructivist model of learning assumes that knowledge is not transferred but created (or recreated) by the learner through conversation and collaboration, and the instructor acts as a facilitator (Jonassen et al., 1995). Taking this theoretical framework into consideration, the instructional technologies selected for this model of learning included computer-mediated communication technologies, both synchronous and asynchronous, that facilitate interpersonal communication and promote interaction and collaboration among learners.

One of the most important information dissemination tools for the program is the OTEC web portal (http://etec.Hawaii.edu/omed/index.htm) which serves as a gateway and single point of access to information about the OTEC program. Students can access comprehensive information about the classes, schedules, and other student work at the web portal. To help disseminate information to OTEC students in a timely and efficient manner, an email list (omed1-email@Hawaii.edu) was created. All students and instructors involved with the OTEC program are subscribed to this email list.

Additionally, the WebCT course management system (CMS) allows instructors to present information to students and provides students with a virtual learning space. To facilitate cooperative learning, students can use the different collaborative tools in WebCT such as e-mail, asynchronous discussion board and synchronous text chat. The Educational Technology Department also supports Moodle, an "Open Source" CMS. Although there are significant differences in the user interfaces of the two CMSs, they offer many similar features in support of learning and course administration that include, but are not limited to, content presentation tools, communication tools, assessment tools, and grade books.

For students to learn from each other through dialogue and conversation in an online environment, it is imperative that an appropriate infrastructure is in place to facilitate their communication needs. In addition to the communication tools provided by WebCT, students can also communicate with each other asynchronously using their UH e-mail accounts.

Collaborative learning is engaged learning in which collaborative team members work on activities to help them develop shared meaning-making. Emphasis is placed on team members communicating with each other and as such, synchronous communication is vital for group collaboration. OTEC students are encouraged to download and use Skype (http://www.skype.com), a free Internet telephone service using voice over Internet protocol (VoIP) technology. Students are able to use Skype to make high-quality audio "phone calls" over the Internet using their computers, at no cost, with proper input and output devices such as microphones and headsets. Skype allows conference calls for groups up to five people, text messaging, and file sharing.

OTEC instructors also have access to another synchronous VoIP technology, the Elluminate Live! web conferencing system (http://www.elluminate.com), which allows live instruction over the Internet through the use of two-way audio, direct text messaging and a shared, interactive whiteboard. Cross-platform and band-width friendly, the Elluminate Live! Web conferencing system enables students and instructors to communicate with each other using a standard microphone connected to their computer, making it an excellent tool for whole-class synchronous sessions. Elluminate facilitates sharing applications; instructors can call up any software application: for example, a Word document. This can be shared and worked on collaboratively live by the class. Elluminate supports methods such as lecture, student recitation and presentations, small group discussions, and shared web tours or video streams. Elluminate sessions can be "recorded" so students are able to review the material on the Internet at any time after the synchronous session.

Leveling the Playing Field

While students admitted to the OTEC program are uniformly interested in the use of technologies in educational environments, their skill levels are varied; not all entering students can be assumed to be technology experts or even proficient novices. A key to the success of using the technology in the OTEC program was making sure that all students were able to use the selected tools effectively and independently which was accomplished by using time for tool training during the initial face-to-face retreat. As a result, during the first semester the goal was not to have the most innovative and experimental technologies but to have a stable and known tool base that provided affordances for multiple learning styles and teaching strategies. Additional technologies will be incorporated as students build their skills, not just technically but also as distance learners who are comfortable working in online environments. Students are encouraged not only to learn at a distance, but to reflect on that learning so that there is a strong process component to the early cohort experiences. While a few students had taken an online course, the majority were new to online learning and admitted to nervousness at leaving the familiar F2F learning that had been the hallmark of their many years in education.

In its first semester in fall 2006, the cohort participated in a five-week course subtitled "Learning to Learn Online." The course began with a required three-day, face-to-face session at UH-Manoa, continued with online assignments and interactions, then ended with a second face-to-face weekend session. As one student noted in an end-of-course evaluation:

> It was a good introductory course that had a very manageable pace. I think this is necessary when starting out and bringing so many new users of technology on board. It is good to get everyone on the same page and comfortable with the tools before we move forward in the program.

While covering content on the background and foundations of educational technology, much of the course also focused on the process and skills of online learning and student reflection on their own uses of technology in education as both learners and educators. This metacognitive technique promoted a deep understanding of the issues and the affordance of technology in education, whether in online or more traditional classroom settings.

Design from a Student Perspective

While preliminary at this point, the results from the course evaluations of the initial OTEC cohort indicate that the design considerations have established a solid foundation for learning and community, and that the mix of tools and strategies worked despite the diverse learning styles and uneven previous experiences with technology and online classes.

Students adamantly support the face-to-face sessions as the basis for establishing community (recommendation 3). While admitting that many had difficulties scheduling this into busy adult lives, the comments not only were positive for the experience, but insistent that this not be omitted for future cohorts. There was a common recognition that this was a key to creating a sense of cohort and establishing a comfort zone for the learning experiences. Learning content happened, but process was initially far more critical. For example, one student noted:

> This course I feel was successful in bringing together a diverse yet commonly driven group of very busy people. You brought us F2F which is important especially for us first online learner people. We like to know who's out there, what they look like, sound like and yeah, sure, what they smell like, what the hell!

Even the more practiced online learners were supportive of the process, and overall the student comments were focused on the experience of meeting each other and the instructors. Technology was less critical than the social connections (recommendation 4).

> I really enjoyed the first f2f meeting. I felt that it helped to orient me and get to know the people I'd be working with. Without it, I don't think I'd have such a vested interest in the group or the people as individuals.

While the foundations for community were established in the weekend F2F, the students indicated that the mix of tools and strategies used for the five-week online class activities both promoted their learning and the ongoing sense of community. While different students had specific tools or activities that they thought were more effective for their own learning, they uniformly recognized that a mix of synchronous and asynchronous tools were critical to maintaining community (recommendation 2). For example, one

6

student who liked independent study using readings and online reflections through WebCT also liked the ability to interact in small groups using Skype or as a class in Elluminate to be able to bounce around ideas and get immediate reactions.

> WebCT discussion was something special for me. Digesting assignments, then reflecting with the written word is invigorating. I enjoyed reading the posts and the different [points of views]….Our Elluminate sessions worked on pulling us back together almost like a cheap f2f meeting. The running commentary on the white board added an extra dimension, like reading minds. The "one-at-a-time" [microphone] works and I liked the feedback icons.

Noted another on the tools and the strategies supported:

> Strongest I think was the Elluminate and Skype sessions that allowed for more personal interactions. WebCT discussion allowed for interaction and posting on our own time.

Small group work was also positively reviewed, achieving an important goal for the OTEC designers, who recognized the research based power of teaming for learning but at the same time, the often negative reception to this strategy by busy adult students who find it difficult to match schedules and efforts. Again, tools such as email, Skype and group WebCT discussions were noted as a key to making the small groups work online.

> Skype worked for my group. We had no problems and used it successfully. My team and I communicated a lot and I think Skype really helped with this. Previous teams I've worked with were less in contact. I enjoyed the teamwork and learned a lot.

The link among tools, strategies, and diverse learners was also recognized by the students themselves. What is clear from the various comments is that the OTEC design was successful in meeting the needs of learners who have multiple learning styles, diverse educational experiences, and varied technical skills. Students recognized that the diversity existed and were able to accept the differences, supporting the underlying constructivist framework.

> The OMED program has allowed me to make connections and ties with people who are very knowledgeable about all different specific areas, such as Hawaiian studies, computer technology, all different aged teachers with different philosophies. Our connection allowed us to build a community of practice where we are able to talk with each other in different collaboration situations, Skype, Eluminate, WebCT discussion boards, on the phone, and while we are in complete different areas of the state. When we work together not only do we learn about the specific project but even experiences one another are having with whatever their locus of control is. This is one of the major ways that I have changed is through learning from each other in this cohort.

Students not only indicated that they had learned the content, but were excited about applying that learning within their own professional contexts. Process and community are key to the initial learning, supported by appropriate tools and strategies.

> The face to face was indispensable. I find it a bit of an oddity that in an on-line course, the one factor that everyone seems to agree upon is the non on-line needs of humans to connect with one another. I think it was […] that had mentioned that this was something worth fighting for…I agree… the recognition that we're not all that different after all. For me, that is the connection…folks that are working hard, some of us with families, some of us with dogs, but all of us pushing the envelope in search of something with additional utility in our lives.

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