A Strategic Administrative and Technological Support Model for an Innovative Undergraduate Public Health Minor

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Abstract

This article presents A Strategic Administrative and Technological Support Model for an Innovative Undergraduate General Public Health Minor (GPHM) offered within a college of public health as a combination of in-class and online courses. The Offices of Academic and Student Affairs (OASA) and Educational Technology and Assessment (ETA) work together to offer online teaching and learning services to faculty and students through online academic programs and in-class academic programs managed through Blackboard. For example, OASA assists with faculty assignment, orientation, and training along with the development of course scheduling, marketing the GPHM and advising students. ETA assists in the design, development, implementation and evaluation of all online courses. Faculty content experts work in conjunction with the instructional designers to create and format interactive online content. Innovative technologies such as pod casting, streaming media, and narrated presentations are used in content delivery. ETA is also responsible for faculty development to prepare faculty to teach in an online environment. Moreover, technical problems reported by students are logged and addressed within a 24 hour period, 7 days a week. Lastly, evaluation data focused on the successes and challenges related to the model and GPHM are addressed, followed by, directions for the 21st Century.

Key words: *Online Learning, Distance Education Administration, Public Health, Undergraduate Education, Program Administration.*

Introduction

According to the United States Distance Learning Association, e-learning was initially presented in the early 1990s.[1] Today there are over one billion worldwide Internet users with expectations of reaching the two billion mark in 2011. A number of higher education institutions have realized that to remain competitive in the market, they must invest resources in the development of well-planned distance education programs. Based on supply and demand data, it follows that the world of online learning will continue to rapidly evolve in the coming years.[1] The number of online course offerings in the recent decade has increased dramatically. Higher education is embracing the online medium to offer highly interactive, engaging and varied course offerings, degree programs and certificates. The legitimacy of online instruction continues to grow with students demanding accessible and convenient online offerings,[2] because the Internet is the fastest and easiest way to collect and disseminate information independent of location.[3]
From an economic perspective, the Distance Education Training Council reported fewer lost work days, and less travel and lower living expenses for students utilizing distance education versus those who utilized traditional education programs. The flexibility of distance education is an important benefit of online learning.[4]

As online learning evolves, systematic program planning is needed to moderate and control its growth.[5] Essential program planning and administration of online programs can lead to effective models that allow both students and instructors to interact efficiently. Today's generation of students seek high levels of interaction, stimulation and have the ability to multi-task as they learn.[6] Although individual differences exist, net generation learners demonstrate confidence in online environments including Chat, Facebook, or Flicker. Students trust the information and individuals they encounter online.[7]

To accommodate the needs of this net generation, instructors must learn to adapt to technology and the educational challenges of keeping these students engaged in active learning.[7] Furthermore, student diversity issues and how these may influence students' information literacy skills and new pedagogies such as active learning, resource-based learning, or inquiry-based learning are educational challenges.[7] According to Diane Oblinger, in her book, Educating the Net Generation, students today and in the future expect teachers to be comfortable and skilled in using these technologies.[6] Consequently, the Internet has gone from being an information seeking source to a place where information is jointly created. Users are not limited to receiving information—they can comment, collaborate, and create their own content.[7] Similarly, today's users are building the web collaboratively with wikis, blogs and online journals[7] to instantly share knowledge and promote the building of online learning communities. It is important to recognize and address concerns of the institutions, faculty and students when implementing online learning.[8] As higher education institutions build distance education programs, it is evident that these programs require a significant investment of time and resources. Students' distance learning experiences are often shaped by the quality of the services that support the educational process.[9-11] As discussed below, three support components that are key to the program's success are administrative and organizational infrastructure; faculty readiness and preparation in teaching courses online or in a blended format; and sustainability of technology services.

Administrative and Organizational Infrastructure

Evaluation indicates that a comprehensive administrative and organizational infrastructure is a key factor in designing and implementing a successful distance education program that includes high student retention rates.[5, 10, 12] For instance, Blackboard has proven to be the most user-friendly technology that efficiently enhanced interactions between students and faculty, management of online courses and storing performance data for enrolled students.[5] Data also identified several factors that contributed to high satisfaction among faculty such as an orientation training manual, learning workshops that focused on an overview of distance learning, instructional strategies and course development that increased their level of confidence in teaching online.[5]

Faculty Readiness and Preparation

Faculty readiness and preparation to teach within a distance learning college level program is central regarding the development, implementation and success of the program.[5] Faculty education that includes training on: web software; formulating objectives, and using a communication list serve provides faculty with the necessary tools to begin teaching high quality online courses.[5] One study found that faculty who strongly agreed that the training they received in distance education prepared

them to teach online courses resulted in an increased willingness to teach in distance education.[8] Likewise, faculty who reported satisfaction with distance education and their intent to proceed or continue with distance education were related to positive experiences in developing and teaching the course and technological support.[8] As with students, a corner stone of faculty satisfaction with distance education is a high level of well-managed interaction efforts between students and faculty.[9] A by-product of this interaction is realization by the faculty that the center focus of power in distance education is the students, compared to, the instructors in traditional classroom settings. Faculty who accept and promote the need for student-to-student interaction as well as student-to-faculty will positively enhance their experience in distance learning.[13]

Sustainability of Technology Services

University support and the directors of distance education serving on college wide curriculum committees and technology services, such as a Blackboard Course Management System, are the basis for sustaining a successful distance education program.[5] A study of the diffusion of online teaching among 913 college level faculty shows that faculty viewed technical support as a critical component of distance education.[9] Technical support must be presented to faculty as a major element of distance education while they receive training on methods of online teaching, are teaching their first online course, and assessing if they want to continue teaching in distance education.[9] One study further confirmed that faculty will be more willing to engage in distance education if staff support is available to address technology problems.[8] Such support allows faculty to devote valuable time to course content and interacting with their students.[8]

Moreover, support systems designed to meet the needs of students also enhance sustainability of a distance education program.[5] Support systems may include a mandatory orientation day, tutorials on software packages and Blackboard, academic advisement, working with the academic directors and staff of distance education, and information on school resources and networking services. Most often students seek services 24 hours a day, seven days a week.[14]

Positive integration of student and faculty support along with effective technology encourage meaningful interactions between students and faculty, and can provide a successful model for effective teaching and learning that helps to ensure student success.[11] The renewed interest among distance educators reaffirms that student support is an integral part of the delivery of quality distance education experiences.[10] To add to the literature on distance education this article presents "*The Strategic Administrative and Technological Support Model for an Innovative Undergraduate General Public Health Minor"* developed by a college of public health (COPH). As shown in Figure 1 the model highlights the Office of Academic and Student Affairs (OASA) and the Office of Educational Technology and Assessment (ETA) regarding their shared responsibility in administering an undergraduate General Public Health Minor (GPHM). In addition, four major components of the model: coordination, management, quality control, and quality assurance are addressed followed by evaluation data that identifies the successes, challenges and future directions related to implementation of the minor. The information provided is applicable in many cases to all of the college's undergraduate and graduate online course offerings.

Methods

Strategic Support Model

This support model operates in accordance with the Systems Thinking Model defined as "the ability to recognize system level properties that result from dynamic interactions among human and social systems and how they affect the relationship among individuals, groups, organizations, communities and environments"(page 1).[15] First, this support model was designed as an organizational chart with the overall goals of coordinating a distance learning program and educating undergraduate students enrolled in courses within the GPHM (See Figure 1). Secondly, the interacting parts of this support model function as a unit through the information and managerial subsystems to promote effective communication at all levels.

Coordination

The COPH is fully accredited by the Council on Education for Public Health (CEPH) and has graduated over 2000 students. With approximately 125 faculty, the college houses state of the art classrooms; an auditorium; a distance education studio; multimedia /design studio; computer classrooms; and 17 laboratories. The college consists of five departments: Community and Family Health, Global Health, Environmental and Occupational Health, Epidemiology and Biostatistics and Health

Policy and Management (See Figure 1). Most notable is that the college was among the first schools of public health to offer a completely distance-based Master of Public Health program and has graduated over 133 students in online degree programs.

Office of Academic and Student Affairs (OASA)

Approximately two decades ago the college offered a few undergraduate service courses in public health that focused on the history and basics of public health and contemporary health science issues. During the 1990s in-class and/or online courses were added to the curriculum such as Survey of Human Disease; Medical Terminology; Stress, Health & College Life; and Sex, Health & Decision-Making. These courses were well-received by the students and additional sections were added to the schedule each semester. Based on this success, and the 2003 Institute of Medicine (IOM) Report recommendation that "all undergraduate students should have access to education in public health" (page 141)[16] the GPHM was developed and implemented in Fall 2005 (K. Liller, K. Perrin, and S. Perry-Casler, unpublished data, 2007). The minor is comprised of in-class, blended/hybrid and online courses. All in-class offerings have Blackboard accessibility and many courses utilize blended formats whereby many of the assignments and activities are online. The positive growth curve for undergraduate education in public health continues with an increase in elective courses that promote public health as a dynamic interdisciplinary area of study.[17] See Table 1 for the list of required and elective courses in the minor. As noted, 10 of the 21 courses are offered online. Currently all departments in the college offer one or more undergraduate courses.

The OASA coordinates administrative oversight of academic responsibilities related to faculty and student support. The Associate Dean for the OASA, the Director of OASA and the Director of Undergraduate Studies oversee the hiring, training, and supervision of faculty teaching the required college wide courses within the minor. Communication efforts between faculty, (the term faculty includes departmental faculty, doctoral students, adjuncts and instructors) staff, administrators and students follow the "open door policy" which has been successful in addressing faculty and student issues in a timely and responsible manner. The staff provides services for students such as admissions, registration, and advising. Services for faculty consists of student recruitment, scheduling of courses, administrative and academic support, promotion of the minor, dissemination of updated university polices, and information from professional conferences (See Figure 1).

Office of Educational Technology and Assessment (ETA)

The ETA office within the COPH is committed to providing a collaborative environment that supports faculty and students to effectively use technology in their in-class and online courses and to positively influence their teaching/learning experience. As part of the administrative unit, ETA works with other units but especially with the OASA in coordinating all academic aspects of online courses. Developed as the technology center for the college, ETA has several key personnel who assist faculty and students who utilize technological resources and online course materials for the GPHM. It also is involved in faculty development initiatives and offers training for faculty who are required to teach online as part of their academic requirements. One-hour technology workshops for faculty are conducted on a regular basis introducing topics such as podcasting, social networking sites, clicker technology, Second Life, and mobile technologies. These sessions are covered in small interactive workshops lead by local campus experts and faculty. The ETA office also provides funding for interested faculty to travel to technology conferences. This opportunity enables faculty to network with others and thus share their online teaching experiences. Other services include teleconferencing, video conferencing and an electronic newsletter for faculty and staff. The ETA office also maintains and manages a state-of-the-art distance learning studio and a multimedia studio to meet the technology needs of faculty and staff (S. Srinivasan and B. Gulitz, unpublished data, 2007).

Management

Faculty Support

Faculty support is multidimensional. The OASA schedules three undergraduate education meetings every semester so that faculty can meet to discuss teaching undergraduate courses. Topics covered include how to manage undergraduate classes, best practices and teaching techniques, challenges related to teaching, updates on college and university policies, preparing new course proposals, and the course evaluation processes. Opportunities for professional development at the local, state and national levels are identified along with potential funding to offset the cost of faculty attending professional conferences and training workshops. Departmental meetings are also scheduled for faculty

teaching departmental undergraduate courses as electives.

Within the OASA, the Undergraduate Education Advisory Committee was formed in Fall 2005. It is comprised of faculty from each department, ETA staff, and OASA staff. Its purpose is to assist faculty with the preparation, review and approval processes for new in-class and online courses based on college policies and university policies. The *Undergraduate Curriculum Training Manual (2006)* was developed as a faculty resource guide. This manual is password protected for faculty only on the college website and is updated biannually. In addition, the ETA Advisory Committee comprised of faculty representatives from each department, ETA staff, OASA staff, and student representatives meet six times annually to discuss issues affecting policy and administrative changes relevant to ETA services. The ETA Advisory Committee reports to the Associate Dean of Academic and Student Affairs and provides valuable analysis and recommendations to the college administration in implementing any necessary changes to the ETA office.

Student Support

The OASA provides services for students that include recruitment, registration, advising, and managing student issues. Their undergraduate webpage provides links for class scheduling, academic policies, college catalog, forms and contracts, the college newsletter and contact information related to the GPHM program. The academic directors assist with student or faculty issues that may arise during the course of a semester. For example, if a student challenges a grade, the faculty and student may meet together or separately with the academic directors to resolve the conflict. Also, faculty may request assistance in resolving the behavior of a disruptive student. If needed, one of the academic directors will meet with the student and faculty member to respectfully discuss the behavior and options available to resolve the issue. Lastly, upon receiving questions or concerns from students regarding their experiences in navigating within an online course, the faculty and OASA will consult with ETA to efficiently address and resolve these issues in a timely manner.

ETA also offers substantial student support. To cover programmatic costs, ETA charges a technology fee of $90 per three credit online course. With this fee students receive technical assistance in their online courses. For example, a 24 hour helpdesk was established to provide evening and weekend technical support for online exams. Today, the ETA office is a fully self-sustaining unit that is able to support all services via the technology fee. Technical problems reported by students are logged and addressed within a 24 hour period, seven days a week. In addition to telephone and online support, live chat support on the web is offered to students during regular business hours. Instructional designers assist in all technical aspects of course issues. An on-call phone number is provided to students who are taking exams during non-business hours to call for any technical assistance. An ETA instructional designer monitors the technical incidents and addresses them during such test administration periods. A recent survey shows that over 82% of undergraduate students enrolled in online courses offered within the GPHM have accessed these support systems at some point during their semester. Among them, 87% were satisfied with the level of support received from the ETA office (ETA Service Survey, unpublished data, 2007).

Online Course Development Support

The ETA office assists in all aspects of administrative support and implementation of online courses offered within the GPHM. Faculty work with assigned ETA instructional designers to create a course plan, design and develop online course materials, and deliver their courses to an online audience. Skilled instructional design teams ensure that online courses are delivered using multimedia technologies such as the Internet, DVDs, CDs, videotape, streaming media and web-based tutorials. Email, web conferencing, discussion forums, blogs, wikis and virtual chat features are also utilized to enhance online instruction. Synchronous web conferencing programs such Elluminate Live® are used for real-time interaction among faculty and students. Courses are assigned to the ETA staff a semester ahead in order to provide support during the planning and design phases of the course development process. Each year ETA supports well over 5000 students in graduate and undergraduate online courses.

Quality Control

The OASA maintains quality control over required undergraduate courses for the minor through the coordination efforts of the course supervisors. Each course supervisor meets with faculty who are teaching one or more sections of a multi-section course. Each course is standardized by all sections using the same syllabus, basic lecture materials and text. This format ensures that students receive the required content and lecture material. However,

faculty are highly encouraged to personalize their course by adding topics relevant to their expertise and research. Additional student-centered activities based on class profile and faculty interests are also encouraged. ETA also maintains a high level of quality control by tracking all technical inquiries until resolved, thus ensuring that students receive appropriate service for the required fee.

Quality Assurance

ETA instructional designers have created and tested a set of minimum standards for undergraduate and graduate online courses. ETA, with input from faculty, adopted the *Minimum Standards for Online Courses* and applicable evaluation measures to ensure ongoing quality management and quality assurance for all online public health courses. The minimum standards for online courses cover categories such as communication and feedback, course delivery, organization and design, instructional elements and course evaluation. Particular attention is placed on interaction, practice and feedback elements, visual design, learning components and the use of appropriate student assessments in online courses. The standards allow for courses to meet the criteria at a minimum and/or provide suggestions for improvement and an opportunity for courses to exceed these requirements. Each time the course is taught, the evaluation process along with student input enables the faculty member and instructional designer to continuously improve the quality and design (S. Srinivasan and B. Gulitz, unpublished data, 2007). A recent evaluation of the ETA services was conducted. Sixty-three percent of the undergraduate and graduate students who responded rated they were pleased with the quality of online courses and considered all courses they have taken to be of similar high quality (ETA Service Survey, unpublished data, 2007). OASA promotes quality assurance through ongoing communication with faculty to ascertain if courses taught include relevant high quality content and student centered teaching practices.

Results

Evaluation

Successes

From Fall 2005 to Fall 2006 the college has seen a 67% increase in online enrollment in undergraduate courses and a 33% increase in the number of courses offered within the GPHM. Every semester over 3,000 students are enrolled in undergraduate courses in the college. Over half of these students were registered in online courses making it one of the largest programs in the college. In addition, the average retention rate for these undergraduate courses is 97.5%. As of Fall 2006 37 undergraduate students have declared the GPHM upon graduation. The profile of the faculty teaching online and / or in-class courses between Fall 2005 and Summer 2007 consisted of three full-time instructors; 8 adjuncts; 10 departmental faculty members; and 36 doctoral students. The participation and contributions of the faculty were instrumental when assessing the success of the program.

Collaboration efforts between the OASA and ETA have in part contributed to the success of the GPHM. This partnership enables the college to maintain a high level of quality in in-class, blended and completely online courses across all departments. The technical helpdesk remains the hub for students and faculty to address issues related to online and blended courses. Both offices also serve as the central point for disseminating information related to college and university policies and procedures ensuring that students and faculty receive clear and consistent information. This conformity and consistency in registration, course design, faculty training and student support enables these two offices to efficiently and effectively run a large and successful undergraduate GPHM program.

Challenges

Serving a large section of the student population enrolled in the GPHM presents a challenge in coordinating and supporting academic services for online and in-class courses. Assigning faculty for online courses who are well-prepared in using web technologies in addition to be being well-versed with online pedagogy are continuous concerns. As mentioned above, employment of minimum online course standards is intended to assure the quality and instructional integrity of all online courses. Although these standards are utilized from the first stage of course development, some faculty challenge the value of implementing these standards while some consider them to be imposing on their unique style of teaching.

While many faculty have realized the potential value of collaborating and partnering with an instructional designer for their courses, some continue to feel threatened by the designer when it comes to course ownership, content creation and monitoring of course activities. Alleviating these fears and convincing faculty of the role of ETA and its designers is one of the main challenges of the college administration. Ensuring that online course standards do not hinder

faculty creativity and continue to empower them to design and develop high quality online courses remains a goal for ETA and the OASA.

Discussion

Future Directions

The OASA and ETA will continue to investigate new options to create more enriched and alternative virtual learning environments and social networking sites. MySpace and Facebook are examples of sites that have the potential to foster distance education within the GPHM. Second Life is being investigated so the college of public health can create an infrastructure where undergraduate online students may experience a virtual campus and feel part of a large campus community (S. Srinivasan and B. Gulitz, unpublished data, 2007). Based on the strategic support model presented by the authors (See Figure 1) the OASA and ETA will strive to maintain the quality and integrity of distance education and concurrently meet the needs of the students and faculty by:

- Motivating faculty to adopt standards for online courses;
- Motivating faculty to be creative and add their personal touch to online courses;
- Designing courses for the 'net generation' of students who demand sophisticated, high quality and highly interactive online courses;
- Providing services for non-traditional students who are not technology savvy;
- Communicating with faculty the importance of allowing adequate time to plan and design online courses with a focus on effective learning strategies;
- Guiding faculty to efficiently invest their time required for online teaching; and
- Continuously updating faculty on technology and pedagogical skills and build a sense of community amongst faculty through faculty development initiatives.

The OASA will directly work to grow the GPHM by recruiting students in public health undergraduate courses in addition to undergraduate students throughout the university. Our recruiters are making a cognizant effort to promote the program at undergraduate recruiting events both on and off campus. We also hope to build the public health skills of the student further by offering more courses in the core areas of public health such as epidemiology and biostatistics. This should not only strengthen the students' knowledge base as undergraduates but also prepare them for future graduate work in public health.

Conclusion

A Stra*tegic Administrative and Technological Support Model for An Innovative Undergraduate General Public Health Minor (GPHM)* was developed by the authors to provide an organizational plan to coordinate a distance learning program and educate undergraduate students enrolled in courses offered through the GPHM. As Figure 1 shows the OASA and ETA are the managerial systems that provide academic services and resources for faculty and students. In concert with the System Thinking Model the focus of the support model is to promote effective communication at all levels [15] with regard to implementation of the GPHM and providing faculty and students with the skills needed to effectively use technology relevant to their in-class and online courses. To ensure quality control and quality assurance, the OASA, ETA Advisory Committee, technology / teaching workshops, semester meetings with supervisors and faculty, the *Undergraduate Curriculum Manual (2006)*, and the ETA *Minimum Standards for Online Courses* are provided as faculty resources. Student resources include comprehensive OASA and ETA websites, academic advising, helpful faculty, and a 24 hour, seven days a week ETA helpdesk.

The GPHM has grown considerably since its inception in Fall 2005. Through collaborative efforts between OASA, ETA, and faculty course offerings have increased to 10 out of 21 courses offered online (See Table 1). Moreover, ETA Service Survey data shows that 87% of undergraduate students enrolled in online courses are satisfied with the level of support they received.

Challenges, that will guide the future directions of the GPHM and distance education, have been identified. ETA and the OASA need to effectively communicate to faculty the importance of collaboration with instructional designers and the planning time needed to develop high quality online and blended courses. Also, the OASA will need to continue its important academic role and make a concerted effort to improve the GPHM course offerings and recruit more students. Offering the right blend of technology and interaction for students and assuring the quality of online courses while working with faculty will continue

to be the guiding factors for ETA as it plans for the future.

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Table 1. General Public Health Minor

Required: College–Wide Undergraduate Courses (9 credit hours)	
HSC 4120	Introduction to Public Health
HSC 4554	Survey of Human Disease*
HSC 2100	Contemporary Health Science
	Or
HSC 4531	Medical Terminology*
Electives: Departmental Courses (9 credit hours)	
HSC 2133	Sex, Health & Decision Making
HSC 3032	Human Structure & Function
HSC 4504	Foundations of Public Health Immunology*
HSC 4579	Foundations of Maternal and Child Health*
HSC 4211	Health, Behavior & Society*
HSC 4134	Prevention of Mental Illness
HSC 4542	Stress Health & College Life
HSC 4020	Foundations of Food Safety*
MHS 4002	Behavioral Health Systems Delivery *
	Special Topics in Public Health
HSC 4933	Foundations of Infection Control
HSC 4933	Introduction to Environmental Health
HSC 4933	Secret History of Death & Disease
HSC 4933	Men's Health & Gender in Society*
HSC 4933	Understanding US Health Care*
HSC 4933	Foundations of Global Health
HSC 4933	Critical Issues in Public Health*
HSC 4933	Women's Health: A Public Health Perspective

Note: * Online Course (n= 10)
Note: All courses are 3 credit hour courses.
Note: 4933 is the number used until the course gets an official course number from the state.
Note: Survey of Human Disease is offered as an on-line course and an in-class course.

Figure 1. A Strategic Administrative and Technological Support Model for an Innovative Undergraduate General Public Health Minor (GPHM)