Comparability in E-learning: An overview of a fully online undergraduate program in Health Education at Texas Woman's University

Jody Oomen-Early, Ph. D, M.S., CHES

The author is affiliated with the Department of Health Studies at Texas Woman's University. **Contact author**: Jody Oomen-Early, Texas Woman's University, P.O. Box 425499, Denton, TX, 76204; Phone: 940 898-2860; Fax: (940) 898-2859; Email: Joomen@mail.twu.edu

Abstract

To meet the increasing demand for E-learning across the globe, more and more "brick and mortar" universities are migrating to the virtual classroom in record numbers. While much has been written about the comparability of coursework offered online vs. face-to-face, there is a paucity of research documenting outcomes relative to health education. Furthermore, studies investigating the comparability and quality of entire online programs in health education are lacking. Since 2001, The Department of Health Studies at Texas Woman's University (TWU) has offered non-traditional students the opportunity to complete their bachelor's degree in Community Health and gain entry-level skills in health education online. Yearly program evaluations from 2002-2007 and a comparability study conducted in 2004 for TWU's report on Institutional Effectiveness, showed that academic outcomes (i.e. project grades), students' program satisfaction scores, and internship preceptor evaluations between face-to-face vs. online students were not significantly different. As this program has demonstrated over the last 6 years, the internet can be an effective tool in the development and preparation of health educators. An overview of the program, quality measures, and suggestions for developing quality online programs in health education are provided.

Key words: *E-learning; Health Education; Online Program; Quality in E-learning; Program Evaluation; Distance Education*

Introduction

There has never been a greater demand for E-learning. According to the Sloan-C's *Annual Report on Online Education in the United States* the year 2004-2005 marked a historical jump in the number of students enrolled in online courses, with enrollments soaring from 2.3 million in the Fall of 04 to 3.2 million in the Fall of 05. [1] This is an increase of over 800,000 enrollments, and the *largest increase to date.* Students are flocking to E-learning primarily because it offers them the flexibility, convenience, and access to complete their degrees within the context of their lives. To meet this demand, all types of academic institutions are offering online coursework, with the largest public four-year institutions continuing to lead in the number of online offerings. Those that are the least likely to offer online education are the small, private, four-year institutions.[1]

Given this trend, and the increasing acknowledgement by these institutions' Chief Academic Officers that the quality of online learning is equal or superior to that found in face-to-face classrooms, more four-year public universities are offering fully online programs in addition to online coursework.[1] In 2005, the largest percentage of academic institutions offering fully online programs for both undergraduate and graduate level students were offered by four-year Doctoral/Research institutions.[1] Fifty-seven percent of all public four-year Doctoral/Research institutions offered fully online programs in 2005 compared to Masters-level institutions (43.6%), Baccalaureate-level institutions (17.2%), Associates institutions (31.2%) or Specialized institutions (26%). Therefore, there is a positive relationship between the type of university and online program offerings.[1]

Health education online has evolved at a slower pace. In 2000, a search of three popular E-learning advertising websites (Onlineclassrooms.com, ClassesUSA.com, and Worldwidelearn.com) revealed that there were only 2 fully online bachelor's programs offering a degree in health education. As of Fall 2006, this number had not increased much with the number of bachelors-level online programs in Community Health or Health Education totaling three. While there are a number of graduate programs relating to *public health*, *health science* or *health* online (17 as of March 2007), there are fewer online graduate programs specific to *health education* or *community health* (7 as of 2007). There is a need to explore the perceptions surrounding E-learning within the field of health education in addition to the outcomes of existing online programs. This information could improve the accessibility, planning, implementation, and evaluation of existing and future health education online programs, improve satisfaction of the virtual health education student, and maintain academic integrity within the field.

Assessing Quality of E-Learning Programs

Currently, there are no research studies published documenting the comparability of entire online programs to face-to-face programs. Quality as defined in the context of E-learning has been somewhat ambiguous over the last decade. Until recently, a universal set of standards for quality assurance did not exist. Programs were able to delineate their own benchmarks for what constituted "effectiveness," making it extremely difficult to evaluate online programs much less compare them to others. As universities and businesses alike implement virtual learning programs, they are reshaping the delivery and dissemination of education as well as learning pedagogy. Therefore, measures of quality must also be universally defined. To assist educators and administrators in search of quality assurance methods to improve the delivery and outcomes relating to online programs, the largest consortium dedicated to quality in online learning, the Sloan Consortium (Sloan-C), published *Elements of Quality-The Sloan-C Framework* which outlines five pillars of quality in E-learning, including: learning effectiveness, access, student satisfaction, faculty satisfaction, and cost effectiveness for online programs (see Figure 1).[2] These *Pillars* may serve as a framework for program development, implementation, and ongoing evaluation..

Historical Development and Description of the Health Studies Online Program

The Health Studies (HS) Online Undergraduate Program at TWU has grown and evolved steadily over the last 6 years. From its humble first enrollment of 11 students in the Fall of 2001, it has grown at an average rate of 28.3% per year to reach the current program cap of 128 (as of Fall 2007). Growth has been contained to match institutional and departmental resources, and program caps will increase according to university online course revenues generated by online course fees and university support for staff, faculty, and the program maintenance and operations.

Although the Department of Health Studies at TWU has offered electronic courses since 1996, the development of a fully online program for non-

traditional undergraduate students began in the Fall of 2000. A feasibility study conducted by HS faculty showed that there was a large demand from prospective undergraduate students within the state of Texas for an online program in health education. In 2000, only two other universities offered a bachelor's degree relating to health education online, and both were from outside the state. Most of the demand for an online program in health education was driven by non-traditional students already working in the health field, who wanted to complete their bachelor's degree and still maintain their full-time jobs. Most of these individuals had already earned their Associate's Degree or had nearly completed one. A "bridge" program from Associate's to Bachelor's was a logical solution.

After necessary administrative approvals, the planning phase began. The Health Studies Department Chair appointed an Online Program Coordinator who devised the model for the program (See Figure 2) along with the department Chair. At this time, TWU did not have a faculty center for E-learning or instructional designers; therefore, the Online Program Coordinator also supervised the planning and production of the online undergraduate courses along with select Health Studies faculty who had experience in curriculum development and online teaching. The online curriculum mirrored coursework from the department's existing SABPAC approved "traditional" undergraduate program. This curriculum focuses on the entry-level competencies for health educators established by the National Commission for Health Education Credentialing (NCHEC). The Office of Lifelong Learning at TWU assisted the department with coordinating student services for the online students such as registration, library support, and technology training. The planning and preparation phase spanned 12-months.

Program Model and Quality Framework

In 2000, the Sloan-C had not yet established the *5 Pillars of Quality Framework*, so the model created was based upon the publication *Quality On the Line*: *Benchmarks for Success in Internet-Based Education,* a document prepared by the Institute for Higher Education Policy and sponsored by the National Education Association and Blackboard.[3] The benchmarks contained in the document are similar to those found in the *5 Pillars of Quality Framework* [2] which were later adopted by the Sloan-C as the basis for quality standards in online programs.

Figure 2 (below) illustrates the program model, which includes a full-time Administrative Coordinator (added in 2005) to oversee the day-to-day operations of the program and provide student support, assist with faculty training, maintain a schedule for course production, and facilitate program evaluation. A full-time Academic Advisor works with students to assist with course registration, supports students with filing degree plans, offers career guidance, meets with prospective students, and is available during university business hours to answer questions or address student concerns. Course developers are either graduate students or professional part-time online course designers who hold health education degrees, and/or have instructional design and online teaching experience. The course developers are assigned to work with faculty to "build" online courses prior to the semester the courses go "live." Faculty, adjuncts, and graduate teaching assistants teach the online courses and undergo training in online instruction facilitated by the Office of Lifelong Learning. In addition to training workshops and a 3-week course on online teaching, Health Studies instructors new to online instruction may then "shadow" other experienced online instructors within the department. This protocol is overseen by the Online Program Coordinator in cooperation with the Manager of Instructional Design and Faculty Training from the Office of Lifelong Learning.

Degree Requirements

The undergraduate degree requirements for the online B.S.in Health Studies is comprised of 120 credit hours. Beyond the Texas required core of 44 hours (science, math, English, etc), fifty-one credit hours are required of Health Studies core classes, and the remaining 25 hours are courses required outside of the major that count toward the degree. These include classes such as anatomy and physiology, two semesters of a foreign language, speech and computer science. A detailed summary of curriculum requirements is obtainable online by going to the HS website at: http://www.twu.edu/hs/hs/ugraduate.htm.

Students who apply to the undergraduate HS Online Program must have less than 16 hours of core classes or required coursework outside of the major left to complete. Consequently, most students who apply to the program are transfer students who have already completed their Texas Core and many of the courses required outside of the major. All of the Health Studies undergraduate courses are available online; most of the courses required outside of the department, except for the science lab-based courses, can be taken online at TWU as well. The majority of the students who lack required courses which are not

online at TWU opt to take them at nearby community colleges or as non-degree seeking students at Texas universities or colleges that offer the class online.

Program Admittance

To enroll in the online program in Health Studies, prospective majors must apply and be approved by the Health Studies Online Program Admissions Committee. The application process has proven to be an important aspect of the online program, as not all students are prepared to learn online full-time. Prospective majors must submit an online application, complete an online "readiness" assessment, construct a 300 word essay, and show a minimum cumulative GPA of a 3.0 in order to be accepted into the program. Experience completing an online course is preferred but not necessary. Applicants are notified in writing of their status. After being admitted to the program, all students are required to attend a face-to-face tutorial regarding online learning as well as view an electronic presentation which outlines skills imperative to achieving academic success inside the virtual classroom.

Cohort System

Published reports on trends in E-learning have shown that although there is a huge demand for online coursework from today's "Millennial Generation," there is also enormous attrition within online classes and online programs. [1,4,5] Although the actual percentage of attrition varies from publication to publication, the common "range" has spanned anywhere from 30 – 50%.[4] The "cohort" structure is used within the TWU HS Online Program to foster "community", improve advising, and reduce attrition. Students are least likely to feel isolated when they are provided with a network of support from the very onset. The program is limited to 3 cohorts a year (30-35 in each group) so the students can move through the program together. Online courses are taught in 15-week semesters during the Fall and Spring and a 10-week semester over the summer. The courses are sequenced to build upon each other. The cohort system allows the students to develop relationships with their peers so that as the content becomes more difficult, they have social support beyond their instructor and advisor.

Multiple Teaching Strategies

E-learning is student-centered and allows students an active role in the learning process. Consequently, the role of the instructor has evolved from that of the Socratic didactic lecturer and "disseminator of facts" into a learner-centered facilitator and community architect. Constructivism and Andragogy are important theoretical foundations for online learning. [6] Problem-based Learning is a component of each Health Studies online course and this learner-centered paradigm is based upon the learning styles of many non-traditional adult learners who gravitate to E-learning. Hence, a variety of teaching methods are used within the online course room.

Group discussions are facilitated both asynchronously and synchronously through online discussion boards. Telephone and online chats allow the students to interact with their peers and instructor, build a sense of online community, and synthesize and apply learning concepts from the weekly readings. Audio and digital media within the virtual classroom appeal to various learning styles as well as enliven course content. For example, a podcast of an interview with a health educator in the field connects the students to the community and allows them to see examples of health education in practice within various settings and cultural contexts. Technology provides students with the ability to observe health professionals globally without ever having to leave their homes. Guest presenters, some well known in the field, participate in phone chats or asynchronous or synchronous discussion forums with the online students. For example, presenters can facilitate a "webinar" live and students can either login to participate live or view the archives asynchronously later. Core classes are project based vs. exam driven (which not only allows the students to apply what they are learning, but reduces cheating), and students participate in service-learning as well as fieldwork experiences. For example, in Community Health, students actually experience what it is like to apply the PRECEDE model in the needs assessment process. Online students collect epidemiological data, conduct interviews with community residents and gatekeepers, and design and implement a community survey to produce a "diagnosis" of the community in which they reside. Throughout the semester, the online instructor is guiding the process of needs assessment through discussion and feedback online. Students are able to directly practice and apply the skills in the field and then reflect on this application in weekly discussion assignments. It is this interweaving of Web 2.0 teaching methods that fosters "inter-personalization" within the online classroom and improves students' engagement in the learning process.

First Class Meetings

A key aspect of the Health Studies online undergraduate program is that students are required to attend a face-to-face "First Class Meeting" the Saturday before each semester begins. This requirement has proven not only to reduce attrition rates in online classes (in some classes by more than 30%), but improve student and instructor satisfaction scores. Students often travel from great distances to attend this event, where they can meet their instructor and peers, attend technology training, learn how to search electronic databases from a distance education librarian, build social relationships, and visit with their academic advisor. Health Studies online program evaluations most recently demonstrated that online students value this first class meeting, and do not see this as a deterrent to enrollment. In fact, the 2007 program evaluation showed that 92% of HS online majors who responded to the program evaluation survey (n = 39) reported that they "agreed" or "strongly agreed" that the First Class Meeting should continue to be a mandatory event. Qualitative comments left at the end of the survey included responses such as "*I think that the first class meeting helps me do better in the class* ," as well as "*I like meeting the people I'm going to be interacting with online face-to-face each semester*, " and "…..*it connects me to the program. I don't feel 'lost in Cyberspace'*."

Skills-Based Online Courses

There is still little published about the comparability between skills-based health courses offered online versus face-to-face. However, existing research relating to attrition in online skills-based courses in other subject areas such as writing has shown larger drop-out rates and lower grades in the online vs. face-to-face sections of the same courses even when the instructor and the content was kept the same.[7] Reasons offered for this larger attrition rate include a loss of student motivation especially when the content becomes difficult or instructor feedback is not immediate, the online instructor's inability to keep students engaged in the learning process, and the lack of "real-time" interaction.

Mellon questioned whether the learning styles for all learners were compatible with online learning.[8] She pointed out that many students seem to struggle to succeed in settings in which teachers cannot rely on face-to-face interaction to motivate students and build rapport. Spitzer agreed, underscoring what may appear to be a 'given': "Fancy graphics alone cannot sustain student interest and motivation for long." [5 (p. 52)]

Clearly, not all students are prepared to meet learning objectives in online contexts especially within skills-based courses. In order to do so, students must show extraordinary self-discipline and initiative. Kearsley asserts that "students who lack these abilities are not likely to do well in online courses." [9 (p. 41)] The advantages and potential challenges concerning offering online delivery of skills-based courses seem to be related to significant differences between teacher-student interpersonal contact and mutual accountability in online courses. As Allgood suggests, "Some students (and teachers) may be more interested in using technology to make courses efficient and, as a result, care more about minimizing their effort than mastering content." [10 (p. 486)]

Successful delivery of skills-based coursework in online programs relating to health education are paramount not only to the field but also to the university. To meet TWU's departmental plan for Institutional Effectiveness as well as maintain SABPAC approval, the same course projects required in the "traditional" face-to-face courses in Health Studies are also required in the online sections of these courses. All majors are required to submit an E-portfolio at the end of their program, prior to completing their internship experience which includes these course "artifacts." While taking the program core, students are able to actually prepare health communication materials, develop culturally competent health education programs, participate in program evaluation, and compose a grant. This project-driven curriculum requires the students to synthesize, analyze, and evaluate content rather than just regurgitate facts. This can be very difficult to achieve in face-to-face courses let alone the virtual environment. Skills- based classes are not only to challenging to online students who are participants in the E-learning process, but also to the faculty who facilitate these learning experiences. Therefore, HS online instructors utilize an array of teaching strategies to keep everyone connected and "on the same page."

Health Studies' online instructors also set benchmarks for learning throughout the semester such as a series of mini-assignments that comprise the large written project. Therefore, students are receiving feedback all along the way. This pedagogical paradigm requires patience, time, and a commitment from both the instructor and the students. There is also a need to explore successful online teaching strategies employed in skills-based

online health education courses through empirical research.

Internships

Fieldwork is a required program component for all Health Studies undergraduate students. Prior to graduation, each student must complete a 360-hour internship in health education which focuses around the Areas of Responsibilities for entry-level health educators. Students may seek out their own internship sites or pursue the internship opportunities that have already been established by the Health Studies Internship Coordinator and a network of preceptors in the field. Online Health Studies students are often working full-time, so internships are usually worked around their current job, worked into their current place of employment (if it is health related), or spread out over two semesters where the number of internship hours per week are reduced. In this capacity, students can volunteer or be paid to work in community, non-profit, corporate, or hospital based settings on projects which require the core competencies (i.e. planning and coordinating a health program or event; producing health brochures, conducting a program evaluation or writing grants). This experience is pivotal to the careers of many entry-level health educators, as they network with prospective employers and demonstrate that they can apply the skills they have learned within the Health Studies program. Each online intern is supervised by the Internship Coordinator and a field preceptor at the site. Students are evaluated by both the Internship Coordinator and the field preceptor. These evaluations are important program outcomes, as the scores represent the student's ability to apply health education principles to real situations and actually demonstrate the competencies beyond the virtual classroom. As one online program student indicated in a recent (2007) program evaluation survey, *" Even though you are in an online program, you have the opportunity to work with community health organizations and network with leading health companies and advocacy groups. This program gives you real world experience before you even graduate."*

Cost Effectiveness

Although there are additional fees associated with online learning, TWU maintains one of the most affordable tuition rates for four-year universities in the state of Texas. A fee of $47 is charged per undergraduate credit hour (or $141 per 3-hr class). A distance learning fee, ranging from $50-$202 is charged per Health Studies online course. A portion of this fee ($45) goes to the Office of Lifelong Learning to support the university distance learning infrastructure (i.e. course platform; distance learning staff, faculty training, etc.), while the majority of the fee goes directly back to the department to help pay for online program staff, program supplies and equipment, and travel of instructors and guest presenters to internship sites and/or training workshops. Table 1 illustrates the online program budget categories and percent of program expenses per semester. Table 2 outlines the associated costs for online students to attend each semester.

As shown above, even with distance learning fees included, the cost to the online undergraduate student per semester is still less than other online programs offered in and outside of the state. The expense of online learning at TWU is also far less compared to the costs associated with attending virtual universities, which can range anywhere from $5,000 to $12,000 *per semester*.[1]

Results

Program Outcomes

5 Pillars of Quality

Both formative and summative approaches are used to evaluate the program. Yearly program evaluations are conducted to assess whether students' academic outcomes as defined by the department's institutional effectiveness plan are achieved, to determine whether standards outlined in the *5 Pillars of Quality in Online Programs* are maintained, and to measure the levels of student and faculty satisfaction. Results from the program evaluation are shared with the Chair, departmental faculty and staff, Dean of the college, and appropriate university administrators to improve the program and enhance overall institutional effectiveness. Summative comparability studies are conducted every three years to determine whether program outcomes are significantly different between the online vs. the face to face program. The Pillar Component (which relates to the Sloan-C 5 Pillars of Quality), outcome measures, and progress indices are outlined in Table 3.

Academic Performance and Demonstration of Competencies

In 2004, the first comparability study was conducted. To measure whether there was a significant difference in student performance relating to program

content, the project scores for the program's capstone course, Seminar in Health Education were compared. At the end of Spring 04, enrollment in the HS online program was hovering around 58, and the first cohort to successfully arrive at the capstone course HS 4353 Seminar in Health Education totaled 27. The online cohort's project scores (which required them to apply principles from the core courses) were compared to the face-to-face class scores. The results of the independent sample t-tests showed that the project scores were not significantly different (See Table 4). Reasons for this may include that the instructor, the textbook, and the project requirements were the same for each course. Another reason for this finding may be due to the instructor's prior experience teaching online. As shown in Table 4, project scores are notably above average, but the final grant writing project builds from the students' previous course projects in assessment, planning, and evaluation; students have had the opportunity to revise their final projects prior to submission.

Another measure used in the comparability study was student performance in the field. This is perhaps the most important measure, as students from both the online and traditional program are required to apply their skills in the field and be evaluated on their ability to perform the skills by their site preceptor (i.e. professionals in the field). Preceptors are asked to rate the intern (by a score of 1-5; 1 being "poor" and "5" being outstanding) on his/her ability to perform the specific competency. The mean scores for each group's (online vs. traditional) preceptor ratings for both Fall 03 and Spring 04 were compared using independent t-tests. The preceptor ratings for health education interns in the field did not differ significantly when comparing face-to-face (n = 21) vs. online majors (n = 17) (See Table 5) In fact, the mean preceptor scores for the *online* majors were *slightly higher* than the traditional majors though not statistically significant (Table 5). Possible explanations for this could include that HS online students are more likely to be older (mean age is 28 years), have experience in the health field and demonstrate the ability to multi-task family, career, and school.

Student Satisfaction

Regarding program satisfaction, 92% of all HS online students completing the program satisfaction survey items (n = 39) reported that they were either "satisfied" or "very satisfied" with all aspects of the HS Online Program (See tables 6-10), and 89.4% (n = 17) indicated that they felt confident in performing the entry-level competencies for health educators. Qualitative open-ended comments at the end of the satisfaction survey helped to explain these quantitative outcomes. Recurrent themes included satisfaction with the online instructors, praise for student-centered learning activities, satisfaction with the First Class Meetings, effective advising, and opportunities for "real world" experience. A 2007 comparability study is underway and will include the outcome measures mentioned in Table 3 in addition to three others: students' scores on a CHES-prep departmental exit exam (which focuses on entry-level competencies), students' perceived level of competency in performing entry-level health education skills based on scores from an existing NCHEC survey, and external evaluators' scores from a *Quality Matters* audit of online curriculum.

Faculty Satisfaction

A 2005 online open-ended faculty survey revealed that overall, Health Studies faculty who taught online were satisfied with the online program. However, they reported that more university support should be given for training (i.e. release time or compensation), course development, and course management. There was a belief that online teaching required more time, and the online sections should be kept to under 30 students. The majority of Health Studies faculty who were teaching online and completed the survey (n = 8) were satisfied with the program structure, the online course platform (Blackboard), and the assistance they were provided within the department. However, faculty did feel the need for more graduate assistants to help with course management of the skills-based courses. Health Studies faculty teaching online also suggested that large online course sections (between 25-35) should be reflected on the faculty workload and that the university's teaching evaluation instrument should be revised for relevance to E-learning.

Internal and External Program Review

Between 2001-2006, all program evaluation in the department of Health Studies relating to quality in E-learning was conducted internally by the HS Online Coordinator, the Co-Coordinator, and select faculty who were involved in distance education initiatives for the university. Beginning Dec. 2007, the HS online program will add external program evaluation every three years. The online program will undergo a review by a panel of *Quality Matters* (QM) trained professionals who will conduct a *Quality Matters* review of curriculum. As set forth in the QM guidelines one of the committee members must

include one content expert and two others must be from a university other than the home institution. At the completion of the review and revision process, program curriculum may receive *Quality Matters* recognition.

Conclusion

Suggestions for Practice

The popularity and advantages of E-learning are reshaping how education is delivered and the level of access individuals have to information. Many universities are now offering online programs or blended courses in addition to their face-to-face formats. This technological embrace introduces a challenge for both instructor and their students especially within skills-based health education courses. Although still in its "childhood," the Online Bachelor's of Science Degree in the Health Studies Program at TWU has demonstrated, at least in this pilot study, that entry-level health educators can successfully complete their degree online and demonstrate proficiency when applying these entry-level skills in the field. Continued research with larger sample sizes is needed as well as repeated measures to assess progress and differences between traditional vs. online programs over time.

It is also imperative that program administrators, support staff, and faculty, develop online programs based on a clear set of quality standards which include faculty and student training as well as support staff who can help with program implementation, maintenance, and evaluation. It is vital that faculty and students understand the Constructivist paradigm that accompanies E-learning. In addition, the field of health education should also develop standards regarding online education. For example, SABPAC may need to develop review standards for online programs in addition to the traditional face-to-face format. More empirical research is needed to identify factors which serve to hinder and/or achieve effective student learning outcomes and student and faculty satisfaction within online programs in health education. The program showcased in this article may serve as a "template" for other programs in the field.

References

1. Allen IE., Seagood J. *Growing by Degrees: Online Education in the United States, 2006*. Needham, MA: Sloan Consortium; 2006.

2. Moore JC. *Elements of Quality: The Sloan-C Framework.* Needham, Mass: Sloan Consortium; 2000.

3. Phipps R & Merisotis J. *Quality on the line: Benchmarks for success in internet-based distance education*. Washington D.C.: Institute for the Institute for Higher Education Policy; 2000 ;11-45.

4. Roueche JE, Roueche SD. More than arm's length: Distance makes a difference. *Community College Week*, Oct. 13, 2003: 3-10.

5. Spitzer DR. Don't forget the high-touch with the high-tech in distance learning. *Educational Technology*, 2001: *41*(2), 51–55.

6. Palloff RM, Pratt K. *The virtual student: A profile and guide to working with online students.* San Francisco, CA: Jossey-Bass; 2003.

7. Sapp DA., Simon J. Comparing grades in online and face-to-face writing courses: Interpersonal accountability and institutional commitment. *Computers & Composition*, 2005: 22 (4), 471-489.

8. Mellon CA. From need to ownership: Socialization into online teaching. *Educational Technology*, 2003: *43*(2), 47–50.

9. Kearsley G. Is online learning for everybody? *Educational Technology*, 2002: *42*(1), 41–44.

10. Allgood S. Grade targets and teaching innovations. *Economics of Education Review*, 2001: *20*, 485–493.

Table 1. Budget Categories and Percentage of Online Program Expenses Per Semester

Budget Category	**% of program expenses per semester**
Program Staff	85
Equipment and Supplies	11
Marketing	2
Travel	1
Guest presenters/speakers	1

Table 2. Tuition and Associated Expenses for TWU HS Online Students Per Semester*

Item	**Cost to student**
Tuition ($47 per ug credit hour)	$ 564 (for typical 12-credit hr load)
Distance Learning Fees ($55 per credit hour)	$ 660 (for typical 12-credit hr load)
Office of Lifelong Learning Fee ($45 per online course)	$ 180 (for typical 12-credit hr load)
Other university student fees	$ 400 (est. per semester)
Textbooks	$ 700 (est. per semester)
Total	$2504 (est. for semester)

*Data from Spring 04 to Spring 07

Table 3. **Pillar Component, Outcome Measures, and Progress Indices of the Health Studies Undergraduate Online Program at Texas Woman's University (TWU)**

.

Pillar Component	Outcome Measures	Progress Indices
Learning Effectiveness	Project Grades (numerical scores on course projects)	% of students who earn a 70% or better on course projects
	Field observations and evaluation ratings by the Internship Coordinator and Field Preceptor	% of students who receive "satisfactory" or "outstanding" ratings on application of entry-level competencies by Internship Coordinator and Field Preceptor
	Exit Exam scores (as of 2007)	% of students who earn a 70% or better on the department's undergraduate Exit exam
	Scores on NCHEC's Self Perceived Competency survey (as of 2007)	% of students who rate themselves as "confident" in performing each of the competencies and sub-competencies for entry-level health educators
	Program evaluations by both internal and external reviewers (as of 2007)	% of online courses which achieve a rating of 68 (established cut score) or higher on the Quality Matters online course evaluation rubric by an internal or external program reviewer
		Certificate that program is Quality Matters recognized
	Degree completion and Attrition rates	% of online students who achieve degree completion
		% of HS online students who drop out of the online program
Cost Effectiveness	Tuition and distance learning fees	Market analysis; program satisfaction surveys; internal and external program review
Student Satisfaction	Online program survey and electronic focus group results	Program satisfaction surveys; electronic asynchronous anonymous focus groups
Faculty Satisfaction	Online anonymous survey	Electronic asynchronous anonymous focus groups
Access		Internal and external program review; program satisfaction surveys; electronic asynchronous anonymous focus groups

Table 4. T-Test of Final Project Scores in Capstone Course for HS Traditional Undergraduate Health Studies Program Vs. HS Students in Online Program

Type of HS Program	*n*	*Mean Final Project Score*	*Std. Deviation*	*Std. Error Mean*	*t*	*Sig. (2- tailed)**
Traditional	31	91.4	2.19	1.5500	-1.-37	.41
Online	27	94.5	3.53	2.5000	-1.03	.43

* α = .05
*The assumption for homogeneity of variance between unequal groups was met (Levene's F $\geq$.05)

Table 5. Independent Samples T-test and Mean Scores of Preceptor Evaluations by Area of Responsibility for HS Student Interns in Traditional vs. Online Programs

Area of Responsibility	*Type of Program*	*n**	*Mean*	*Std. Deviation*	*Std. Error Mean*	*t*	*Sig. (2-tailed)*
Assess Needs	Traditional	15	3.86	.35	.09085	.643	.525
	Online	18	3.77	.43	.10083		
Plan	Traditional	15	3.60	.63	.16330	-.343	.734
	Online	18	3.66	.49	.11433		
Implement	Traditional	15	3.60	.63	.16330	-.959	.345
	Online	18	3.77	.43	.10083		
Evaluate	Traditional	15	3.53	.64	.16523	-.984	.333
	Online	18	3.72	.46	.10863		
Coordinate	Traditional	15	3.73	.46	.11819	.069	.945
	Online	18	3.72	.46	.10863		
Act	Traditional	15	3.86	.35	.09085	1.613	.117
	Online	18	4.00	.00	.00000		
Communicate	Traditional	15	3.80	.41	.10690	-.693	.494
	Online	18	3.88	.32	.07622		

* Data from Spring and Fall 2004 interns
** df = 32
***α = .05
****The assumption of equal variance was met for unequal groups (Levene's $F \geq .05$)

Table 6. HS Undergraduate Online Students' Satisfaction with Program Advising

"I am satisfied with the quality of advising that I have received while in the HS Online Program"		
Rating	**Frequency**	**Total**
Strongly Agree	41.2%	7
Agree	41.2%	7
Neutral	11.8%	2
Disagree	5.8%	1
Strongly Disagree	0 %	0

*n = 19

**2 missing cases were not tallied into results

Table 7. HS Undergraduate Online Students' Satisfaction with Orientation to Technology and Online Learning

"I am satisfied with the orientation to online learning and technology training provided to me before beginning the course."

Rating	**Frequency**	**Total**
Strongly Agree	76.5%	13
Agree	11.7%	2
Neutral	5.9%	1
Disagree	5.9%	1
Strongly Disagree	0 %	0

*n = 19

**2 missing cases were not tallied into results

Table 8. HS Undergraduate Online Students' Satisfaction with Instructor Interaction

"The HS online instructors facilitate effective discussion and interaction within the online classroom"

Rating	**Frequency**	**Total**
Strongly Agree	52.6	10
Agree	36.8 %	7
Neutral	10.6 %	2
Disagree	0 %	0
Strongly Disagree	0 %	0

*n = 19

Table 9. HS Undergraduate Online Students' Satisfaction with Online Program Curriculum

"Program curriculum provides varied activities such as case studies virtual discussions, interactive simulations, cooperative projects, self tests, etc."		
Rating	**Frequency**	**Total**
Strongly Agree	43.8 %	7
Agree	50.0 %	8
Neutral	6.2 %	1
Disagree	0 %	0
Strongly Disagree	0 %	0

*n = 19

**3 missing cases were not tallied into results

Table 10. HS Undergraduate Online Students' Overall Program Satisfaction

"I am satisfied with the Health Studies Online Program."		
Rating	**Frequency**	**Total**
Strongly Agree	52.9 %	9
Agree	35.3 %	6
Neutral	11.8 %	2
Disagree	0 %	0
Strongly Disagree	0%	0

*n = 19

**2 missing cases were not tallied into results

Table 11. HS Undergraduate Online Students' Perceived Level of Competence in Performing Entry-Level Health Educator Skills and Responsibilities

"I feel confident to perform the skills and responsibilities of entry-level health educators as a result of this online program."

Rating	Frequency	Total
Strongly Agree	47.3 %	9
Agree	42.1 %	8
Neutral	5.3 %	1
Disagree	5.3 %	1
Strongly Disagree	0%	0

n = 19

Figure 1. The Sloan-C 5 Pillars of Quality Framework for Online Programs

Pillar	Description
Learning Effectiveness	**The provider demonstrates that the quality of learning online is comparable to the quality of its traditional programs through the indicators below:** **o Interaction is key: with instructors, classmates, the interface, and via vicarious interaction** **o Online course design takes advantage of capabilities of the medium to improve learning (testing, discussion, materials)** **o Courses are instructor-led** **o Communications and community building are emphasized** **o Swift trust characterizes the online learning community** **o Distinctive characteristics of programs are highlighted to demonstrate improved learning** **o On-campus and online instruction achieve comparable learning outcomes, and the institution ensures the quality of learning in both modes with metrics tracking instructional methods, student constituencies and class size**
Cost Effectiveness	**Institutions continuously improve services while reducing cost by the indicators below:** **o Cost effectiveness models are tuned to institutional goals** **o Tuition and fees reflect cost of services delivery** **o Scalability, if an institutional objective, can be accommodated** **o Partnering and resource sharing are institutional strategies for reducing costs** **o Mission-based strategies for cost reduction are continuously formulated and tested** **o Intellectual property policies encourage cost effective strategies**
Access	**All learners who wish to learn online have the opportunity and can achieve success by the indicators below:** **o Diverse learning abilities are provided for (at-risk, disabilities, expert learners)** **o The reliability and functionality of delivery mechanisms are continuously evaluated** **o Learner-centered courseware is provided** **o Feedback from learners is taken seriously and used for continuous improvement** **o Courses that students want are available when they want them** **o Connectivity to multiple opportunities for learning and service is provided**
Faculty Satisfaction	**Faculty achieve success with teaching online, citing appreciation and happiness by the indicators below:** **o Faculty satisfaction metrics show improvement over time** **o Faculty contribute to, and benefit from online teaching** **o Faculty are rewarded for teaching online and for conducting research about improving teaching online** **o Sharing of faculty experiences, practices and knowledge about online learning is part of the institutional knowledge sharing structure** **o There is a parity in workload between classroom and online teaching** **o Significant technical support and training are provided by the institution**
Student Satisfaction	**Students are successful in learning online and are typically pleased with their experiences by the indicators below:** **o Discussion and interaction with instructors and peers is satisfactory** **o Actual learning experiences match expectations** **o Satisfaction with services (advising, registration, access to materials) is at least as good as on the traditional campus** **o Orientation for how to learn online is satisfactory** **o Outcomes are useful for career, professional and academic development**

Source: Moore, J.C. (2002). *Elements of Quality: The Sloan-C Framework.* Needham, MA: Sloane Center for Online Education

Figure 2. Administrative Model of the TWU Health Studies Online Programs