A Primer on Quality Indicators of Distance Education

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Chaney, E.H., Eddy, J. M., et al, (2007). A primer on quality indicators of distance education. Accepted for publication in *Health Promotion Practice. Vol. 10, No. 2*

Abstract:

In the past decade, there has been an enormous growth of distance education courses and programs in higher education. The growth of distance education is particularly evident in the field of health education. However, the enormous potential of distance education is tempered by one overriding question: How does one ensure that distance education coursework and degrees are of high quality? To this end, the purpose of this study is twofold: to identify quality indicators of distance education and to provide implications of the identified quality indicators for health education researchers and practitioners. The results of the study reveal common benchmarks and quality indicators that all parties deem important in designing, implementing, and evaluating distance education courses and programs.

Keywords: quality; quality indicators; distance education; health education; health promotion

Article:

In the past decade, there has been an enormous growth of distance education courses and programs in higher education (Meyer, 2002; Novak, 2002). According to Mehrotra, Hollister, and McGahey (2001), distance learning, or distance education, is not a future possibility for which higher education must prepare, it is a current reality creating opportunities and challenges for educational institutions; a reality offering students expanded choices in where, when, how, and from whom they learn; a reality making education accessible to ever larger numbers of per-sons. (p. ix)

Interest in distance education applications has grabbed the attention of university and college administrators, faculty, and other professionals all over the world (Birnbaum, 2001; Moore & Anderson, 2003; Willis, 1994). Distance education is an instructional methodology that applies to all disciplines, particularly, health education and allied health disciplines, which require continuing education, often delivered via distance education, for various certifications. The *Public Health Workforce: An Agenda for the 21st Century* (U.S. Department of Health and Human Services, 1999) emphasizes the need to maximize the utilization of distance education to train the public health workforce, which includes "all those responsible for providing the services identified in the *Public Health in America* statement regardless of the organization in which they work" (p. 4). (See Table 1.)

Suffice to say, the growth of distance education is particularly evident in fields of health, with universities such as the University of Alabama, Mississippi State University, the University of Arkansas, the University of Central Arkansas, East Carolina University, Texas Women's University, and Texas A&M University offering health education and allied health courses and programs and with Johns Hopkins University, Emory University, the University of North Carolina–Chapel Hill, and the University of Washington offering courses and programs in public health via distance education technology.

TABLE 1
Public Health in America Statement

Public Health	*Essential Public Health Services*
Prevents epidemics and the spread of disease	Monitors health status to identify community health problems
Protects against environment hazards	Diagnose and investigate health problems and health hazards in the community
Prevents injuries	Inform, educate, and empower people about health issues
Promotes and encourages healthy behaviors	Mobilize community partnerships to identify and solve health problems
Responds to disasters and assists communities in recovery	Develop policies and plans that support individual and community health efforts
Assures the quality and accessibility of health services	Enforce laws and regulations that protect health and ensure safety
	Link people to needed personal health services and assure the provision of health care
	Assure a competent public health workforce
	Evaluate effectiveness and quality of services
	Research for new insights and innovative solutions to health problems

SOURCE: U.S. Department of Health and Human Services (1999, p. 21).

Additionally, the American Association for Health Education, in concert with the Foundation for the Advancement of Health Education, is offering graduate-level courses in health education through distance education technology by partnering with university and instructional technology businesses (see www.hepnetwork .org).

There are several reasons for this increased interest in distance education in higher education. Distance education programs:

- allow students easy access to courses, which has the potential to decrease time to graduation;
- provide opportunities for increased diversity and inter-nationalization in terms of attracting students from different parts of the country and world because they can access the materials for the course from anywhere;
- ease built environment constraints because classroom space is not needed in a distance education course;
- create a new market of time- and location-bound students; and increase revenue generation for the university or college.

Questions, concerns, and opinions in academia regarding distance education and related instructional technology are emerging in the professional literature. Academic administrators and professors are seeking answers to questions about distance education, including how to determine quality. According to Sherry (2003), “translating ideals of academic excellence into applicable terms for providers and users of distance education is not an easy task . . . [however] in this new century, with distance education expanding worldwide, the urgency of quality assurance is apparent” (p. 435).

The issues surrounding quality of distance education have been discussed by stakeholders, including the federal government, state governments, accrediting associations, faculty, and even students (Meyer, 2002). Regardless of who the stakeholders are, “all stress the need to have a better understanding of what con-tributes to quality” (p. 1) in distance education courses and programs. Suffice to say, the enormous potential of instructional

technology and distance education is tempered by one overriding question and concern: How does one ensure that distance education course-work and degrees are of high quality? (Meyer, 2002; Moore & Anderson, 2003). To this end, the purpose of this article is twofold: to identify quality indicators of distance education instruction, courses and programs and to provide implications of the identified quality indicators for health education researchers and practitioners.

BACKGROUND AND METHODS

To generate a comprehensive list of quality indicators, a search of 10 electronic databases was conducted. The databases included EBSCO, ERIC, PsychINFO, Ovid, Gale, Medline, PubMed, Wilson, Cambridge, and CSA. Search engines such as Google Scholar were also used to identify distance education journal Web sites (e.g., *American Journal of Distance Education*) to access more articles and studies. Additionally, the resources available in Texas A&M University libraries (e.g., books, dissertations, conferences, bulletins) were accessed to gather information on quality indicators of distance education. Key terms that were used to identify relevant studies were *distance education*, *quality indicators*, *quality of distance education*, *Web-based courses*, *quality Web-based programs*, *quality instructional technology*, *quality distance courses*, and *literature review*. Every paper that was identified through this process was taken into consideration, regardless of the year of publication. The references of these initial papers were searched for more studies that could be included in the review.

The results of the literature search yielded 24,909 references related to distance education. When the search was narrowed by using the terms *quality* and *distance education*, the results indicated 3,535 references related to the two terms. This is not to say that all 3,535 references had a main focus on quality of distance education, because the nature of the search engine is to compile references that include the search terms, which does not necessarily translate into an all-inclusive list of references that focus on quality of distance education.

Therefore, the results range from references with a main focus on quality of distance education to articles that merely include the two search terms *quality* and *distance education*. Because of the vast amount of literature on this topic, we focused on the more recent articles (1987–2005) regarding quality of distance education. This search protocol yielded the 165 articles and 12 books that were reviewed to gather information on the quality indicators and benchmarks of distance education for this current study (to access the systematic literature review in its entirety, see Chaney, n.d.). This article focuses on quality indicators of distance education, and how these indicators relate to the field of health education.

QUALITY OF DISTANCE EDUCATION

Definitions of Quality

To improve the quality of distance education offerings in practice and research, one must first know what quality is and how to assess quality in distance education programs. According to Meyer (2002), “the lack of consistent, agreed-on definitions for what quality is” (p. 22) can be very problematic. For example, Oblinger (1998) asked, is quality measured by library volumes, Carnegie rankings, faculty rank, instructional methodology, con-tact hours, class size, or student grade point average? These are the types of questions that are pondered in the field of distance education on a daily basis, and they serve to highlight the difficulty in providing a universal definition for quality, because the meaning of quality can change for different stakeholders (students, faculty, administrators, instructors, etc.; Fresen, 2002).

Guidelines to Assess Quality in Distance Education

A summary list of the commonly cited categories of quality indicators for distance education was compiled from the comprehensive literature review mentioned previously (see Table 2). This list from the literature review includes quality indicators identified in the documents, publications, and articles from the following sources: American Federation of Teachers (2000, 2001), Chickering and Gamson (1987), Council for Higher Education Accreditation (2002), Council for Regional Accrediting Commissions (2000, 2001a, 2001b), Institute for Higher Education Policy (2000), Meyer (2002), Sherry (2003), Tulloch and Sneed (2000), Western Association of Schools

TABLE 2
Common Quality Indicators of Distance Education Identified in the Literature

Student–teacher interaction	Active learning techniques
Prompt feedback	Respect diverse ways of learning
Student support services	Faculty support services
Program evaluation and assessment	Strong rationale for distance education that correlates to the mission of the institution
Clear analysis of audience	Appropriate tools and media
Documented technology plan to ensure quality	Reliability of technology
Institutional support and institutional resources	Implementation of guidelines for course development and review of instructional materials
Course structure guidelines	

and Colleges (1997), and Western Cooperative for Educational Telecommunications (1995). The quality indicators discussed below are the final list of indicators that were compiled from the literature review. It is important to note that this list includes the indicators that were most commonly cited throughout all of the literature, and it does not include every indicator identified in the above documents. For example, Western Cooperative for Educational Telecommunications (1995), the Institute for Higher Education Policy (2000), the Council of Regional Accrediting Commissions (2001a, 2001b), and Sherry (2003) all indicated faculty support as an important quality indicator for distance education programs and courses; there-fore, this indicator was included in the list.

Final List of Quality Indicators of Distance Education

Student–teacher interaction. There are numerous types of interaction in distance education, such as student–student interaction, student–content interaction, teacher– content interaction, teacher–teacher interaction, content– content interaction, and student–teacher interaction (Anderson, 2003). Although all of these types of interaction play a role in distance education, the type of interaction most often cited as a quality indicator in the systematic literature review was *student–teacher interaction.* According to Anderson, "many of the pedagogical benefits of teacher-student interaction, especially those related to motivation (Wlodkowski, 1985) and feedback (Laurillard, 1997, 2000), are equally relevant in classroom-based and distance education" (pp. 132-133). Course and program developers should design distance education courses to promote and facilitate healthy interactions between the learner and the teacher.

Student–teacher interactions are especially germane to health education and health promotion processes. For example, in personal health courses, student–teacher interaction provides a forum for students to discuss their health behaviors and related implications with a health professional (i.e., the instructor of the course). For many, this is the first time in their lives that they have received such guidance. In courses that deal with the health education process, student–teacher interaction allows the student to observe how an experienced health professional applies a health theory or process, and it allows for the demonstration of the thought process used by the instructor.

Active learning techniques. Active learning techniques involve the student's being engaged in interactive activities that can lead to increased "enthusiasm for learning as well as increased achievement beyond course expectations" (Hannafin, Hill, Oliver, Glazer, & Sharma, 2003, p. 250). Active learning strategies are particularly important in health education and health promotion. Health educators must find creative ways to encourage students or populations of interest to assess their personal health-related behaviors in order to promote healthy learning and decision making. Many active learning techniques can be incorporated into distance education courses or health education programs; for example, the following activities are health education active learning techniques used in a personal health class at the University of Alabama (as quoted from Hensleigh, Eddy, Wang, Dennison, & Chaney, 2004, p. 45):

Healthier people health risk appraisal: A computerized assessment of personal health risks. Students were asked to complete a personal risk assessment inventory, analyze the results of the computer analysis, and identify a personal plan of action to reduce risk.

Tailored messaging on stress: In this activity, students completed an on-line, personalized stress assessment. Based on their input, students received three tailored health/stress related E-mail newsletters which were sent directly to their personal e-mail address.

Behavior change log book: The students were asked to proceed through a systematic online process to identify a personal behavior plan of action to modify a health risk behavior.

Incorporating the personal and humanistic elements of active learning strategies into distance education courses, such as student–teacher interaction and perceived caring, "improves both student attitudes toward class and their perception of their learning" (Hannafin et al., 2003, p. 251).

Prompt feedback. Most people prefer immediate knowledge of results over delayed knowledge. It is no different for education programs; therefore, prompt feedback to students is a key quality indicator of distance education programs. According to Sherry (2003), "communications from faculty that directly engages students and offers timely feedback may contribute to interchanges and the students' subsequent success in the course" (p. 454). Prompt feedback is important to reduce the oft-reported lack of presence of the instructor in distance education courses. Keep in mind that prompt feedback is a relative construct. Students in this digital age may calculate prompt feedback in minutes and hours, whereas the instructor may calculate prompt feedback in days. It is important to define feedback time in the course outline.

Respect diverse ways of learning. In respecting the diverse ways in which students learn, Dillon and Greene (2003) argued that "our most important task as educators is indeed to help learners build a repertoire of approaches to learning so that they can learn to learn under the variety of circumstances that life will surely bring" (p. 238). Therefore, respecting different ways of learning involves helping students learn to become "more flexible in their approaches across the variety of learning settings they are sure to face" (p. 239). When developing distance education courses and programs, it is important to incorporate different distance education activities and opportunities, such as chat rooms, discussion boards, and Web search activities, to provide flexibility in approaches to learning. For health-related issues, student-to-student discussions on health issues help convey social norms and positive coping strategies.

Student support services. Student support services, such as admission services, library access and services, financial aid, and advisement to meet the "cognitive, affective, and administrative needs of the student" (Daniel & Mackintosh, 2003, p. 819; see also, Berge, 2003), are vital to the success of any distance education program. In *The 2000 Campus Computing Survey* (Green, 2000), 469 public and private U.S. colleges (2-year and 4-year) were surveyed, and the results indicated that 76.1% have undergraduate applications online (55.4% in 1998), 83.1% provide an online version of the course catalog (65.2% in 1998), 35.5% offer online library services (17.9% in 1998), and last, 55.5% offer online courses (see Dalziel, 2003). Providing the student support services available to residential students to distance education students is important, and it is a key quality indicator of a distance education program. Although many distance education–related support services are controlled and maintained by the organization, the program planner should explore strategies to provide student support services equitably.

Faculty support services. According to Wolcott (2003), "teaching at a distance, particularly online, is fast becoming a role expectation, especially for prospective and new faculty" (p. 549). In this new role, faculty members need to be provided appropriate support to be successful in teaching via distance education. The Institute for Higher Education Policy (2000) developed faculty support benchmarks that involve the faculty's receiving the following: the appropriate technical assistance for course development, written resources to address any problems with student access to electronic data for the course, continual instructor training

opportunities, and appropriate assistance in the transition from traditional to distance education instructional methods. Accommodating faculty with sufficient sup-port materials and training will help to increase the quality of distance education instruction.

Program evaluation and assessment. Evaluation and assessment of instructional techniques such as teaching via distance education are critical in improving and ensuring quality. According to the *Statement of Regional Accrediting Commissions on the Evaluation of Electronically Offered Degree and Certificate Programs*, institutions offering distance education courses or programs should conduct sustained, evidence-based and participatory inquiry as to whether distance learning programs are achieving objectives. The results of such inquiry [should be] used to guide curriculum design and delivery, pedagogy, and educational processes, and may affect future policy and budgets perhaps having implications for the institution's role and mission. (Council of Regional Accrediting Commissions, 2000, p. 433)

TABLE 3
Mission Statements of Universities Offering Distance Education Courses

University	*Vision Statement Supporting Distance Education Activities*
The University of Alabama	Enrollment growth will be possible by attracting additional students from surrounding states who seek a high quality education, and through the growth of high quality distance education courses that attract serious students from around the world.[a]
Mississippi State University	MSU will provide mentoring and support to the students admitted to maximize their chances of success and to help Mississippi reach and surpass the national average in the percentage of our population that holds a college degree, and will provide access for working and place-bound adult learners, particularly through its Meridian Campus and distance learning programs.[b]
University of Arkansas	Our commitment to the state is exemplified by our distance education programs that reach out to students in locations around the state and by our nursing educators who prepare well-qualified nurses to serve all of our citizens.[c]
Texas A&M University	Texas A&M University will be known as a seedbed for the best distance and advanced forms of educational technology available.[d]

a. From http://strategicplan.ua.edu/context.html
b. From http://www.msstate.edu/web/mission.html
c. From http://coehp.uark.edu/687.htm
d. From http://www.tamu.edu/vision2020/culture/9.php#mission

Strong rationale for distance education that correlates to the mission of the institution. Educators designing and implementing distance education must align programs and courses with the mission of the institution. Distance education programs that do not articulate the overall vision of the institution do more harm than good (Watkins & Kaufman, 2003). One of the first tasks of the educator should be to identify where distance education fits in the overall mission statement. Table 3 provides examples of mission statements at selected universities offering distance health education activities.

Clear analysis of audience. To develop a high-quality distance education course, the needs of the audience (including those of the institution, faculty, and students) should be identified. The characteristics, geographic location, available technologies, and goals of the learner must be identified, along with the "goals and missions of the learning organization, the costs that must be recovered, the costs of delivery, the political environment at the time for the learning organization, the faculty compensation, and the market competition" (Shearer, 2003, p. 275). A comprehensive approach to assessing the needs and analyzing the intended audience will ensure that the needs of all parties involved are addressed and met in the design, implementation, and evaluation of the distance education course. For example, in the organizational elements model, there are five levels of institutional assessment and planning (as quoted from Watkins & Kaufman, 2003, pp. 511-512):

Mega: Planning and assessment whose primary client and beneficiary is society and whose results are termed *outcomes*.

Macro: Planning and assessment whose primary client and beneficiary is the institution and whose results are termed *output*.

Micro: Planning and assessment whose primary clients and beneficiaries are the individuals and teams within the institution and whose results are termed *products*.

Process: Planning and assessment whose primary focus is on institutional processes and activities.

Inputs: Planning and assessment whose primary focus is on resources and assets.

The model provides a systems view to the needs of the institution and individuals involved. Eddy, Donahue, and Chaney (2001) provided an eco-logical perspective of distance education. This context-relative approach to distance education program planning purports that "the environment in which the program activity occurs will change across time," "the individual participating in the activity will change across time," and "the relationship between the student, technology, and professor will change across time" (p. 377). Figure 1 depicts some of the factors and stakeholders to consider when analyzing the audience in order to design quality distance education applications in university settings.

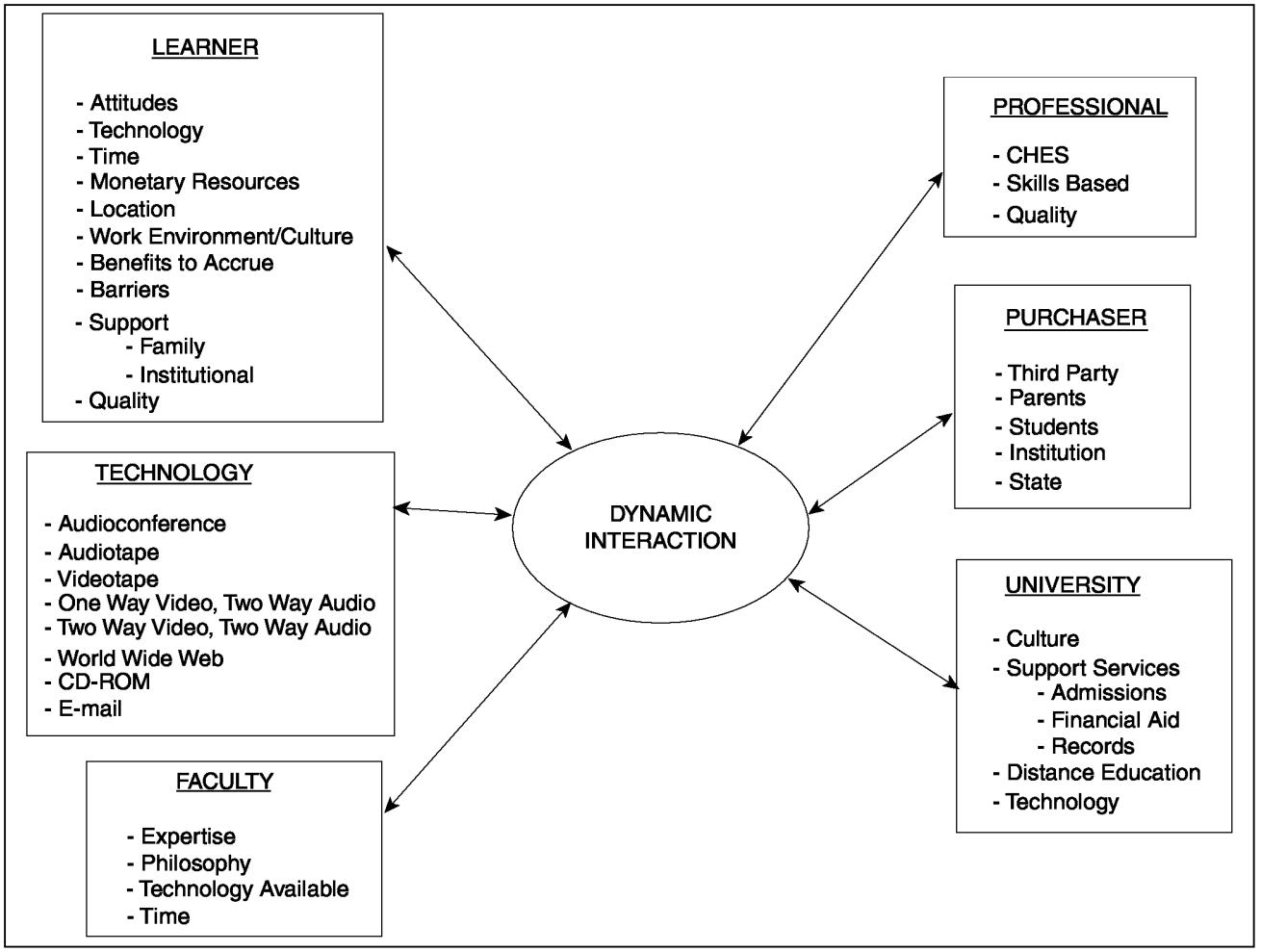

FIGURE 1 Factors Influencing Contextual Relativism in the Designing of a Distance Education Program in Health Education
SOURCE: Permission was granted by *The International Electronic Journal of Health Education* to use this figure (see Eddy, Donahue, & Chaney, 2001).

These factors and stakeholders will change for programs in other settings, but the dynamic interaction likely to occur in any setting remains constant.

Appropriate tools and media. The development of a high-quality distance education course involves the selection and use of appropriate tools and media. The most appropriate medium of delivering instruction to students via distance education does not necessarily mean the newest, most expensive technology available; there are several factors to consider, such as learner autonomy, types of interaction, access, and cost of the media. At the end of the day, technological tools and media should be chosen by "how it allows or does not allow the other elements of the course to behave in a systems environment where all the elements or variables interact" (Shearer, 2003, p. 275). To decide on what is appropriate for any particular distance education course, the educator must first assess the needs of the audience to identify what best meets its needs and, from there, take a look at technologies used in the past and how these types of media provided access while promoting learner autonomy, interaction, and cost-effectiveness. According to Shearer, because there is no one best technology, and it is usually a combination of technologies that produces the best course in terms of meeting the learners' educational objectives, designers of instructional material for distance education courses understand the strengths and weaknesses of a vast array of technologies and how the older technologies have been deployed in the past to address the multitude of design factors. (p. 285)

Documented technology plans to ensure quality. Institutional benchmarks, such as documented technology plans, were identified as quality indicators for distance education. According to Institute for Higher Education Policy (2000), "a documented technology plan that includes electronic security measures (i.e. password protection, encryption, back-up systems) [should be] in place and operational to ensure both quality standards and the integrity and validity of information" (p. 2).

Reliability of technology. Although the type of technology utilized in a distance education course can vary from course to course, an essential aspect to any technology used is that of reliability. A majority of the instruction, communication, and different types of interaction will occur through the use of some type of technology in a distance education course, and it is crucial that the "technology delivery system is as failsafe as possible" (Institute for Higher Education Policy, 2000, p. 2) to provide the best quality possible.

Institutional support and institutional resources. There is an array of institutional guidelines and support factors found throughout the distance education literature. In a study of best practices, Sherry (2003) stated that flexible governance and organizational structure that takes into account institutional culture and values, encompasses academic oversight of programs and courses, and extends decision making regarding technology beyond the chief information officer may lead to more creative responses and quicker implementation. (p. 451; see also, Council of Regional Accrediting Commissions, 2000; Parker, 1997)

It is important to note that institutional culture and core values will either drive or hinder distance education in traditional higher education systems. These core values should be incorporated and considered in the development of distance education programming and courses. In addition, allocation of financial resources for distance education activities and materials—such as fiscal resources for technology support, training and support services, faculty incentives and compensation, instructional resources, and evaluation research and tools—is critical for high-quality and successful distance education programs (Sherry, 2003).

Implementation of guidelines for course development and review of instructional materials. Development of materials and lectures for a distance education course involves a great deal of work at the front end of the process. As a result, it is important for course designers to have guidelines to follow for course development. According to the Institute for Higher Education Policy (2000), it is critical that "guidelines regarding minimum standards [be] used for course development, design, and delivery, while learning outcomes—not the availability of existing technology—determine the technology used to deliver course content" (p. 2). These guidelines help to streamline the process of distance education course development, and they also help to ensure the quality of the courses. In addition, it is important that the instructional materials that are developed be "reviewed

periodically to ensure they meet program standards" (p. 2). Rigorous assessment, review, and evaluation of instructional materials lead to improved editions of those materials, which in turn improve the overall quality of instruction.

Course structure guidelines. The last quality indicator that appeared frequently in the distance education literature involves the overall course structure. According to the Institute for Higher Education Policy (2000), before the start of a distance education course, students should be informed and "advised about the program to determine (1) if they possess the self-motivation and commitment to learn at a distance and (2) if they have access to the minimal technology required by the course design" (p. 3). Students should also be provided with all supplemental materials and with information that describes educational and learning objectives, concepts, and outcomes for the course; these should be presented in a clear, straightforward statement. Faculty should also establish an agreement with the students regarding expectations, such as deadlines for assignments and faculty response. Addition-ally, students should have access to all library resources, including electronic library access.

CONCLUSIONS

More than ever, there is an acute need to train the public health workforce in the generic processes to design, implement, and evaluate effective interventions to prevent or delay the onset of chronic and communicable diseases. The nature of the public health workforce requires unique approaches to train time- and location-bound professionals and preprofessional students. Distance education programming is one method to reach this group. Yet to effectively prepare the public health workforce, these distance education applications must adhere to best process and best practice standards of quality. To this end, this study provides a comprehensive list of quality indicators of distance education that have been identified in the literature. As distance education becomes prevalent in health education instruction and programming, health educators should refer to these quality indicators to guide the development and administration of high-quality distance technology applications in health education.

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