

Case-Based Reasoning Group Project:

Distance Education Diabetes Prevention Specialist Certificate and Associate Degree Program

Theresa Clay, Katrina Coker, Yvonne Lake, Elvira Stahn

University of New Mexico

OLIT 535, Theory and Practice of Distance Learning

December 15, 2003

Introduction

Diabetes is among the leading causes of death in the United States and American Indians are three times more likely than non-Hispanic Caucasians to contract this debilitating disease. Clearly, there is a strong need for educating American Indian communities on how to adopt healthy lifestyles to prevent diabetes. Recognizing this need, Governor Bill Richardson has granted approval for funding to train community health representatives in the fight against diabetes.

The Governor's first step in addressing this issue was to establish a task force assigned to develop and implement a diabetes specialists training program. This task force includes the following three health agencies: The University of New Mexico Gallup-Campus, New Mexico Department of Health - Diabetes Prevention and Control Program, and the Rehoboth McKinley Christian Health Care Services. The administrator of the project is assigned to collaborate with the health agencies to design, administer and deliver a Diabetes Prevention Specialist Certificate and Associate Degree Program.

The Center for Disease Control has the funds to implement this project as a distance education program. Through offering this program, the three pilot agencies will be providing a resource for communities to learn more about the prevention of Diabetes and the needed care for their families and themselves. The focus of this paper is on the distance delivered components, not the on-site training sessions, although we will describe the face-to-face training.

Target Audience

The University of New Mexico Gallup Campus and is located in the Four Corners Region of New Mexico and largely serves a population of Native American and Hispanic people. Our campus is 78% Native American with the Navajo Reservation and Zuni Pueblo close to the

campus. Health educators, nurses, emergency medical technicians, community health practitioners, tribal and state health employees, and community members have been identified as our target audience.

Organizational Framework

The University of New Mexico (UNM) in conjunction with the tribal health program will be administering this program. The UNM Gallup campus will oversee the planning committee and an advisory committee as well as the coordination of the program. The three institutions of the task force will come together by providing expertise, instructors, the course content, mentors and technical assistance. There will be a memorandum of agreement signed by each agency's director and coordinator to follow through with the program. All three agencies will collaborate on the curriculum offered. Management of the decision-making process requires on-going and continued communication and organizational feedback. The program manager will be key in communicating the decisions between the Executive Director, Administrators, Technical support, and Staff/Faculty.

Curriculum

The Certificate for a Diabetes Prevention Specialist, requires 31 course credits as listed below:

- Basic Body Structures
- Medical Terminology
- Perspectives in Diabetes
- Nutrition 120
- Diabetes Prevention, Part 1
- Diabetes Wellness

- Diabetes Prevention Part II
- Program Planning
- Diabetes Nutrition

In addition, the Diabetes Prevention Specialist can go on to receive an Associate of Science degree, but this requires an additional 39 credits of general education courses: 12 credits in Communications, 6 credits in Arts/Humanities/Social Sciences, and 21 credits in Math/Natural/Behavioral Science.

The curriculum includes a wide range of skills from understanding complex new material to problem solving and reacting to the client's needs in an emergency situation. Some of the course work will need to be delivered at the training centers because the content requires face-to-face instruction such as hands-on training, taste testing, and physical activity sessions.

Participants will seek professional leave or annual leave from their work sites for two face-to-face meetings for each course (one at the beginning of class and one midway through) at a training site in their area. The rest of the training will occur at a distance. The distance between the sites takes time to travel and road conditions are not conducive to everyday driving.

Instructional Design and Development

The design of the distance-learning program allows for direct and easily accessible material for the courses. As our philosophy is that students are responsible for their own learning, a constructivist approach will be adapted to the online environment. In addition, professional development will be provided for the current instructors to adapt their skills to a distance-learning program to encourage collaborative activities.

Learner Characteristics

Matching learning styles with the instructional strategy is a designer feature that has the potential to decrease the degree of transactional distance (Atman, 1989). Atman examined the relationship of student characteristics to their success in distance education courses. He recommended educators use several curriculum embedded strategies to strengthen their instruction, while increasing the success of their students (Atman, 1989). Atman also suggests matching instructional strategies with learning styles.

Distance education is becoming more in demand by all types of learners with different learning styles and various cultural backgrounds worldwide making distance education instruction a challenge for instructors. It is important to accommodate and recognize the diversity of abilities, backgrounds, and differences that learners bring to an environment. When addressing the needs of diverse cultures it is important to acknowledge the different communication and learning styles, language, and interpretations that students may be receiving from the distant teacher and support system.

The instructional design and development process for the target audiences' (primarily Native American) learner characteristics include providing course content through the following Indigenous learning modes:

- Observation
- Practice
 - trial and error
 - role play
- Reflection
- Storytelling

- learning metaphorically
- Holistic learning
- Cooperative learning

(Deyhle and Swisher, pp 18-29. 1989)

One way to reach a variety of learners is to use a variety of approaches and media in order to suit a range of different kinds of learners. We will address these learning characteristics in the distance education environment by using the following synchronous and asynchronous learning tools: Moodle, NetMeeting and e-mail. Garrison suggests the more control learners feel over their environment on- and off-line, the more satisfied they will be with the services provided by their educational institution (Garrison, 2000).

Plans for accommodating individual learner needs

Distance education aims to provide instruction in places and times that are convenient for learners rather than teachers or teaching institutions (Moore & Kearsley, 1996). In addressing individual learner needs, first ask, “Who are our students?” Our students are E-learners, who for the most part, prefer to work on their own. Learner support should be designed with very little interaction and social presence in mind. However, if the intended student audience were new to DE, learner support would require a lower amount of Transactional Distance (Tait 1995).

It is important to offer consistent and reliable services to meet learner needs. Technical aspects for maintaining a smooth running system requires a process for input and feedback, which addresses the learning needs of the students. The following are methods for obtaining student feedback concerning services provided:

- Formative evaluations
- Summative evaluations

- Online surveys
- Informal feedback
- Questionnaire about administration services

The program will provide extensive technical and curriculum support to meet the needs of our students through:

- Student advising
- Learners' incentives
- Newsletter (profile the successful DE student)
- Technical needs
 - Video software
 - Page load at 24kbps or higher
 - Telephone support

Course management system

For effective instructional delivery there are processes and support elements which need to be managed and coordinated. Managing the system for continuous feedback and improvement is vital to student success. This involves technical support and instructional techniques. Moodle, NetMeeting and e-mail will be utilized because the features they offer are in alignment with the needs of the program.

Moodle

Designed as a cooperative learning environment, Moodle will be used as the course management system. Moodle offers a simple, lightweight, efficient, compatible, and low-tech browser interface. It is a virtual learning environment that supports content that is engaging and motivating, which allows for structuring the environment to meet the learner needs and

preferences. The interface design is flexible in terms of information, links, collaboration, discussion and navigation. Students are able to interact with the instructor (grading, journal, assignments), content (resources, quizzes, surveys, interactive games), and each other (class polls, discussion forums) to facilitate learning.

NetMeeting

The synchronous communication features of NetMeeting will supplement the course management system. Video and audio conferencing allow real-time consultation between students and teachers or advisors. Whiteboard and chat features give students an opportunity to communicate in a virtual classroom meeting session as scheduled by teachers periodically through the program. Video also supports community leaders, guest speakers and tribal elders in one location to present to groups in another location.

E-mail

The course management system requires each student and instructor to use e-mail as a form of communication. Grades and other instructor feedback are e-mailed to the student.

Interaction

Interaction in an open, non-threatening environment will certainly decrease transactional distance and enhance social presence. To easily interact with the facilitator is a benefit of online communication, synchronous conferencing, asynchronous message boards, or by e-mail. Interaction is important between support staff, instructors, and students with their varying backgrounds and needs. Yet interaction by its very nature implies social presence, and as Gunawardena and Zittle's (1997) study shows, social presence is a key factor in learner satisfaction. Interaction must be designed carefully accommodating the different types of interaction - learner-learner, learner-instructor, learner-content, as well as learner-technology.

Interaction that occurs offline between instructors and students - the individual support that instructors give each learner if the learner needs it through private e-mail.

Orientation to the program

Our orientation program will provide clear instructions on how to apply to the DE course, the expectations, requirements, and the timeframe. Also, a pre-course training session on the technology needed for the course. Including face to face meetings and provide opportunities for social interactions such as student and instructor introductions, pictures of community to promote social presence and interaction. There will be Icebreaker activities, a class page with pictures and biographical information. One class activity will determine Netiquette rules to give the learners firm guidelines on expected behavior. Other activities include forums in the Cyber Cafe to provide a place where learners can vent about frustrations with assignments, etc., or simply decompress by engaging in off-topic discussions. Extra activities can include the creation of student homepages.

Student Support Services

Technical Assistant's (TA's) at each of the field centers will be available to help the students through the course. The field centers will contribute staff and faculty time, computer pods and/or loaning computers to students, help instruction of the courses with their expertise, and host the two face-to-face meetings in each course. There are concerns for our face-to-face meetings, especially for folks driving as much as two hundred miles, one-way, through the rain, snow, ice and worse to get to class. For those unable to attend F2F meetings, a CD-Rom course introduction and live technical assistance can be provided. Additionally, based on the needs assessment of the students, a guidebook with detailed instructions about the technology (how to navigate on a platform, software needed, computer memory needed, modems, where to ask for

help, where to post, etc), where to find specific Diabetes content for the course readings, course assignments, learner support offered, etc., should be included in the guidebook. Other student support services should address the following issues:

- Curriculum
- Technology
 - Hardware
 - Software
 - Skills
- Study skills

The following services will be offered to address these issues:

- Provide access to computers or make sure students have access prior to start of course through the (boys, girls club, high schools, community centers, libraries, etc,)
- Technical assistance (TA's) from beginning to the end of the course
- Telephone technical support staffed by students who are trained and supervised by instructor

Instructors Role

Instructors are key to the success of the program. Distance education demands more knowledge, skill, and time from instructors than face-to-face instruction. It is vital that there are incentives and rewards to encourage instructors to participate in the training. This program will provide teaching assistants and offer opportunities for professional development.

Workshops for instructional techniques and practice will be offered for instructors and teaching assistants who want to improve their knowledge and skills both professionally and personally. Instructor training and development will include the following workshop topics:

- Discuss new changes to the curriculum
- Learning topics specific to the population
- Learning styles
- Distribution of instructional materials
- Hands-on technical practice
- Peer-to-peer teaching/learning
- Continued technical assistance

The instructor will provide the following:

- Materials by print, CD ROM, and video
- Diabetes resources needed for the program
- Create opportunities for group work
- Asynchronous and synchronous activities on line
- Make library resources available online
- Accommodate different learning styles
- Support innovative ideas
- Moderate discussion board and chat room
- Grading policies should be clearly spelled out and strictly adhered to from day one.
- Incorporate cultural differences into the curriculum
- Opportunities for student to participate in the decision making process to give them a sense of control (Carr-Chellman & Duchastel 2000)
- Interaction for learning by encouraging socializing activities.

Instructional Strategies

The effective instructional strategy for the users of this distance-learning program is to appeal to various learning styles through:

- Developing appropriate course delivery for the distance learning environment:
 - Provide appropriate resources for the task
 - Assessment strategies: include self-assessment
 - Accommodate different levels of computer skills
 - Video demonstrations
 - F2F meeting as needed
 - Incorporate student goals and motivations
 - Introductions to peers
 - Develop a community
 - Include learner strategies to meet goals and objectives
 - Consider the learners situation for learning the content
 - Give assessments that accurately measure the students' abilities and perspectives.
 - Meet general population needs: basic content and design
 - Appeal to various ages

Conclusion

In implementing our pilot project, our plan was to design the first course and then run it through the design, development, implementation and evaluation process before moving on to add additional courses. We will consider updating our instructional design after the pilot project has been evaluated.

REFERENCES

- Atman, K.S. (1989). Goal accomplishment style and the long distance learner. Proceedings of the Fifth Annual Conference on Teaching at a distance, USA, 9, 103-108.
- Moore, M.G., & Kearsley, G. (1996). Fundamentals of Distance Education. *Distance Education: A systems view*, 1, 1-19.
- Bird ME, Kane WM, Shames L. Jager M. Working cooperatively with Native American communities to educate children and youth. In: Matiella AC, ed. The multicultural challenge in health education. Santa Cruz, CA: ETR associates, 1994:209-32
- Carr-Chellman, A. and Duchastel,(2000) P The ideal online course British Journal of Educational Technology Vol 31 No 3 P 229-241
- Garrison, R. (2000) Theoretical Challenges for distance education in the 21st century: A shift from structural to transactional issues International Review of Research in Open and Distance Learning. Vol. 11 No.1 p1-17
- Gilliland H. Teaching the Native American. Dubuque, IA: Kendall/Hunt Publishing Co, 1992.
- Gunawardena, C. N. & Zittle, R. (1998) Faculty development programs in distance education in American higher education. In C. Latchem and F. Lockwood (eds). *Staff development in open and flexible learning* (pp 105-114) London Routledge
- Havinghurst RJ, Gunther MK, Pratt IE. Environment and draw-a-man test: the performance of Indian children. J Abnormal Social Psychology 1946;41:50-63.
- Johns-Steiner V. Learning styles among Pueblo children: final report. Report to National Institute of Education, US Department of Health, Education and Welfare. Albuquerque, NM College of Education, University of New Mexico, 1975.
- Little Soldier L. Working with Native American children. Young Children 1992; 47(6): 15-21

More AJ. Native Indian Learning Styles: A Review for Researchers and Teachers. *Journal of American Indian Education*. 1987; 26:17-29.

Rhodes RW. *Nurturing learning in Native American students*. Hotevilla, AZ: Sonwai Books, 1994.

Swisher K., Deyhle D. The Styles of Learning Are Different, but the Teaching is Just the Same: Suggestions for Teachers of American Indian Youth. *Journal of American Indian Education*. 1989;28:28-32.

Tait, A. (1995) Student Support in Open and Distance Learning In MLockwuci (Ed.), *Open and Distance Learning Today* (p 232-241) London, Rutledge