

Distance Education for health workers in Micronesia

MAUREEN M. FOCHTMAN, R.N., Ed.D.*

CAROL B. ALLEN, R.N., M.S.N.*

RUTH GURUSAMY, R.N., M.N.*

Introduction

The mission of the University of Guam (UOG) College of Nursing is to:

- offer professional nursing education to the culturally and academically diverse population of the region,
- increase the body of nursing knowledge through research and creative endeavors, and
- serve the culturally diverse peoples and health care providers of the region.

To accomplish this mission, a Title III grant was written in December, 1991. The intent of Project DEEN (Distance Education Enhancing Nursing) was to provide academic courses to nurses and other health care providers in the Commonwealth of the Northern Marianas, Republic of Palau, Republic of the Marshall Islands, and the Federated States of Micronesia. The grant was funded in 1992. The funding approval stipulated that only one island nation be used as a pilot site. The Republic of Palau was selected as the pilot site for a number of reasons. The President of UOG served as a member of the board of trustees of Palau Community College (PCC) facilitating access to their facilities and faculty. Health care providers in Palau were interested in participating in the courses and there

was adequate infrastructure and technical support personnel to assure success.

Prior to the start of the project, 35 staff nurses and nurse leaders from each of the jurisdictions were asked to identify their learning needs and the needs of their staff. Ninety percent of the respondents indicated need for increased skill in physical assessment. Nurse leaders also requested that we include some content to assist nurses in improving their decision-making skills.

Pre-course planning

As soon as the grant was funded course planning was begun for the first course entitled, Decision-Making Using Health Assessment Skills. This year-long course was developed and taught by two UOG nursing faculty. One faculty had many years experience with distance education and was the content expert in health assessment. The second faculty, the content expert in decision-making, had a keen interest in distance education. Both faculty were educated in the US

and had a western cultural orientation. The faculty were creative and flexible, prerequisites for anyone attempting this kind of venture. Together, the faculty developed the outline of the course, selected a textbook and a decision-making model to be used. The textbook selected used clear simple language and had a large number of high quality photographs that were used as visual aids. Faculty were oriented to the satellite station and briefed on the capabilities of the, as yet undeveloped, computer system.

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The site coordinator was selected in Palau according to our specifications. We requested a person with a minimum of a Bachelor's Degree in Nursing, some teaching experience, and a willingness to work with technology. The individual selected was a faculty member at PCC. She was a Palauan who was educated in the US and had an understanding of both American and Palauan culture. The grant provided funds for her to travel to Guam

* College of Nursing and Health Sciences, University of Guam, 303 University Drive, Mangilao, Guam 996923.

for a one-week orientation. During this week, the course content, syllabus, and textbook were reviewed. Physical assessment equipment needed in Palau was identified and ordered. She identified the skills she wanted to review and practiced them with assistance from the UOG faculty. The faculty and the site coordinator developed a site coordinator job description and manual using Armstrong and Sherwood's model.¹ While on Guam the site coordinator also met with key people at UOG including the Dean of the College of Nursing, the manager of the communication satellite, the satellite technicians and the library personnel. She was oriented to the operation of the satellite radio. Although we had intended to orient both the faculty and the site coordinator to the computer technology, the equipment was not received until the day before classes commenced. Because many students planned to use Pell grants to pay for their courses, the site coordinator was given a brief orientation to the basic information she would need to share with prospective students. Specific assistance for students in completing the financial aid forms was provided by the PPC Financial Aid Office with support from UOG.

On her return to Palau, the site coordinator worked with the Chief nurse to recruit students from the hospital, the health department and the island's private clinic. Eight Registered Nurses (RNS) enrolled in the first semester course. Three of these students were interested in pursuing a bachelors degree in nursing at UOG, 2 already held a BSN, and the remainder enrolled in the course for continuing education credit. Six of the nurses worked in Public Health, one in the hospital and one in a private clinic. There were 7 Palauans and one Fijian.

Many authors suggest that the complete course syllabus be sent to the students at the beginning of the course.^{1,2} Prior to the start of the course, we decided to complete only the first third on the syllabus. We made this decision for several reasons. First, we were unsure of the computer technology, language, cultural and experiential differences among the students and faculty. Third, to assure cultural and workplace relevance we planned to use case histories contributed by the students as the basis for the decision-making practice.

Implementation

The first two classes were held in the same week and were taught by one of the faculty on-site in Palau. This face-to-face contact is absolutely essential. Most Pacific people depend on personal contact and are committed to people rather than programs or processes. Students and faculty need to see and get to know each other. The trip also allowed faculty to assess and organize the environment for optimum learning. Unfortunately, the classroom was a concrete block box with very high ceilings. This produced very loud and disturbing echoes when the speaker phone was used. In addition, all of the electrical outlets in the room were wired on the same circuit. This circuit was inadequate to support

both the computer and the computer projection device. Consequently, when the computer was used students had to cluster around the small screen. Lack of funds at PCC precluded even partial correction of either problem until the following year.

The computer equipment was delivered to Palau the day before classes were to begin. The technicians, satellite operators, faculty, site coordinator and students learned about the equipment together. On the first night of class the students looked at this equipment with both trepidation and awe. Hoping to increase the student's comfort with the equipment we asked each person to type their name, place of work and phone number into the computer's address book program. We soon discovered that only one student had any experience with a keyboard. Some students were reluctant to touch the computer. Students were encouraged to come in during non-class time to "play" with the computer with assistance from the technicians. The two oldest nurses in the class immediately signed up!

During the first meeting, students were encouraged to express their concerns about distance education. Their primary concern was that there would be no teacher in the classroom. They were also concerned that they might not be able to ask questions to clarify assignments. Faculty shared their expectations that there might be some technical difficulties since the equipment was new to everyone. We also shared our concerns that some students might be reluctant to speak openly over the radio and encouraged them to work closely with the site coordinator. The site coordinator serves as the marketing representative, classroom manager and human link between students and distant faculty. When teaching across a broad gulf of distance, culture, and language the skill and commitment of the site coordinator is crucial to student learning.¹ The site coordinator serves as the culture broker, helping both faculty and students communicate and understand one another's perspective.³ Our site coordinator was able to communicate concerns that students could not directly share with faculty because of their cultural norms. She also helped us to understand that the students often needed to stop and discuss the content with one another in their own language before they were comfortable sharing their thoughts with the course faculty in English. To develop a sense of team, we asked them for the Palauan word equivalent to "pioneer". From thenceforth we frequently reminded ourselves that we were the *ketangels* and capable of overcoming any obstacle.

Since only one of the two faculty could go to Palau for the initial session, we built in several exercises to help us get to know more about our students. Each student was asked to complete a "getting to know you" form that included information about the students personal and professional life. The question that asked the student to describe their most memorable moment in nursing was particularly helpful. Each student also videotaped a short introduction of themselves.

Table 1. Advantages and disadvantages of the Distance Learning program

Advantages	Disadvantages
<ul style="list-style-type: none"> - Students and faculty learn to use new technology. - Culturally relevant information is exchanged among all participants. - Class assignments could be completed in the work setting - Case studies from the work setting provide a relevant method of illustrating or practicing new skills - Learners are able to put new knowledge and skills to work immediately. - Time and location is convenient for the learners. - Education is available to more people. - Students may choose to take the courses for college credit or for CEU's. - Cost-effective Multiple sites can be done simultaneously. - Site coordinator interpreted student needs and conveyed concerns. - Site coordinator developed new teaching skills. - Techniques and materials created for this class were used to enhance classes in the on-campus nursing program. 	<ul style="list-style-type: none"> - Increased time is necessary to present and discuss content. - Interactive computer requires expensive telephone time. - Radio transmission is not always clear. - Students may not be computer or even keyboard literate. - Mail is slower than expected and students don't get timely feedback on their assignments. - Faxing of lengthy assignments results in many lost pages. - Lack of person-to-person contact with faculty is difficult for some students. - Students must be willing and able to express own needs verbally, since faculty cannot "read" their responses. - Faculty found it difficult to pace presentation of content.

This helped faculty to connect the voices on the radio to person. The Kolb learning styles inventory was administered. All of the students and instructors preferred either the Active Experimentation or Concrete Experience mode of learning. Both of these profiles are well suited to active learning formats like distance education.

During the first semester of the course, we experienced multitude of problems including power fluctuations, difficulties establishing long distance phone connections with Palau, satellite tuning problems in both Guam and Palau, and a typhoon. During the third class session the Guam computer blew up, complete with smoke and bad smells. It was repaired quickly and a more adequate surge protector installed. Our lack of experience with the computer system resulted in some waste of classroom time when the phone connection could not be made or we tried to send data that took much longer than anticipated. The echo in the classroom in Palau made it difficult for us to hear one another. When students were asked how frustrating it was for them when the instructors could not understand what they were saying, the students rated this as moderately frustrating. They were willing to keep trying but wished it were better.

Faculty planned to use photographs, compressed video and whiteboards as visual aids during class. When the system worked, the whiteboards and the real time video were very effective. Students ranked the information on the whiteboard, the class discussion and the printed materials in the syllabus as most helpful to their learning. Sometimes we prepared the whiteboards prior to class, sometimes we created them as we went along. Both methods seemed to work, but the latter required that both faculty be in the classroom so one could type the boards while the other conducted the class. The real time video was useful for short demonstrations and return demonstrations such as the technique for percussion. Longer demonstrations involving assessment of whole systems were

videotaped and mailed to Palau for viewing during the class or as homework. Students did return demonstrations of history taking and physical assessment skills at the end of the first semester. These assessments were videotaped by the Palauan technical coordinator. His excellent work contributed significantly to the success of the course. This was, however, quite costly, as the cameraman had to travel to the hospital or health department to do the filming.

Faculty were committed to a highly interactive class format. Lecture was used infrequently. Most of the classes involved a question-answer dialogue between students and faculty. We used case histories submitted by the students to stimulate critical thinking about assessment and decision-making. One useful technique was role playing. We asked one of the students to play a client. We sent this student information not given to the rest of the class and asked the class to take a symptom-focused history and then decided what assessments needed to be done. Once physical assessment findings were described, the students were asked to make a decision about the nature of the problem and the appropriate interventions. Sociocultural assessment was presented by asking the students to take a history of a Pohnpeian student who was in the studio in Guam. He was known to most of the participants so they felt comfortable talking to him. At the beginning of the session we transmitted real time video of him to Palau and he was able to see the Palauan students.

Students took a quiz about every 3 weeks. The quiz and a key were faxed to the site coordinator who made copies, administered the quiz and corrected it with the students. Short written assignments were sent to faculty by fax. Longer ones were mailed. When assignments were mailed students did not receive feedback for about 3-4 weeks since mail between the two islands usually takes 1 week each way. Students understood the situation and found the lag time acceptable.

Faculty and site coordinator held weekly telephone meetings. These meetings provided faculty with essential information about the student's responses to the previous week's class. It also provided an opportunity for the site coordinator to share student concerns and problems as well as make suggestions for change. Course faculty shared plans for the coming week's class and asked for input from the site coordinator. Initially the site coordinator was reluctant to make suggestions but as the weeks progressed and trust was formed, she became more and more willing to share her suggestions and observations.

Evaluation and recommendations

Seven of the eight students who started the first semester course completed it. One student dropped out because of family obligations. Eleven students enrolled for the second semester. All students who completed the course passed. The average grade was B. Students and faculty evaluated the course and the methods at the end of each semester. Table 1 summarizes the results of these evaluations. In general both students and faculty found more advantages than disadvantages. The convenience of taking courses on the home island was probably the most significant advantage for the students. Most of the disadvantages were related to limitations in the technology.

We learned a great deal from this first course that might help others planning similar ventures. Community colleges are excellent partners. They have resources in terms of library, financial aide assistance, technical assistance and faculty. The site coordinator and the technical coordinator are essential to the success of the program. They must be selected carefully and must possess the technical and personal skills that you determine are necessary to the success of the program. Both the site coordinator and the technical coordinator must be trained and provided with written job descriptions. Coordinator and technician training can be done on site using computer assisted learning modules and satellite radio conferencing. A clear, concise, user-friendly textbook is essential. Texts with pictures or illustrations that can be used during class in place of slides or other visuals are helpful. Since students have limited funds, textbook costs and future usefulness are important considerations. It is helpful if the syllabus with readings, in-class activities and homework can be sent to the students at the beginning of the course. However, if this is the first course using new methods and technologies, a modular presentation is very useful and provides necessary flexibility. Whenever possible, the first class should be done live and on-site, especially if faculty or technology are new to most of the student group is involved. When planning teaching sessions, flexibility is essential. Take advantage of teaching-learning opportunities and expect technical difficulties now

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and then Two people in the studio are really helpful especially if sound quality is poor. One faculty can teach and the other listen carefully and interpret. Interactions between the faculty in the teaching session also stimulate and model student-student interactions and enhance learning.⁴ Video taping is an excellent evaluation method. Students who have never been videotaped will need some instructions in the basics and will need support to reduce their anxiety. A media technician with excellent video skills is essential. Faculty and the students will learn in spite of problems and challenges.

Following the success of the first course, a second course, Transitional Concepts in Nursing, was taught to 10 students in Palau. Seven of these students were registered nurses, three were Health Assistants. This course was specifically targeted to individuals who wished to pursue a BSN. Pathophysiology is currently being taught to both Palau and Pohnpei and includes UOG students in the studio classroom.

Acknowledgements

This project could not have succeeded without the help and support of the following persons: Damiana Kunihiro, Palau site coordinator, Peter Ulechong, Palau technical coordinator, Edwel Ongrung, Palau Department of Education, Bruce Best, Guam PeaceSat station manager and Mike Dabchur, Guam satel-

lite operator.

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Editorial Note: The University of the South Pacific (USP) have more than a decade of experience in distance learning in the Pacific. It is hoped that this UOG program drew from the USP experience. □