

NAVIGATING DISTANCE LEARNING TECHNOLOGIES USING TEAM TEACHING



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BACKGROUND OF PROGRAM

In 2004, the American Association of Colleges of Nursing (AACN) adopted the position to move the current level of preparation necessary for advanced practice nurse (APN) roles from the master's degree to the doctoral level. AACN also called for educating APNs and other nurses seeking top leadership and clinical roles in Doctor of Nursing Practice (DNP) Programs.

In September 2007, the Jefferson School of Nursing welcomed its first cohort of 18 DNP students. Students represented a wide variety of practice specialties including acute care, primary care, healthcare administration, population health, education and industry. Twenty students comprise the second cohort entering in September 2008. Nationwide, Jefferson is one of 79 schools of nursing offering a DNP degree.

ABOUT THE GRANT

Pennsylvania is the third largest employer of non-physician providers and the majority of these individuals work in primary care.

There is a critical shortage of advanced practice nurses (APN) nationally and in the state of Pennsylvania. In 2005, the highest vacancy rate in Pennsylvania's health care workforce existed for APNs at 14.7%, this is increased from the 2003 vacancy rate of 11.6%.

Advanced practice nurses vacancy rate in north and central Pennsylvania were 15.1% and 17.6% respectively.

Access to primary health care is limited in many rural areas. The project addresses increasing demands for educating great numbers of APNs including MSN and DNP nurses to work in north and central rural Pennsylvania. Rapid population growth in some rural communities may have an impact on available services, with varying expectations on local health and human service delivery systems.

Disparities in educational status, employment, and income may require the development of specialized approaches to nursing education and health improvement in rural Pennsylvania.

Masters of Science in Nursing (MSN) and Doctor of Nursing Practice (DNP) curricula prepare APN nurses to provide healthcare by meeting objectives pursuant to the Health People 2010.

The project will recruit and retain diverse and disadvantaged students to the MSN and DNP programs and insure a supply of master's and doctoral prepared nurses to offset the advanced practice nurse shortage and primary care provider shortage in rural Pennsylvania.

POSTER OBJECTIVES

1. Describe the roles of team teaching live on two separate campuses.
2. Address the unanticipated problems encountered in team teaching live on two separate campuses and the associated resolutions.
3. Provide suggestions for future study and evaluation.

PROGRAM GOAL

The urban/rural partnership allowed four of the 18 entering DNP students to "attend" class via a combination of web-casting and live video over the Internet. Our goal was to use live team teaching simultaneously in order to facilitate student learning and promote group cohesion across both campuses.

DISTANCE LEARNING TECHNOLOGY

One of the core requirements for success was to identify an affordable video conferencing solution that allowed both sites to participate equally. We wanted an identical learning experience no matter on which campus the student was located. And then Jefferson has previous experience with video conferencing using a variety of vendors. The planning team decided to purchase two Tandberg 770 units that support high quality audio and video connections over IP (VTC-IP). The audio is CD quality and video uses the H.264 codec. After the initial purchases, which were covered by a grant, continued use does not incur ongoing operational costs.

Deployment delays prevented using the VTC-IP solution at the start of the first class. We resorted to using the University's web-casting software until the Tandberg units could be configured. The instructor's computer image was sent via the webcast to a computer at the other site and then projected. Audio was also sent and available through external speakers. Students at the remote site could send questions or help comments via a chat function back to the instructor or classroom technologist. Students could not see their fellow students at the other site.

Later in the semester, the VTC-IP solution was deployed allowing both sites to see each other and have open two-way audio. This VTC-IP setup allows the instructor from either site to send their teaching content from their PC to projectors at both sites, voices from each site are transmitted to the other, and a large LCD monitor allows the instructor and students in one location to see the instructor and students at the other classroom.

An unanticipated complication was with the instructors teaching style. When answering questions from students the instructor preferred to use the chalkboard to write the question and draw the solution. The video quality from the webcasting application was too poor for the remote site to see what was on the chalkboard. Better, broadcast TV quality cameras, were brought in to try out, but their use – and the camera operator – proved too distracting to the classroom. Better planning would have allowed time for the instructor to get used to an alternate technology such as a document camera.

According to their feedback, students at the rural campus were not frustrated by the initial technology. Students at both sites tended to forget about the other site until questions were asked and they "noticed" the other group. Once the VTC-IP solution was in place student interaction and sense of "presence" was higher. Objective measures showed little performance differences between the two sites. The table below shows final scores from each location over the two semesters.

OUTCOMES

SITE	FALL 2007	SPRING 2008
RURAL CAMPUS	90.81	92.41
URBAN CAMPUS	91.93	93.20

ELEMENTS OF TEAM TEACHING

One faculty member and a technological support staff member were present on both campuses during each class.

The urban campus hosted 14 students, while the rural campus accommodated 4 students. Both faculty members took responsibility for course content and collaborated on:

- Grading responsibilities, rubrics and key points of each assignment;
- Identifying student mastery of course content and assignment objectives;
- Pre-recorded, online course content.

In order to facilitate student learning with a minimum of disruptions and maximizing consistency across campuses, faculty developed a communication plan that included:

- Weekly and as-needed phone conferences to share content, special instructions and/or individual student concerns;
- Advance provision of handouts and class materials to the rural campus;
- Grade distributions and individual graded assignments to promote inter-rater reliability.

Lastly, funds from the grant provided the opportunity for rural campus students and faculty to travel to the urban campus for an interactive class session regarding communication strategies in the work environment. Bringing the campuses together, though difficult to coordinate, served to unite the cohort and encourage additional communication between campuses on a personal and professional level.

UNANTICIPATED ISSUES

- ❖ With both campuses dedicated to the concept of team teaching and engaged in the process, this model was surprisingly easy to implement.
- ❖ Anticipate technology breakdowns. Have a backup plan.
- ❖ Ensuring that both campuses have availability of the same software as well as the same versions of this software is important to avoiding and ameliorating technology breakdowns.
- ❖ Strong emotional reactions from students were difficult to handle remotely. This is one area where we felt it was particularly important to have faculty present and available on both campuses.

SUGGESTIONS FOR THE FUTURE

- ❖ In order to facilitate seamless learning, it is imperative to have all handouts and materials available to remote students ahead of time. This was particularly an issue with guest speakers and student presenters, who often came with their materials, leaving little to no lead time to provide this information to the remote campus. Handouts also served as a backup in the event of technology failure.
- ❖ Due to the success we experienced with bringing all students together on the same campus for one class, we will suggest reserving funds and resources to do this again. Having the students together served to encourage communication among the cohort and allowed individual faculty members to "connect" with students from both campuses in person.

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Information from this poster presentation will be compiled into manuscript format for future publication.



Faculty and Staff of the Jefferson School of Nursing Urban Campus pictured with a live video feed of Faculty and Students of the Rural Campus (Left) and Students of the Jefferson School of Nursing Rural Campus watching a live video feed of the Urban Campus (Right).