Administering Distance Education Programs: Current Challenges and Solutions

Roberts, Benjamin J.

26th Annual Conference on Distance Teaching & Learning
http://hdl.handle.net/10945/40261
Administering Distance Education Programs: Current Challenges and Solutions

Benjamin J. Roberts, Ph.D.
Naval Postgraduate School

Walter E. Owen, DPA
Naval Postgraduate School

In response to then Secretary of Defense William Cohen’s challenge to revolutionize defense business affairs and to accelerate the delivery of sophisticated defense systems that increase the effectiveness of our forces, the Naval Postgraduate School (NPS) began a journey into the delivery of graduate systems engineering distributed education programs. This report focuses on an outreach approach to delivering the content of these programs to Navy laboratories and other facilities rather than having students seek the school as a provider. Given these challenges, unique strategies had to be developed for program development and delivery. This report will concentrate on two graduate systems engineering programs that are delivered by multiple configurations of blended approaches to distance education. The authors have served as program managers for these programs and have gathered lessons learned over eleven years.

Background

Over eleven years ago, Secretary of Defense William Cohen delivered a message to Department of Defense (DOD) that focused on the need for reform and maintaining the country’s competitive edge. In order to strengthen a competitive position, the ability to innovate and implement would be key. Inherent in the Secretary’s challenge was the need to build core capabilities, create new knowledge, exploit the opportunities offered by new technologies and deploy defense systems with speed and effectiveness. Defense, along with supporting industries, needed individuals with innovative mindsets who possessed a broad range of technical, business and operational skills, who understood national and international opportunities and constraints, and who have the integrated systems perspective needed to develop and deploy increasing complex Defense systems. The developing climate produced a demand for systems engineering expertise within DOD that grew to an extent that in-house solutions were imperative. Within the U.S. Navy, assignment to private universities was insufficient to meet the demand for qualified systems engineering education. As a result, the Naval Postgraduate School established two distance education master’s degree programs to compliment their resident programs. The two programs represent an executive oriented program, affiliated with Massachusetts Institute of Technology (M.I.T.), and a basic non-resident program established primarily for civilian engineers at Navy laboratories.

The Programs

The two NPS programs being reviewed for this session are:

2. Systems Engineering Non-Resident Master’s Degree Program (curriculum 311)

The PD-21 program is designed for senior engineering and technical professionals. By integrating engineering and management elements, the program strives to develop a new kind of leader with a holistic perspective and knowledge of the total life-cycle acquisition system. In this program, students acquire the fundamental skills and strategic perspective required for effective change agents as well as
enhance their ability to recognize barriers to success early in a system’s development cycle when corrective actions are least costly. Students in the PD-21 program are exposed to the latest state of the art concepts, tools and best practices, both private and public, in systems engineering and management. They are taught by experienced faculty who have worked in the defense industry and who have completed defense relevant research and/or consulting. One of the key propositions of the program is collaboration, not only within defense and across the services, but also with defense industry partners. In this scenario, students participate and collaborate in educational environments, studying and analyzing how to improve the way defense does business. This is a two-year program that begins with a two-week face-to-face presence on the main campus followed by coursework via web conferencing (ELLUMINATE). New cohorts (groups) of students begin every September, with two cohorts in session at any one time. Both cohorts come together for industry visits during the spring/summer timeframe.

The Systems Engineering Non-Resident Master’s Degree Program (curriculum 311) is designed for Department of Defense (DOD) organizations involved in a wide range of systems engineering and integration challenges. These organizations partner with NPS to educate and train engineers with tools and technologies relevant to their work, resulting in employees with greater knowledge and expertise to enable them to better meet the needs of their customers. Typically, DoD organizations provide the students, and the Naval Postgraduate School provides the instruction and hands-on experience. Courses are delivered at the students’ local site using a combination of on-site instruction, video teleconferencing, web-conferencing and/or web enhanced online courses. Many of the faculty who teach in the PD-21 Program also teach in this program.

Challenges

At the onset of our programs, challenges tended to center around technological and sponsor resource issues. Our initial introduction to distance education began with online and VTE as the primary modalities to deliver our programs. VTE quickly became the chosen method for large, intact groups (which was typical of our 311 Program at the time), while online instruction was used for stand alone courses, electives, and certificate programs. Although, initially, we had issues with video quality and degradation of PowerPoint presentations, students reported that this method made them feel “in school” more than online instruction. Overall, VTE was costly and many customers did not have dedicated VTE studios that could be used. In some cases, arrangements had to be coordinated to ensure that a cohort of students would have access to a studio or classroom during their two-year program. For some customers, program funds have been used to purchase VTE systems, or to update an existing system for compatibility.

When NPS instituted a course in online instruction for faculty, the authors attended the first class, and were among the first on campus to be certified in online instruction. Eventually, completion of this course was required of faculty who were scheduled to teach an online course. This course was designed, developed, and delivered by the Office of Continuous Learning at NPS (now known as the Center for Education Design, Development and Distribution, CED3). Online instruction added greatly to hiring faculty who were not teaching on campus. With many faculty resources scattered around the country, faculty could be geographically separated from the campus and teach courses for students in both of the programs under review. With the advent of a course support system, Blackboard, both video and online instruction became more robust and enriching for the student. Many faculty and students welcomed the new found freedom and independence that enhanced the online instruction offered. Faculty who took this course also recognized the transfer of knowledge and skills to the VTE arena as well.

As our PD-21 cohorts grew in number, the authors recognized the need for a delivery method that could address the great geographic dispersion of the students. Dispersion in this case presented a problem because of the limited number of customer sites that could be accommodated by the NPS VTE Center.
Thus, when Breeze, a web-conferencing method, was under study, the authors chose it as a modality to prototype and possibly solve our dispersion problem. While our initial experience with web conferencing was successful, eventually ELLUMINATE was chosen to resolve bandwidth and interactivity issues. Today, we successfully deliver our PD-21 program (and many cohorts of the 311 program) using this method, and have successfully graduated many cohorts. Our students have often commented on two aspects of web conferencing that they like. One is degree of interaction. The other is ease of communication. With the chat feature in web conferencing, students can communicate with their instructor and with other students in the class. Communication is provided through a simple interface enhanced by a panel of emoticons. Many students find this much more appealing in comparison to voice-activated VTE. A downside of using web conferencing is sometimes experienced at sites where the Navy-Marine Corps Intranet (NMCI) is activated. At sites employing NMCI, cameras used as a part of web conferencing are not allowed. However, this is not a major problem with ELLUMINATE, since video is not relied upon as much, and communication is enhanced with other features.

**Solutions**

Initially, given the great geographic dispersion of our students, blended approaches grew out of necessity. Eventually our delivery strategies grew in number, and now include Video tele-education (VTE) / VTE-IP; Online asynchronous instruction; Web-conferencing; Outreach Coordinators, Embedded and Remote faculty; Faculty visits; Streaming video and recorded sessions.

Since the U.S. Navy has concentrations of its fleet on the East and West Coasts, NPS established outreach coordinators for both the Norfolk and San Diego areas. These coordinators marshal the available resources to apply against the DL teaching missions. Resources in this case would include identifying dedicated sites for students to attend classes by VTE or embedded faculty. Embedded faculty are local faculty resources that NPS has identified and contracted with to teach courses in its distance learning programs. Remote faculty are also employed in this effort. Remote faculty differ from embedded faculty in that they are typically not on campus, or near a concentration of students. Typically, remote faculty can teach by VTE, online, or web-conferencing. In some cases, program funds have been used to purchase VTE systems for remote use, and also the relatively smaller capital investment for web-conferencing (laptop, camera, and microphone). The VTE system employed by remote faculty is VTE-IP, video over the internet.

We typically encourage our faculty to visit students on location and deliver courses from those sites when possible. Characteristically, we budget for faculty visits to sites where students are concentrated. This is most likely to occur in our 311 program where organizations (sponsors) purchase a large segment of a cohort. Of course, if the delivery system for that cohort is via VTC, the site visited has to be able to accommodate faculty delivery from that site to other sites that may make up the cohort. In the case of web-conferencing, the problem goes away.

Independent of the method of delivery, class sessions are all recorded. In the case of VTE, streaming video is provided to the students via a website link. In the case of web conferencing, built into the ELLUMINATE program is a recording option that the faculty activates before beginning class. With this feature the student can return to any class taken and review issues covered in class. Both of these methods have been invaluable for the student who has to miss class because of work conflicts or illness. Students also indicate that the recordings provide excellent reviews prior to exams or major projects.

According to Bunderson (2003), blended learning approaches have been around for some time and there are many means by which one can blend a distance education delivery system. In some cases, we blend out of necessity to reach a wider audience of students and also make greatest use of our available faculty.
assets. To meet our educational mission, NPS has to consider the methods of delivery, the available faculty, and the locations of both students and faculty.

Program Support

It is often said that great militaries have great support. We believe the same holds true for distance education programs. Our students are all full-time defense engineers, scientists, active military, and defense contractors. The work relevancy of our programs makes them attractive to sponsors who fund the students’ participation. In addition, because of the full-time employee status of our students, these programs are a good fit for the time students have to devote to work activities. Memoranda of agreement are cast with sponsors that allow students to partition work time for their classes.

With judicious blends of delivery strategies, we attempt to make the students feel “in school” as much as possible. Additionally, as program managers, we also coordinate NPS assets that include technical support, library support, support from the NPS registrar, as well as support from the NPS CED3 office that maintains contact with students for all of their course needs. In addition, CED3 has recently published a distance learning handbook, available electronically, that is designed to be a single touchstone for distance education students throughout their NPS careers. Every new cohort begins with an orientation using the technology that will be employed for their courses. The orientation provides an opportunity for students to become acquainted with all key individuals (program managers, faculty, staff) associated with program delivery, and includes an academic briefing.

Since technology has become more prevalent and affordable, and through blended delivery strategies, we find fewer limits to the number of students that we can reach and accommodate educationally. As well stated by Osguthorpe and Graham (2003), the innovative uses of technology have begun to blur the lines between traditional face-to-face instruction and more recent distance learning environments.

References


About the Presenters

Benjamin Roberts joined the faculty of the Naval Postgraduate School (NPS) in 1985 and is currently appointed as a senior lecturer in the Graduate School of Business and Public Policy. He also holds a joint appointment with the Department of Systems Engineering at NPS. Dr. Roberts holds the Ph.D. degree from The Pennsylvania State University, and a postdoctoral fellowship from Johns Hopkins University. Currently, his duties with the Manpower Systems Analysis program, is focused on the area of Industrial Psychology in teaching activities and academic advising. Professor Roberts also serves as program manager for instruction for NPS distance learning programs.

Address: Naval Postgraduate School
School of Business and Public Policy
555 Dyer Rd.
Monterey, CA. 93940

E-mail: broberts@nnps.edu
Phone: 831-656-2792
Walter Owen holds a faculty appointment as a Senior Lecturer with the Department of Systems Engineering and a joint appointment with the Graduate School of Business & Public Policy at the Naval Postgraduate School Monterey, California. He currently holds a position as Associate Chairman for Distributed Programs & Outreach. Dr. Owen holds a Bachelor of Science in Naval Engineering from the United States Naval Academy in Annapolis, Maryland, a Master of Science in Management from the Naval Postgraduate School in Monterey, California and a Doctorate in Public Administration from Golden Gate University in San Francisco, California.

Address: Naval Postgraduate School
Department of Systems Engineering
777 Dyer Rd.
Monterey, CA. 93940
E-mail: wowen@nps.edu
Phone: 636-925-2982