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## Twin approaches to research: the Penn State and Flinders experience

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**Jonathan Anderson**

School of Education, Flinders University *edja@flinders.edu.au*

**Eunice N. Askov**

Institute for the Study of Adult Literacy, Penn State University *enal@psu.edu*

*Two universities, The Pennsylvania State University in the United States and The Flinders University of South Australia, like many other higher education institutions, are developing online distance education programs. This paper reports on two approaches to offering a research methods topic at the postgraduate level, approaches that were determined in part by learners and their environment, which in turn determined modes of delivery. The modes of learning, development of learning resources, topic evaluation and feedback, and the lessons learned from offering the two research topics in an international context provide pointers to other higher education institutions planning to offer courses by flexible delivery.*

flexible delivery, distance education, research methods, Internet, CD-ROM

### **AIMS AND PURPOSES**

The Pennsylvania State University recently established a new campus, its 25<sup>th</sup>, which it designated the World Campus, to offer online courses to students anywhere in the world. As part of its program offerings, the first graduate degree program selected to go online was the Master of Education in Adult Education. Of the 33 credits required for the Master's program, students take 21 online, 3 credits being for a research methods topic called "Research Methods in Adult Education". This research methods topic, the first in the Master's program, was first offered in 2000.

At the end of 2000, Flinders University of South Australia entered into an agreement with the Rajabhat Institutes in Thailand to offer a Doctor of Education (EdD), a professional doctorate requiring three years of full-time study. The topics in the Flinders EdD are to be offered in a mixture of online and traditional teaching formats. The first online topic to be offered in 2001 is also a research methods topic called "Approaches to Research".

The purpose of this paper is to describe the context and delivery of these two research methods topics, one as part of the Penn State World Campus, and the other as part of the Flinders initiative in offshore teaching. In the case of Penn State, the research methods topic has already been taught, while in the case of Flinders University all preparations for teaching the research methods topic have been made. This paper compares the contrasting approaches with a view to drawing out lessons learned from flexible modes of course delivery in an international context.

### **LEARNERS AND THEIR ENVIRONMENT**

Study at the graduate level in education is often undertaken on a part-time basis (Hammon & Albiston, 1998) while learners balance the demands of work, family, and study (Pitman 1997).

The challenge for higher education institutions is to adapt objectives, content and presentation for this group of motivated learners who have decided to return to study, usually to further their careers and to update their knowledge in educational methods and theories (Swenson, 1995).

Traditionally, university courses have been conducted by bringing students together in buildings and conducting instruction in laboratories and seminar rooms where lecturers or tutors try to guide learning activities to help students construct knowledge. According to Slavin (1997), this guiding process involves three key steps:

- understanding and knowing the prior knowledge of students so links can be made between old learning and new;
- responding to students to promote feedback and gathering the responses to use in the construction of new or refined knowledge; and
- helping students see how activities and ideas presented build or combine to increase understanding and knowledge.

Such an approach emphasises the active role learners take in knowledge construction. Learning thus defined has strong social aspects, with interactions between learners and tutors on the one hand, and between learners and learners on the other, playing an important role.

Where course delivery goes online, it is still important to maintain these kinds of social interactions since these have been shown to impact on learning outcomes (Burge, 1994; Jonassen et al., 1995). Computer based collaboration with its anytime any place capability is one means of achieving this (Harasim et al., 1995), while a key role for the lecturer is to act as facilitator in monitoring and supporting interactions (Wegerif, 1998).

The graduate students in the first Penn State World campus cohort were judged a typical adult education group. Many were returning to study, most were women, and all had other responsibilities. The students in the first Flinders entry to the offshore EdD program are all lecturers at Rajabhat Institutes (part of the university system in Thailand), pursuing doctoral studies to upgrade their teaching qualifications. For both groups of students, the online delivery of teaching programs allowed them to study while concurrently holding down full-time working positions.

## **METHODS OF DELIVERY**

Penn State has been involved in outreach and distance education programs for more than a hundred years. The recent establishment of its 25<sup>th</sup> virtual campus, the World Campus, is a natural extension of its mission to serve the needs of distance students using new information and communication technologies for course delivery and to provide an interactive learning environment. The platform adopted for all its programs and courses is WebCT, which allows password protection together with such features as email, bulletin boards, chat rooms, and student record keeping.

Flinders University is a new entrant in the development of online distance education programs. The agreement with the Rajabhat Institutes in Thailand to offer a doctoral program for teaching staff led fairly naturally to a consideration of online delivery for course materials and instruction. The Approaches to Research topic, being the first topic offered in the program, is pioneering the School of Education's entry into distance education. WebCT was an option for developing the online version of the topic that thus far has been presented internally to students attending the university. For reasons that are elaborated in the next section, a decision was made to develop the

teaching and learning resources on CD-ROM and to link the CD-ROM to the School's Intranet for regular communication and interaction with students during the topic.

The choice of CD-ROM for the delivery of the main body of teaching and learning resources in the EdD program was made for several reasons. First and foremost, CD-ROM provides a portable resource allowing learning anytime, any place, at the user's pace, wherever there is access to a computer. In the rural regions of Thailand where the enrolled students reside, they are more likely to have access to computers with CD drives than access to the Internet. A second major consideration was cost for students. Once students are given the topic CD-ROM, there are no connection costs for accessing the learning materials.

The disadvantage of CD-ROM, of course, is that once a CD is pressed, the content is fixed. Nor does a CD allow any interaction of the kind described above between learner and tutor or between learner and learner. This disadvantage is overcome with the use of the Internet, which all students can freely access at the Rajabhat Institutes where they teach even if such access is not available on their home computers. The Internet allows email access to the tutor and fellow students, as well as access to a bulletin board developed especially for the program to cater for multiple threads and, indeed, multiple boards.

Because the CD-ROM is hot linked to the School Intranet, and since both CD-ROM and Intranet make use of browser software (Explorer or Navigator), the student, who is at a workstation linked to the Internet and with the course CD-ROM in the drive, can seamlessly navigate between the two sets of materials. Importantly, however, online costs are incurred only when using the bulletin boards or otherwise communicating with the tutor. Figure 1 shows the home screen for the CD-ROM produced for the topic, Approaches to Research. When students click to enter the Forum or view the Topic Schedule under Aims and Purposes (see Figure 2), they need an Internet connection. Otherwise, they are accessing the CD-ROM. Navigation between CD-ROM and Intranet is seamless.

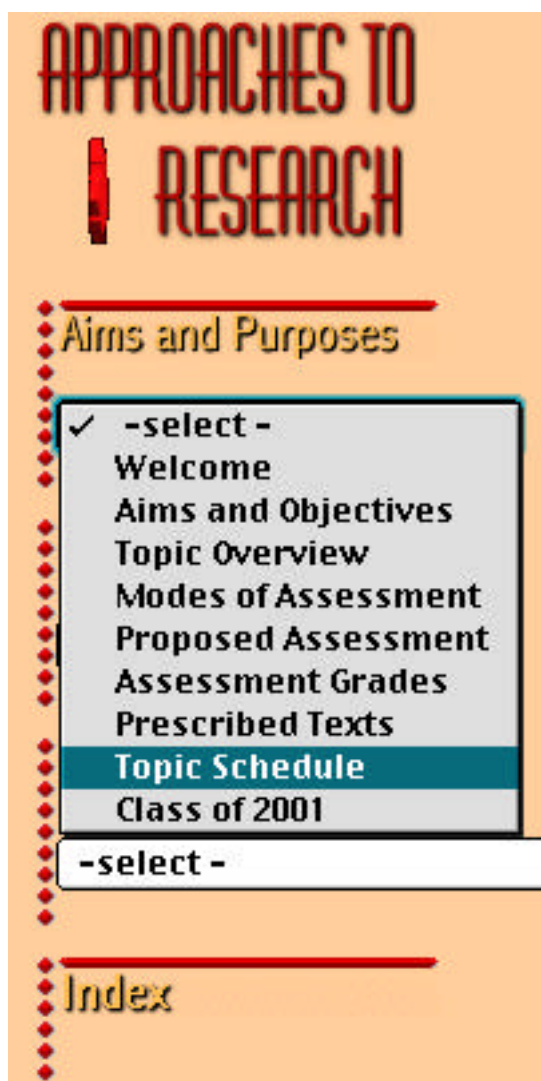


**Figure 1. Home Page for the topic - Approaches to Research**

## RESOURCES FOR LEARNING

Students enrolled at Penn State World Campus have access not only to academic tutors but also to a range of other learner support services. For technical support, for instance, often needed in the initial stages of a topic, there are dedicated staff to answer student queries. There is also access to Penn State's vast library resources.

A major problem encountered at the Rajabhat Institutes in Thailand, which for the most part are limited to offering bachelor degrees and a few professional master degree programs, are the severely limited library resources in each institution. The number of journal holdings is small and, of these, few are in English. Similarly the range of English textbooks for advanced studies in Education are virtually non-existent. This is not a problem peculiar to Thai universities but is common in many developing nations.

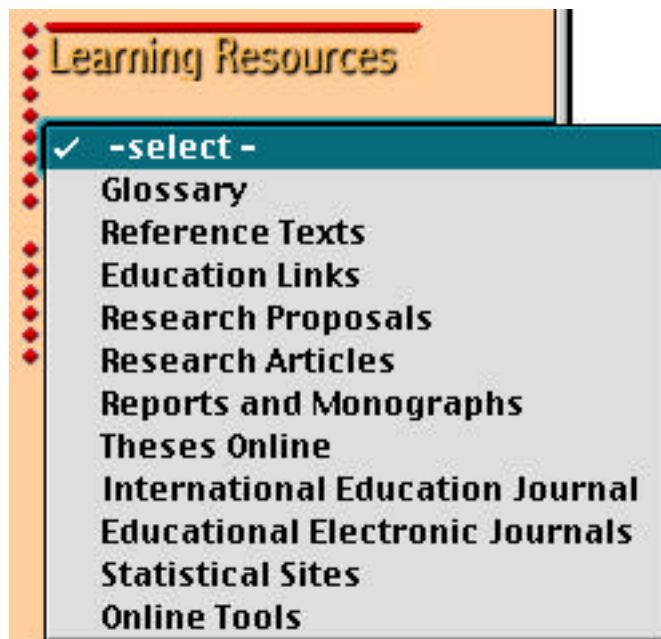


**Figure 2. Pull-down menu options under Aims and Purposes**

The very limited resources that Thai EdD students can call upon at their individual institutions poses a major difficulty for the offshore delivery of the Flinders EdD program. Nor was postage from Flinders University library a feasible option because of slow delivery times between Australia and Southeast Asia.

The choice of CD-ROM as a delivery option described in the previous section was seen as an ideal way of overcoming the problem of limited resources, achieved by building into the CD-ROM developed for the EdD research topic the beginning of a rich set of learning resources.

Figure 3 shows the range of resources from which students enrolled in Approaches to Research may select. “Glossary”, for instance, takes students to a lexicon and concordance of terms used in statistics and empirical research in Education developed by a professorial colleague at Flinders University (Keeves, 1995). “Education Links” takes students to all higher education institutions in Australia, to universities worldwide, to major Australian education associations and organisations, and to major news media. Perhaps the most useful learning resource of all, particularly where library journal holdings are in scarce supply, is the link to “Educational Electronic Journals”. Assembled here is an extensive list of more than 80 electronic journals from around the world that are scholarly, peer-reviewed, and accessible without cost. Penn State University has a link to this same list of educational electronic journals, which is placed also on the School of Education’s web site (<http://www.flinders.edu.au/education/>). Other links under Learning Resources (see Figure 3) take students to “Research Proposals” presented by previous EdD students at Flinders University, to “Research Articles”, “Reports and Monographs” published mainly by academic staff in the School of Education at Flinders University, to “Theses Online” completed recently in the School, and to an annotated bibliography of “Statistical Sites” containing useful information about statistical methods, statistical programs, and data sets.



**Figure 3. Pull-down menu options showing range of learning resources on CD-ROM**

### **MODES OF LEARNING**

Underlying both the Penn State and the Flinders University online delivery of research methods topics is a focus on creating a social learning environment where students can use other members of the group as a further learning resource. Hence for students at Penn State, the facility to use bulletin boards and email provided by the WebCT platform was an important element of the topic. Similarly for the Flinders program, a discussion forum and email are built in as core elements in teaching the topic. An additional advantage of the in-house discussion forum developed for Approaches to Research is the facility to email members of the group when new responses are added to any thread. Evidence suggests that this facility encourages students to log in to the forum more often since they know that further comments have been added.

As part of the Flinders offering, it is planned that two lecturers will travel to Thailand for a six-day face-to-face intensive teaching/learning session with all students enrolled in the topic. Since students come from different Rajabhat Institutes, most will also need to travel to the residential accommodation provided by the centrally located Nakhonsawan Rajabhat Institute. The major purpose of this residential teaching period is not to impart content since the CD-ROM will previously have been made available and textbooks will have been procured. Rather, the purpose is to develop close-knit interactive working relations among group members that may continue via email and the electronic discussion forum following the residential teaching period.

Penn State used primarily the main and group private bulletin boards as well as course email to achieve an interactive learning environment. While it experimented with chat rooms for the Master's research methods topic, these were used only occasionally by students in planning their group assignments; more often students preferred email to communicate and work together.

### **TOPIC EVALUATION**

The first offering of the Penn State research methods topic was extensively evaluated (Askov, 2001b). A semantic differential type questionnaire was administered at the start and end of the topic. Among the findings, students reported that they felt more comfortable about the use of online teaching as a result of completing the topic. Another key finding is that students found group work useful in the sense that they felt less isolated and that they were participating members of a learning community with set goals and purposes.

Based on the Penn State experience, it is planned to evaluate the Flinders EdD topic taught offshore in Thailand using as a key dimension students' feelings of being at ease with the information and communication technologies in use, what Bandura and others call computer self-efficacy (Bandura, 1997; Eachus & Cassidy, 2001, Jablonski, 2001). An online version of the questionnaire to be administered has been prepared for administering at the start and end of the topic. Besides being used to evaluate the topic, the online instrument will serve as an example of one of the newer methods of research data collection, which is quite appropriate in a topic on research methods.

### **LESSONS LEARNED**

The lessons learned from Penn State's World Campus delivery of the Master's degree research methods topic in adult education are valuable, not only for Flinders University as it embarks on the offshore delivery of its EdD program, but also for other higher education institutions planning to offer programs by flexible delivery. Askov (2001a) identifies institutional support as the most critical factor in delivering online programs and courses. Included in institutional support are technical services to deal with student queries, particularly in sorting out compatibility problems with equipment that often arise at the start of a topic. Institutional support is also critical in developing online course materials if faculty members are not to be unduly overloaded for engaging in distance education.

Askov (2001a) identifies social learning as another key factor if online programs and courses, especially at the graduate level, are to be successful.

Students who are geographically dispersed must be encouraged to form work groups to promote social learning. They must be encouraged to apply what they are learning to their own contexts and situations. Interactivity, on the part of the instructor with students and students with each other, is essential for learning to occur in distance education. (Askov, 2001a, p. 10)

What emerged from the Penn State experience, in particular, was that students said they felt they were part of an online community of scholars when they participated in World Campus courses.

As with all new topic development, it is essential to gauge student opinion about the effectiveness of innovations in teaching approaches and methods. At this relatively early stage in the use of the Internet, CD-ROM, and other communication technologies for teaching, there are many avenues for research if student learning and motivation are to be enhanced. Technological considerations ought not to override what educators know about student learning.

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