

Dr. Victor Udin,  
Director, International Programs,  
College of Education, Iowa State University  
Dr. Niki Davis,  
Professor, Center for Technology in Learning and Teaching,  
College of Education, Iowa State University

Given the recognized ability of technology to transcend many of the traditional barriers of both space and time, the marriage of international education and informational technologies would seem a natural union, providing educators with opportunities for collaboration with colleagues and access to resources never before available (Philson, 1998).

Distance education on university campuses is growing exponentially in the United States - it is predicted that 2.2 million students will be taking online classes in 2002, and 85% of American colleges and universities will be offering those classes in the academic year 2002/2003 (Baydo, 2001). And although availability of the technical means for distance learning course delivery such as computers for web-based courses, video, and interactive television varies from one region to another in the world, it is commonly accepted that distance education is becoming a reality of educational environment not only in the US but also worldwide especially for higher education (Mason, 1998). Rumble (2001) notes that the development of e-education has enabled distance education to overcome lack of interactivity inherent in earlier forms of distance education based on correspondence and mass media, but it looks as if it is also pushing up the costs of distance education. This is particularly relevant for increasing cost to students.

Although an emerging reality, it is yet so new that "moving into technologically mediated instruction and course delivery remains akin to exploring uncharted territory," according to Mitchell, Dipetta and Kerr (2001). In exploring this territory the authors of this paper wish to chart a course that increases access to education and provides socially acceptable approaches, including education that aims to facilitate democracy and the conditions for peace. Additional challenges for web-enhanced teaching include a disparity in countries' economic and political development that leads to a "digital divide," different languages of instruction, time differences, and "issues concerning higher technological skills required from students taking web-based courses impacting the students' ability to gain value from the course" (Schell, 2001).

Some other academic barriers for global distance education are historically predetermined and include credit transferability, mutual recognition of diplomas and degrees, local applicability of gained knowledge, variations in academic cultures, prevailing teaching models, differences in quality and level of computer equipment. Another major challenge that affects the quality of web-based courses for students who major in education is a lack of sensitivity to diversity of languages and cultures. We believe that this omission has serious implications for our profession and the quality of higher education in general.

In an attempt to address some of the issues that stand in the way of web-enhanced courses for future educators on domestic and global arenas, and in order to raise sensitivity to diversity of culture and languages Professor Niki Davis, Centre for Technology in Learning and Teaching, College of Education, Iowa State University brought together a team of American and European colleagues and developed an international project called: ILET, International Leadership for Educational Technology: A Transatlantic Bridge for Doctoral Studies. This paper provides an overview of the strategies that we plan to apply within the framework of this project.

### **Challenges of Study Abroad Programs for Teacher Education**

Study abroad programs constitute a very important part of students' learning experience. Bloom (1998) argues the importance of reconceptualizing education for democracy through pedagogy in the U.S. She advocated that faculty should challenge students to listen to and engage with diverse perspectives, rather than to generalize "quality for all" into one commonly held perspective. Since the international perspectives are currently marginalized, study abroad is one powerful route to help students confront their misconceptions and to find

what is important to support a democratic approach to education. Unfortunately few teacher education majors experience international exchanges when compared to students who major in political sciences, liberal arts and engineering (see Open Doors, 1999). While a deep understanding of a democratic approach to education with an emphasis on diverse approaches is particularly important for students studying to become teachers and teacher educators.

There are a number of reasons why future educators do not participate in global student exchanges, despite their greater need for international and cross-cultural experiences. First, many programs of study in colleges of education have rigid curricula with classes that have to be taken in certain sequence on a home campus. Second, the information technology and access to the flow of cross-cultural information that comes with it is still a new element for school education. Third, there is no clearly articulated demand for teaching professionals with international learning experience. Finally, universities do not have adequate resources to encourage students in education to gain international experience.

Other factors that prevent students in education from going overseas apply to all students who study abroad. When these students immerse in a different academic atmosphere overseas, they tend to feel isolated from their usual learning environment. In addition, they have limited access to the sources of information they are accustomed to at their university campus back at home. These sources include certain journals, reference materials, and the information support that they were receiving from their academic mentors and fellow students.

The ILET project is an attempt to help students in their transition from a home campus to a different learning environment through joining a virtual learning community. In order to create this kind of community and address some challenges of study abroad programs for teacher education, the project team will enhance programs with a web-based library information, collaborative communication and will move some courses online. This approach will familiarize students from the participating institutions with a diversity of cultures and pedagogical approaches. It will also provide students with easy access to diverse sources of information available online. In addition, by taking courses offered through the ILET project, the students will get to know well the participants of global virtual learning programs before meeting them in person. They will also be able to maintain relationships with them after their return.

The ILET project: International Leadership for Educational Technology

The ILET project proposes to engage experts in multimedia and pedagogy within and across six degree programs, and in the process to create innovative multidisciplinary open and distance learning and resources for study abroad that reinforces knowledge about Europe and the USA. Professional and private organisations will partner to promote the diffusion of Intercultural Educational Technology into programs that prepare technology using teacher educators and technology services for faculty across Europe and the USA, while also ensuring peer review. The broad impact of project will be to develop new approaches to the “training the trainers,” namely the education of faculty involved in open and distance learning in higher education.

The integration of these professional and commercial networks into educational technology degree programs is both innovative and essential. In addition to the six leading universities, this consortium incorporates expertise and resources of the largest international professional association for technology-using teacher educators (the Society of Information Technology in Teacher Education, with an award-winning international fellowship of technology-using teachers called MirandaNet, and a multinational software corporation that has made a promise to serve education (the Oracle Corporation, see <http://www.think.com>). The consortium will pool expertise and complementary cultural, linguistic and technical resources in partnership with professional networks.

### **ILET project objectives**

Project objectives have been organized into four categories to assist explanation:

**Cognitive objectives for students and faculty:** Knowledge of educational technology systems, policies and applications, in the USA (and its subcultures) and in European countries, particularly in teacher education; knowledge of theoretical perspectives from anthropology, intercultural communication, comparative education, and second language

acquisition, especially as they apply to the education of minority groups, promoting understanding and appreciation of other cultures, educational exchange, and designing culturally sensitive distance education programs; and understanding of how pedagogical approaches such as student-centred learning, problem based group project work, and action research might be applied in different cultural settings using computer-mediated distance learning.

**Behavioural objectives for students and faculty:** The ability to work on complex tasks in diverse international groups, face to face and when separated in time and space; experience learning and communicating in a second language, for both face to face and through technology; and experience of social integration during study abroad with fellow students and faculty, supplemented by ongoing web-based community interaction.

**Technological objectives for faculty and students:** Further development of technical skills for the variety of international environments, e.g. an ability to adapt to different computer platforms and software; and collaborative development of innovative e-learning environments, including an appreciation of issues related to software development across cultures.

**Organizational objectives:** Create and formally accredit a shared certificate of *Intercultural Educational Technology (IET)* integrated with the doctoral programs of the six transatlantic universities; establish quality assurance and intercultural internships; establish a robust funding base with successful recruitment and expanding partnerships; and create an international education doctoral community (a network of people and organizations who share a common goal/interest/experiences) on the web, linking with professional associations commercial organizations in the EC and USA.

### **Expected results and outcome of the ILET project**

The major planned result is the collaborative creation of a model certificate program that establishes the importance of an intercultural dimension in the preparation of teachers and faculty services. Success will be shown by uptake of resources, approaches to pedagogy and in acceptance of associated refereed papers and awards. Outcomes of each year are:

**Year 1:** Memoranda of Understanding (MOU) between consortium partners for the common specialization, related activities and mobility; advertising brochures and recruitment advertisement on the web and registered with key search engines; collaborative student centred project handbook on the web with information about study abroad. Student recruitment commences and they start to prepare for study abroad.

**Year 2:** Archive of web-based learning and team-teaching, including course syllabi; formative evaluation of IET courses; development and pilot of flexible and distance learning of English (USA & UK), Danish and Catalan on site and on the web; a set of interlinked web-based learning environments to promote intercultural learning; and a pilot intensive international course with its presentations to professionals of EC and USA at the SITE conference. Students take the first foundation IET course and study abroad commences.

**Year 3:** Successful recruitment to this program (transfer of 6 students from existing programs and 18 students recruited specifically to this specialization); students' successful completion and progress through the IET courses, with first graduation; and a publicly accessible database of case studies of good practice and scholarship in IET, plus professional and scholarly publications (at least 6 case studies, 1 dissertation, 6 papers). Students learning portfolios start to provide models of good practice in intercultural education.

### **The development and dissemination of international curricula**

The ILET project will develop a shared certificate in Intercultural Educational Technology (IET), which will be integrated within all six university consortium PhD programs and will serve as the first step towards mutually recognized certificate. The six doctoral programs have excellent reputations for the preparation of teacher educators, instructional and information technology specialists and designers of educational services with particular expertise in educational technology. Education has low participation in study abroad and professional preparation for these important posts does not currently include an international dimension.

Based on previous research and curriculum development, plus negotiations and visits, the following proposed program for the shared certificate in *Intercultural Educational*

*Technology* has been identified. Each course will draw upon expertise from more than one university. These courses will be integrated into each university's target doctoral program and will assist universities in overcoming barriers in the way of distance education outlined earlier in this article:

1. *Foundation for intercultural educational technology*: Study of educational technology systems, pedagogy, educational applications and policy issues in Europe and the USA to establish intercultural understanding.
2. *Cultural preparation and linguistic preparation for study abroad*: Language preparation to European English and American English, plus intensive Danish or Catalan for some students; and an introduction to the cultures and contexts of education and technology in Europe and the USA.
3. *International collaborative project work* that aims to reduce cultural and digital divides. This will be "service learning" undertaken through internships and international team projects supported by web-based learning environments, described later.
4. *Intensive international course*: A workshop integrated into a major professional conference (normally SITE) for an annual cohort of students. Team teaching by the consortium will include briefing of a carefully selected group of expert presentations within the conference and collaborative presentations by students.

Students will also be encouraged to develop their studies by selecting additional optional courses provided by partner universities, and many will also undertake a dissertation in this area. The mutual recognition of credit will permit individual doctoral programs to expand program offerings.

Students will begin to study and graduate from their home university, using the first year to undertake basic doctoral training, the foundation course in IET and to begin their language and cultural preparation. They will study abroad at a transatlantic partner university during the second or third years (or equivalent for part time students). They will also undertake the intensive international course in one of these years.

The dissemination of these international curricula is an integral part of the approach. It will take place through highly visible websites with publicly accessible resources derived from the curricula, through major international conferences for this profession and for international education, and through professional and scholarly articles.

#### **Development of organizational frameworks for student mobility**

A project working group will set up the organizational frameworks for student mobility during the first year of the project. This collaborative work will include:

- **Formal agreements**: Each university will bring a draft Memoranda Of Understanding (MOU) to the first year's project workshop where the consortium will negotiate amendments. All will work to have all MOU signed by the end of the first year. The following Memorandum of Understanding will normally make agreements on tuition and fees explicit, as well as credit recognition and protocols for study and internships abroad. The aim is for students in the IET program to have enriched studies, including student services, library and laboratory facilities, but not to incur additional fees nor to lengthen their studies due to study abroad.
- **Collaborative improvement of services and resources**: Sharing individual approaches to sending and receiving students as well as existing materials, including multimedia, and to plan the adaptation of handbooks to promote student mobility across the consortium. The adapted handbooks for faculty and students will be published on the web. In years 2 and 3 these handbooks will be piloted, evaluated and updated.
- **Collaboration on quality assurance**: Partners will work to develop procedures for quality assurance for study abroad and e-learning. An ILET project Advisory Board will hold a web-based meeting each year to provide guidance for the common IET certificate.

Despite this planning we recognize that there are considerable challenges to our six universities as they attempt to adapt to web-based learning. This is more widely recognized with each year (King, 2001). The lead universities aim to use the project to inform planning, at least at the college/institute level. We will use an approach developed by Niki Davis and

Marie Kemis for the TechCo project in ISU. TechCo's aim for simultaneous renewal in the university and partner schools resulted in the need to develop a strategy to evaluate such renewal. The model under development promotes the active management change with technology with a strategy that undertakes to evaluate and inform systemic change (Davis and Kemis, 2001)

### **Provision of student services**

All universities have undertaken to provide student services for study abroad, which will be enhanced by the ILET project's web-based student services. The constructivist approach to pedagogy will also result in student and faculty contributions to the resource collection and consortium digital library (see web section later). Each university will nominate an International Officer who takes responsibility for orientation and on-site assistance (including housing). The rich professional network of International Officers has already supported project negotiations and planning, including a short exchange between ISU and AAU. Academic advising/personal mentoring will be led by the students' major professor/supervisor with support from the relevant academic study abroad officer. IT and library access will be ready for study abroad students on arrival. Each student will normally be mentored by a local student during study abroad, whom they would have "met" and possibly worked with online. Student associations will facilitate social and cultural interaction; for example, the Erasmus Student Network has branch associations at many universities in Europe.

### **Development of adequate language and cultural preparation and assessment**

Language and cultural preparation and assessment are planned to occur at three stages: prior to the study abroad; upon arrival; and upon the student's return to his/her home university. ILET's goal is to create flexible learning modules that meet the needs of individual students, yet assure that all students develop an agreed-upon level of language competency and cultural understanding.

**English language and culture (American/British):** Most components of the shared IET certificate will be conducted in English, so all participants from all partner universities will be required to demonstrate a high level of English language proficiency, by providing a TOEFL test score of 500, at the time of their admission to a PhD program or prior to their study abroad, unless they have already successfully studied in English in their home university.

In the semesters prior to their study abroad, ILET doctoral students will undertake English language and culture study at their home universities, depending on the student's individual language needs. The home campus language study will be supplemented by a computer-mediated instructional package that compares and contrasts American and British English language and culture. One semester prior to study abroad, USA-based ILET students and London-based ILET students will be paired as conversational partners and will be encouraged to "chat" with one another, both in writing and orally, using NetMeeting technology. Students will also find information about their host universities on the ILET website. In the final weeks before departure, a 30 minute discussion conducted in the target language about topics introduced in the instructional package and on the website will be recorded. This discussion will be archived and compared to a similar taped discussion that will be made upon the student's return.

Upon their return to their home universities, ILET students will be asked to serve as mentors and local informants for ILET students from partner universities. They will also be invited to make additions to the ILET website and to publish revised entries from their journals. Students will themselves design any follow-up English language study they believe is necessary.

**Other languages/cultures:** All students will be encouraged to gain an appreciation of Danish and Catalan culture through collaborative group work during the IET certificate. In addition, special arrangements will be made to prepare students for study abroad at Aalborg (Denmark) and Barcelona (Spain), because Danish and Catalan are not taught at the ILET partner universities in the USA. Some proficiency in spoken Danish and Catalan will ease social

integration and make available a wider range of internship and project work opportunities, but we do not anticipate that ILET students who study Danish and Catalan will achieve the same level of proficiency as those who study English as a second language. We will concentrate on developing proficiency in listening comprehensive, pronunciation and conversation, after introducing basic structural language patterns. It should be noted that the doctoral program in Human Centered Informatics at Aalborg University is conducted entirely in English and the University of Barcelona teaches mainly in Spanish.

#### **Use of web-based and other computer-based technologies**

One goal of this project is to establish a flagship approach to open and distance learning globally with respect to: pedagogy, quality appraisal, and service across digital and cultural divides. Partners are convinced that their teaching should model good practice for education, technology and intercultural learning. The main collegial learning and teaching environment for staff and students in the doctoral program will be established with web-based tools rich in multimedia and well connected to professional learning communities.

Innovative pedagogies will result in the creation of multimedia “content”, using problem-based learning and learning portfolios. The first transatlantic course in the “Principles and practices of distance education” has already been successfully piloted between the London and Iowa, mainly utilizing the online course toolset WebCT which may be accessed through any standard Internet browser software. Students studied cases of distance education and undertook a group project that gave them experience and expertise as distance educators. Students in both locations found the sharing of their class to be very motivating and it resulted in excellent academic dialogue as well as new resources for later iterations of the course. Several projects also provided a service, including one that produced a blueprint for a transatlantic doctoral community, which is illustrated in Figure 1. In addition, students’ learning portfolios will become increasingly rich and accessible on the web, thus facilitating the international collaboration and additional resources for all. An alternative and complementary approach developed between Iowa and Denmark is described in Sorensen & Tackel (2001).

The ongoing scholarly online community will be energized and focused by high intensity experiences for individuals traveling in person and through synchronous “live” audio and videoconferences. The Coalition of IT in Teacher Education, a subset of our university partners, has recently developed new approaches to synchronous “live” collaborative classrooms. The coalition has set up collaborative classrooms that use simultaneous computer, audio, video conferencing connected over Internet 2 in such a way that on several occasions classes linked together have commented that they felt they were in the same room. Although the addition of the transatlantic distance and technical protocols will be challenging, we have already proved the success of reducing communication to a phone and shared Internet screen. This will be the early form of intensive simultaneous teaching across classrooms.

Developments are also already underway with digital library projects in a number of partner universities. London, in collaboration with other UK universities provides SOSIG: The Social Sciences Information Gateway ([http://\\*\\*](http://**)). The University of Virginia is leading the development of a portal for technology and teacher education (described in Bull et al, 2001), to which will be added relevant European journals such as the Journal of Information Technology for Teacher Education (<http://www.triangle.co.uk/jit>). The ILET project will use and promote the development of these digital libraries and associated web resources.

#### **Course on Globalization of Higher Education Goes Online**

The next course that will be made more accessible for web-enhanced study abroad will be a course on Globalization of Higher Education offered by Dr. Udin and his colleagues. During spring 2002 one third of the semester’s 15 sessions will move online led by Professor Niki Davis. Although at first this approach will limit accessibility of the course to international off-campus students, in the long run it will allow us to build an international virtual learning community where everybody who teaches and takes this course will be contributing to the development of its content regardless of location.

The course covers such topics as globalization of higher education, internationalization of universities, management of internationalization process as an organizational change, international programs development, and using of learning technology

to enhance the process of internationalization. As in previous years some topics will be covered by expert guest speakers to enhance the content of the course, for example the session devoted to study abroad programs will be covered by Dr. Trevor Nelson, ISU Director of Study Abroad Center; and the session devoted to internationalization as an organizational change will be taught by Professor Walt Gmelch, Dean, ISU College of Education. In addition, as the course moves online experts may be drawn from partner locations, such as in Aalborg, Denmark. The topic of technology use will be led by Professor Niki Davis, and she will change the approach of one third of the course to let student experience technology in education and to use it to support their reflection and group work over a longer period.

The project team will actively research and develop ways in which to use web-based teaching techniques to offer courses with sensitivity to diverse languages and cultures and as a model for democratic approaches to education during the process of moving this Globalization of Higher Education into a web enhanced mode of study. Assessment and grading will also be adjusted with student group projects and a web-based discussion of the individual reflective journals that the students will be required to keep.

### **Conclusions**

It is widely recognized today that technology is playing a critical role in preparation of future educators and in higher education, with significant moves towards globalisation (Mason, 1998). It is now clear that web-enhanced learning is going to become even more prominent in graduate courses for educational technology, and new faculty need to be prepared to work in an international environment.

The speed with which these programs are being developed raises a question about the organization of these courses and study abroad programs, especially with degree programs that link international learning communities of educators and students. These programs, although potentially able to address some challenges of the traditional approach to study abroad, such as students' recruitment and their feeling of isolation when aboard, have yet to address challenges related to cultural diversity and language.

This paper has provided an overview of strategies for web-enhanced study abroad, which are being developed by a team of scholars and international programs administrators led by Professor Niki Davis in the project "International Leadership for Educational Technology." As noted, this project provides opportunities to increase collaboration between various graduate programs in educational technology. It also has provisions for student mobility and creation of a joint certificate in inter-cultural awareness. In addition, the project will work to increase sensitivity, diversity, and language in online teacher preparation programs. The organizational challenges that will be addressed include credit transferability, disparity in tuitions and fees, recognition of courses and a shared certificate by the six participating universities. This project is in its initial stage and it remains to be seen how far the project team will be able to advance their cause. We believe the fact that such a large and diverse group of scholars and administrators from Europe and the USA was able to agree on the main principles of the web-enhanced study abroad program is a significant accomplishment.

We hope that the strategies used in this project will prove to be of value in higher education more broadly. The students themselves will provide the strongest dissemination as they move into strategic positions within higher and vocational education worldwide. It is notable that ISU, among others, welcomes more than 10 teacher educators from Central and Eastern Europe into its Curriculum and Instructional Technology program each year and leads a major technology and teacher educational reform project in the Ukraine (Willis, in preparation). In addition, The Universal Forum of Cultures Education Project in Barcelona in 2004 will provide a community platform for the ILET project to disseminate its "service learning" across digital and cultural divides on the web and in Barcelona in 2004 and so bring curricula to the attention of bodies including UNESCO and national agencies (Davis, 2001; <http://www.barcelona2004.org>).

This paper provides a view of how the marriage of information technology and international education may be achieved, as proposed by Philson (1998). However, it suggests that there is more to do than to collaborate with colleagues and provide increased access to resources. In addition, we need to work to create learning communities that span cultures, languages and continents. We recognize the dangers of globalization and a bland common

universality. Our collaborative development through the ILET project aims to promote understanding and respect for multicultural perspectives in learning and teaching in higher education and in the preparation of teachers generally. In doing so we aim to support education for democracy and to assist in increasing the conditions for world peace.

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Figure 1. The model of distance education for the Transatlantic Doctoral Community developed by a group of students studying with Dr Davis in Summer 2001.

