

A MODULAR APPROACH TO EDUCATIONAL TECHNOLOGY PROFESSIONAL DEVELOPMENT AMONG POST-SECONDARY EDUCATORS IN ALBERTA, CANADA

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Opportunities

There is a subtle shift in the population of learners throughout the developed world which raises new opportunities and problems for Postsecondary Institutions (PSI). Briefly, these include the following:

- More work flexibility and career changes
- Adults unable or unwilling to disrupt their normal routines to return to school
- Aging population of learners
- Existing jobs are changing rapidly due to technology advances and global competition
- On-line instructional approaches are becoming more affordable, e.g., CAI, CMI, Video- and audio-conferencing, Web-Based Instruction, e-mail and fax.

Educational institutions have been criticized for their lack of quick action in recognizing and responding to these crucial changes. And while information technology has had great influence on the lives of people around the world, educational technology has been slow to be adopted and considered to meet the new opportunities. These factors suggest the need for professional development of instructors to prepare them to use educational technology more effectively and extensively during these times of rapid change.

Solution

In an effort to ensure that faculty have the basic skills necessary to use technology in an effective manner, 13 PSIs collaborated to produce a modular educational technology professional development program (ETPD) that could be delivered in both a face-to-face conventional manner or via distance.

The solution this project addresses is the development of a series of print-based modules on selected aspects of educational technology that provide professional development opportunities for instructors in PSIs. The print-based approach was initially chosen for its low cost and because most

instructors who have not made a transition to using educational technology continue to have a strong level of comfort with print.

A survey of resources revealed a dearth of existing materials that would meet our needs in a manner relevant to our environment. There was a need for materials prepared by educators and for educators. We also required materials that model learner-centred activities and a mechanism for optional certification of successful completion for promotion and recognition.

In 1996, the Provincial Department of Advanced Education and Manpower made available CD\$10M annually to promote alternative delivery systems which use instructional technology and expand access to all citizens of the province. A series of collaborative proposals was developed by Grant MacEwan Community College and The Northern Alberta Institute of Technology. The proposals outlined the development of a modular educational technology professional program that could serve faculty teaching throughout the PSIs in Alberta.

Funding for Phase I was approved and resulted in the production and validation of 25 print-based modules on key topics in educational technology. Faculty and staff from many of Alberta's technical institutes, colleges and universities participated in one or more of these modules which were completed during the summer of 1997. Participants may obtain certificated credit from the University of Alberta and/or continuing education credit from their home institutions in recognition of their successful completion of modules.

Phase II, scheduled for completion by summer of 1999 will involve the transformation of the original modules, in addition to five new modules to interactive, multimedia format suitable for WWW delivery. In addition, one facilitator has been hired at each of the principle institutions to provide training to faculty and staff using the print-based modules and auxiliary resources at their respective institutions.

The goals of this workshop are to 1) discuss issues related to open learning in PSIs within the Commonwealth, 2) identify institutions and agencies with similar solutions for further collaboration and research, and 3) demonstrate the content, structure, materials and delivery methodologies for Phases I & II above.

The Educational Technology Professional Development (ETPD) Modules

The modules have been created in print format which are designed for self-study and individual learning at the convenience (time and location) of the learner. The titles of the modules are listed below:

Module Titles

Educational Technology Core

- Survey of Educational Technology
- Independent Study and Distance Education
- Instructional Design
- Design and Layout of Print-Based Learning Materials
- PowerPoint: An Introduction
- Internet: An Introduction
- Electronic Search Techniques
- Survey of Educational Technology Research
- Managing Student Data and Historical Records

Areas of Specialization

- Distributed Learning: Adapting Your Course
- Writing a Print-Based Module
- Presentation Graphics: Advanced PowerPoint Techniques
- Audio Conferencing
- Audiographics
- Videoconferencing: An Introduction
- Videoconferencing: Instructional Techniques
- Internet: Web Page Design
- Computer-Managed Learning: An Introduction
- Computer-Assisted Instruction: An Introduction
- Authoring Tools: A Survey

Authorware: An Introduction
 Authorware: Advanced Applications
 CD-ROM: Planning and Production
 CD-ROM: Aspects of Burning a Disc
 Groupware for Educators: Using Lotus Notes

Module Structure

Each module conforms to the same structure for consistency and minimal re-learning. The elements of the structure and rationale for them is listed below.

ELEMENTS	RATIONALE
What's in it for me?	A motivational introduction which links the module contents with the user
Learning Guide	Contains estimated completions time, required and recommended learning resources, learning tips, goal of the module, learning outcomes, learning objectives, prerequisites, and corequisites
Pretest	A self-test which covers the content of the module
Connection Activity	An attempt to bridge the gap between the learners' experience with conventional instruction and the information about educational technology-based instruction to be presented in the module
Objectives	Statements of what the learning is expected to be able to do upon completion of the module
Module Content	The content and learning activities are presented for use in a self-paced format suitable for individual or cooperative learning
Module Summary	A review of the major learning points in the module
Credit	Instructions to obtain credit for the modules
Suggested Answers	Answers to the pretest for self-evaluation
References	A list of reference materials needed for the module
Additional Resources	Additional relevant learning resources to support the objectives and goals of the module

Module Development: Phase I

The funding allowed for a consortium of developers from various institutions across Alberta, including:

- Grant MacEwan Community College (lead institution)
- The Northern Alberta Institute of Technology (lead institution)
- Alberta Vocational College-Calgary
- Alberta Vocational College-Edmonton
- Athabasca university
- Keyano College
- Lethbridge Community College
- Medicine Hat College
- Mount Royal College
- Olds College
- Red Deer College
- Southern Alberta Institute of Technology
- University of Alberta

Individuals or teams with expertise in the content areas from the above institutions were contacted and invited to submit brief letters of intent to write one or more of the modules starting in 1996. The format for modules was agreed upon, contracts let for writers, and a graphics artist and editor hired.

Each module was carefully reviewed by at least two other module developers and feedback was provided. Subsequently each module was reviewed by one or more individuals from the writer's home

institution with feedback provided. The resulting modules were reviewed for editorial concerns and graphical cover pages were designed.

Module Development: Phase II

Funding was obtained to make the instruction from the print-based modules available in enhanced format on the World Wide Web. In addition to changing the delivery mechanism, additional features were added, including multimedia, hyperlinks to other resources, and interactive learning activities. The contrast between print- and web-based instructional materials should serve as a useful model from which the instructors might launch further development and training initiatives. A set of design guidelines has been developed and work is currently underway in this phase, to be completed by summer 1999.

The second component of Phase II is dissemination of training. To accommodate that, each of the institutions represented by the authors hired a full time facilitator for one year to provide expanded training using the print-based modules.

Conclusion

Sweeping changes in the information age and educational technology provide new pressures to accommodate different needs of learners, educational institutions, and training organizations. A response of the Province of Alberta has been to focus on solving the problem of preparing instructors for the transition from conventional instruction to instruction that is based on interactive educational technology. Funding provided by the Province has enabled 13 post secondary institutions to develop print- and web-based instruction to be used in the professional development of faculty and staff. It is hoped the professional development will result in increases in appropriate use of educational technology in the classroom and an investigation of the role educational technology may have in the eventual transformation of the way education is conceived educational services are delivered.