

**PROFESSIONAL DEVELOPMENT ABOUT LEARNING TECHNOLOGIES:
DEVELOPING EFFECTIVE APPROACHES FOR EDUCATORS AND TRAINERS IN
CANADA**

Judith M. Roberts, Ian Mugridge, and Erin M. Keough

Judy Roberts & Associates/Associés Inc., Toronto

Contact Person:

Judith M. (Judy) Roberts

President

Judy Roberts & Associates/Associés Inc.

20 Prince Arthur Avenue

Suite 9G

Toronto ON M5R 1B1

Tel: (416) 929-6283

Fax: (416) 929-4454

judyrobe@istar.ca

www.RobertsAssoc.on.ca

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The views expressed in this paper are those of the authors and do not necessarily reflect the views of E/TPN, CAETO, OLT or the *Roberts & Associates/Associés* team that prepared the original report.

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Judy Roberts

Ian Mugridge

Erin Keough

INTRODUCTION

The dramatic increase in the number of technology-based modes for developing and delivering education and training has far exceeded the capacity of educators and trainers to keep current. Front-line practitioners (professors, teachers, community-based trainers and corporate trainers), planners (senior staff) and policy makers (board members and government officials) must consider the teaching/learning process in new ways. They must also understand and master the various technologies involved if they are to make appropriate decisions about the role(s) that learning technologies will play in classroom, community and workplace learning. A literature review, an analysis of issues and trends and a source of information about professional development programs would be key tools for effective action.

The Education and Training Provider Network (E/TPN) was an experimental project, launched in 1995, among Canada's leading national education and training associations. Its success has resulted in the formation of a permanent organization for networking and collaborative action, the Canadian Alliance of Education and Training Organizations (CAETO).

After extensive consultation, the Professional Development and Learning Technologies Working Group was formed. To achieve its initial objectives, the Working Group contracted *Roberts & Associates/Associés* (RAA) to complete a three-part research project funded largely by the Office of

Learning Technologies (OLT). Target audiences for the report included practitioners, planners and policy makers in schools, community colleges, universities, community-based training organizations and private trainers and private (career) colleges.

This project was designed to:

1. Determine the professional development needs of planners and practitioners in learning technologies through a analysis of the secondary literature;
2. Analyze the issues and trends in current professional development practices for educators/trainers in the area of learning technologies, including the identification of various criteria/assessment tools used to determine best practices; and
3. Conduct a national survey to identify professional development activities for planners, practitioners and policy makers as input to a Canadian database.

DEFINITIONS

Learning technologies include information and communications technologies such as computer- and web-based learning, audio and audiographic conferencing, CD-ROMs, videoconferencing and other self-study and/or group-based, interactive learning technologies.

Professional development practices refers to the range of activities commonly grouped under professional development that include, but are not limited to, the following:

- subject matter and special topic conferences;
- programs consisting of courses/credits;
- workshops, training programs and institutes;
- programmes for professional associations and special interest groups;
- reading circles; and,
- awards and incentive programs promoting innovation.

METHODS

As mandated by E/TPN, the professional development needs of education/training practitioners, planners and policy-makers in the area of learning technologies were covered through a secondary analysis of the literature, both English and French, from 1990 to the present. Literature surveyed included sources in Canada, the United States and other major countries publishing in the field.

Issues, trends and best practices were identified in telephone interviews of the E/TPN Professional Development and Learning Technologies Working Group members and selected opinion leaders from the school, college, university, career college, community and private sectors in Canada. Forty-six (46) people were interviewed.

Existing professional development activities were identified in the telephone interviews and through a review of relevant databases. Workshops, conferences and seminars from 1996-97 and 1997-98 were listed to illustrate both past and current activities.

RESULTS AND ANALYSIS

Interesting similarities and differences emerged related to the needs, issues, trends, best practices and activities for the education and training sector. This section comments *first*, on the literature review; *second*, on themes common to all sectors and all groups; *third*, on themes unique to a particular sector or group; and *fourth*, on professional development activities related to learning technologies.

Literature Review

There is a broad body of literature about professional development needs related to learning technologies. However, a number of gaps seem to exist in this research.

- School-based practitioners and planners needs are addressed in both the Canadian and international literature but not those of policy makers.

- A recent study on Canadian colleges/institutes addressed the needs of practitioners and policy-makers, but not planners (ACCC, 1997). No literature was found regarding colleges outside Canada.
- The university literature regarding practitioners was almost exclusively international with little material on the Canadian experience. University planners or policy makers needs in either a national or international context were not covered.
- Neither the community-based training nor the private/corporate sectors differentiated between the three groups of personnel targeted by E/TPN for the study.
- The community-based training findings are based only on Canadian literature, as no other material was found.
- The private/corporate sector results are based on both Canadian and international research.
- No literature was found related to professional development about learning technologies in the private career college sector.

Three additional points are critical to appreciating the current literature.

- The professional development needs of learning designers, evaluation specialists, technicians and other learning technology team members are not specifically addressed in the literature. Although RAA may have missed those references because E/TPN did not target those groups, the key word database searches were so generic that some references to them should have emerged. Even though formal research is lacking, many professional development activities are targeted to these groups. It may be useful to understand more about the informal needs assessment processes used in planning these events and to share the results of such processes in the literature.
- Groups critical to successful use of learning technologies, like librarians (Kascus, 1994, 1995), were in the literature but not included in the E/TPN terms of reference.
- The learners' voices are poorly reflected in the literature. Books by Evans (1994) and the Office of Learning Technologies (1998) are rare examples of materials that make learners' perspectives the prime focus rather than treating learners as a "sub topic". In our view, research on learners' needs is needed to inform professional development for educators and trainers since a key point in such sessions is the importance of understanding learners' perspectives in planning appropriate applications of learning technologies.

Common Themes

A striking finding is the commonality of needs, issues, trends, professional development objectives and criteria for best practices within and across the sectors studied. Although the qualitative research approach adopted in the study did not permit ranking of needs, issues or trends, the report's authors shared their view of priority commonalities and differences, which we have amended slightly to reflect our own views.

Needs

- All sectors reported a short fall in the critical and interrelated issues of time, access and resources.
- Time is needed to learn and then reflect, practise and reinforce learning. Lack of time is seen as a critical impediment to participation in professional development and often leads to "resistance" to the adoption of learning technologies.
- Regularly organized, ongoing, and varied professional development activities are needed based upon specific needs assessments, not the top-down approach *now* commonly used. Burge & Howard (1992) illustrates a specific needs assessment process.
- Stakeholders reported that, once convinced of tangible ways in which students will benefit *from* learning technologies, educators and trainers are more likely to participate in professional development activities.
- Professional development activities related to learning technologies should use the technologies to present and discuss the new pedagogical models and roles that educators and trainers must assume to use learning technologies effectively.
- More information is needed on learning and instructional theories, including those on which new "learning technology" pedagogy is based. Notwithstanding this emphasis on theory, practical "how-to" sessions are also needed.

- Concise, usable information about best practices was often requested, in both generic and sector-specific formats.

Issues

- Equitable access to technology is a fundamental issue for everyone. It is difficult to motivate participation in professional development when the infrastructure does not exist to implement what is learned. However, the cost of acquiring, maintaining and upgrading learning technologies challenges the provision of access.
- Planners and/or policy makers in most sectors questioned the pace of change and the fashionableness of learning technologies: they are a “fad” (schools) or the object of a lot of “hype” (colleges). Many remain unconvinced of the extent to which learners will benefit from investment in learning technologies and want a vision of such gains.
- Intellectual property rights, copyright and control of the teaching process are important issues in the college and university sectors where topics such as individual and team ownership or institutional and personal ownership of the process and results of using learning technologies are still being debated. Until they are resolved, many practitioners are reluctant to participate in professional development.
- There is widespread recognition that the conventional subject-based presentation model of teaching must change when learning technologies are used appropriately, an awareness unreflected in widespread behavioural change such as participation in professional development about the new models.
- Some groups in some sectors recognized that face-to-face professional development was no longer feasible if *all* educators and trainers are to be reached.

Trends

Common trends include:

- Increased partnerships with business to implement technologies in the public sector;
- The “use technology to teach technology” approach to delivering professional development;
- Interest in digital, web-based, electronic information technologies; and,
- Interest in understanding the impact of learning technologies on teaching and learning.

Professional Development Objectives and Best Practices

- Professional development activities should be an integral part of the culture of all sectors and groups, respond to targeted needs and, in all facets of their planning, delivery and evaluation, model all the behaviours that they advocate, including a cycle of reflection and reinforcement.
- Professional development would reflect best practice if it:
 - Reflected the reality of participants’ classroom, planning or policy making venues;
 - Contained practical and theoretical content;
 - Used learning technologies to teach people about learning technologies; and
 - Applied a collaborative rather than “solo practitioner” model of presentation.
- The results revealed that practitioners, planners and policy makers disagree somewhat with researchers about the need for professional development that tries to create a new vision of teaching and learning based on learning technologies. While researchers made a case for much more professional development about learning and instructional theories, respondents mentioned it only in passing.

Unique Themes

Schools

- Parents strongly support use of learning technologies in schools and presumably indirectly motivate teachers to participate in professional development about learning technologies.
- Faculties of education are seen as “far behind” in recognizing the importance of learning technologies and equipping trainee teachers to use learning technologies appropriately. When graduated, such teachers have no skill set that they wish to update through professional development.

Colleges/Institutes

Colleges/institutes are unique in:

- Emphasizing the importance of instructional design as a key professional development focus;
- Stressing the importance of personnel acquiring brokering and partnering skills; and
- Addressing the professional development needs of policy makers. Their approach could serve as a starting point for all other sectors with its emphasis on (1) institution-wide forums on best practice, (2) national discipline-based initiatives, (3) standard setting, (4) developing best practices in financing learning technologies, and (5) more peer learning among managers (ACCC,1997).

Universities

- Stakeholders in this sector emphasized the importance of faculty reward systems (although that issue was also pertinent to colleges) but stressed that the more general issue is that teaching is systematically under-valued in this sector and has to be legitimized. Faculty are unlikely to participate in professional development about a sub-set of teaching skills in such an environment.
- The team model is not familiar in universities. Professional development that facilitates the change to a team-based process was stressed more urgently in this sector than any other.
- The issue of whether faculty or management controls the teaching process affects the adoption of learning technologies and participation in professional development about them. The time required to prepare and deliver content through learning technologies is becoming a contractual issue.

Career (Private) Colleges

- Learning technologies are not yet as significant an issue in this sector. However, since this sector's biggest issue is keeping current with workplace trends, its adoption of learning technologies and participation in related professional development may be paced by developments in the private/corporate training sector.
- Critical issues in adopting learning technologies that this sector was unique in mentioning include:
 - Colleges need to acquire new technologies and mount new programmes without relinquishing old ones;
 - Affordability of technologies to be used in the colleges – including learning technologies – is a challenge affecting participation in professional development.
 - Except for British Columbia, there is no professional certification for instructors in this sector, and thus no incentive to participate in professional development leading to certification in learning technologies.

Community-based Training

- Equitable access to learning technologies is particularly limited for this sector, resulting in very little attention to professional development.
- This sector was unique in mentioning issues like literacy, gender, age, poverty and culture as critical factors affecting access and equity regarding learning technologies and related professional development.
- This sector uses tutors on a regular basis, and referred to them often in interviews, unlike any of the other five sectors. Tutors would thus be an important target audience for professional development in this sector.
- An organized community-based training infrastructure exists only in Ontario, Quebec and British Columbia which may make developing a national, sector-wide approach to professional development in learning technologies less feasible.
- This sector's trainers and learners need less formal and simpler professional development support materials than those in other sectors.

Private/Corporate Training

- This sector is moving to empower learners to take control of their own learning and is changing its traditional training processes, both important tenets of learning technology research
- Unique needs of this sector focus on change management, project planning and business case development, strategic thinking and emphasis on interpersonal skills (customer service) – mindsets that other sectors are only coming to realize are needed if learning technologies are to be used successfully.
- More Level 3 (behaviour) and Level 4 (results) evaluations of the impact of learning technologies are needed for this sector to adopt them quickly (Kirkpatrick, 1998).

Professional Development Activities

- There is much formal and informal activity enabling educators and trainers to learn about using learning technologies.
- There is a wide range of activities available for cross-sectoral target audiences. These activities tend to be offered by national organizations that specialize in distance education. Some provincial activity occurs where the organizational infrastructure exists.
- Sectoral organizations offer individual sessions about learning technologies as part of larger, usually annual, conferences. Learning technologies may not be widely adopted until (1) sectoral organizations offer the breadth and depth of activities presently organized by the distance education community and (2) these activities are tailored to unique stakeholder needs.
- The report lists activities offered by organizations with a good reputations in the field but this is no guarantee of quality (CAETO, 1998). Since the number of activities offered will expand and less well known bodies will begin offering events, the development of indicators of quality professional development is a pressing issue. Activities should be researched carefully using strategies such as consulting previous participants, looking for clearly articulated appropriate learning objectives, and investigating the stature and expertise of speakers and resource persons.

Since programs emerge on almost a daily basis, the proposed OLT database is a critical tool since it can be more readily updated than a paper-based report.

CONCLUSIONS & RECOMMENDATIONS

This analysis indicates that the challenge facing organizers of professional development about learning technologies involves not merely the proliferation of such technologies but a complex web of interacting needs, issues, trends and activities that must be carefully considered to appreciate those that are sector and group specific and those that are so pervasive that only collaborative efforts can address them appropriately.

Two points should be made, however, when considering the findings presented in this paper. First, international literature or in-house studies may exist that were not found in the E/TPN study's keyword search of databases such as ERIC. Second, some issues presented as unique to one sector may apply to others – the point is that they were only mentioned by interviewees or reports as specific to one sector.

More specifically, the report challenged Canadians to undertake specific actions related to creating effective preconditions for professional development, undertaking research and changing their practice.

Preconditions for change

- *Valuing Teaching:* While universities stand out in their tendency to ignore excellence in teaching for tenure and promotion, all sectors could benefit from more attention *to* outstanding practice in *applying* learning technologies.
- *Lobbying for Infrastructure:* Professional development programs may ultimately depend heavily on the availability of infrastructure to attract broad participation; attendees need to see the potential to implement what they have learned. Hence, advocates of “more and better” professional development may not be able to ignore the larger issue of connectivity.

- *Certifying Educators and Trainers:* Whether at the school, workplace or university level, sector-suitable mechanisms should be considered to certify competency as an educator or trainer, including using learning technologies, both pre- and in-service.
- *Owning Learning Technologies:* Professional development must move into the sectors and away from the generic distance education organizations if learning technologies are to permeate all sectors.
- *Avoiding Tunnel Vision:* While there can be no doubt that the Web and other digital technologies hold great promise, it is important not to overlook the contribution of other modalities when developing learning technology strategies and appropriate professional development.

Undertaking research

- *Conducting Research:* Gaps exist. For example, Canadian research seems needed about university and career college stakeholder needs and about planners' and policy makers' needs in all sectors.
- *Communicating Results:* Existing literature strongly suggests that learning technologies do benefit students, but many interviewees noted that is not generally understood. Research results thus need to be much more effectively communicated and tailored to stakeholder groups in each sector.
- *Maintaining a Data Base:* Once OLT mounts the E/TPN study's data on its web site, it and its partners will need to develop and implement a strategy that addresses issues of information currency, assessment of quality and transparent, accessible navigation.

Changing professional development practice

- *Modelling Best Practices:* Professional development programs modelling the desired outcomes in all aspects of their design, development, delivery and evaluation should become embedded in the culture of all sectors.
- *Organizing Department/Discipline Specific Professional Development:* Focused, needs-based professional development is needed to serve targeted groups within each sector. Cross-sectoral sharing by subject/discipline should occur as appropriate.
- *Developing Materials:* While all sectors can benefit from the development and widespread circulation of information on the practice and theory in the application of learning technologies, this need is particularly acute in the community-based learning sector whose practitioners and learners are different from those in other sectors.
- *Profiling Learning Technologies in Career Colleges:* More work is required to understand the career college sector and to determine appropriate role(s) for learning technologies.
- *Including Learners:* To the extent that most learning technology theory and practice focuses on the learner, the lack of attention to learner perspectives in professional development activities must be addressed. Without documented evidence that learners benefit, resistance continues. Who better to present the benefits than learners themselves? While the E/TPN study may have missed studies on learners because of the key words it used in its search, it is our impression that there is a genuine gap in professional research on this topic.

This Canadian study provides interesting insights into important issues. The question for international readers is whether equivalent studies are needed elsewhere and, if so, how they can be funded and undertaken.

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