# Staff Perceptions of E-Learning in a Community Health Care Organization

*Monica Gabriel*
*BScN, MEd*
monica.gabriel@yorkregion.ccac-ont.ca

*Sandra Longman*
*BScN, MA(Ed)*
sandra.longman@senecac.on.ca

The world is changing at an ever-increasing pace. The one constant we can depend on is change. Today, rapid and accurate acquisition of knowledge is essential in order for organizations to capture the competitive advantage and remain viable. However, the challenges are far-reaching. How do organizations cope with the increased speed of technological change? How do leaders optimize resources with tightened budgets? How do staff and students acquire the necessary knowledge and skills in the midst of constant change? Administrators, educators and researchers alike are seeking ways to effectively use technology to gather information, construct knowledge, develop skills, and collaborate globally for lifelong learning and work (Kimble, 1999; Buckley, 1995; Bates & Bartolic-Zlomislic, 2000).

Electronic learning (e-learning) is one form of learning that utilizes technology to deliver, interact or facilitate information (DeSantis, 2003) However, to use e-learning effectively requires methodical gathering of information from research and best practices in both technology and learning (Wenzel, 1998; Trotter, 1998; McClenney, 1998; Bates & Bartolic-Zlomislic, 2000; Rumble, 2000). In a strategic implementation process, effective administrators and educators make a point of knowing their learners' perceptions (Zariski & Styles, 2000; Bates & Bartolic-Zlomislic, 2000; Broadbent, 2000; Zafeiriou, Nunes, & Ford, 2001). Just as there are extreme advocates of online learning, others are more reticent regarding the positive changes connected to technology (Salomon, Perkins, & Globerson, 1991; Lockard, Abrams, & Many,1994; Harper, 1994; Cruz, 1999; Patterson, 2001; Settlage, 1995; Cummings, 1996). Similarly, learners have a broad range of perceptions and attitudes about the concept of e-learning (Pedretti, Woodrow, & Mayer-Smith, 1998; McGraw-Hill Ryerson, 2000; O'Malley, 1999). These perceptions and attitudes should be acknowledged and accommodated as administrators and educators consider the successful integration of online learning into their organization.  This deliberate process provides the organization with adequate time to gather data about the underlying perceptions and potentially influence the outcomes in the organization.

Significant research has been done on the effects of specific technological interventions; on the development of specific curriculum tools; on academic achievement; and on the use of computer-assisted instruction (Brungardt, & Zollman, 1995; Gordon, Polman, & Pea, 1994; Lazarowitz, & Huppert, 1993; Lockard, Abrams, & Many, 1994). However, very little research is available on the learners' perception of the online experience (Pedretti, Woodrow, & Mayer-Smith, 1998; Teh, 1999; McGraw-Hill Ryerson, 2000; Stewart, & Sanchez, 2003; Zariski, & Styles, 2000). Consequently, very little is known about *how* students go about learning online

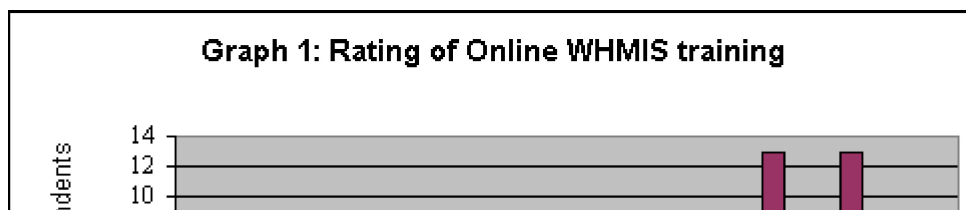and their perceptions of this mode of learning.


**Study**

This study set out to specifically examine the range of perceptions, attitudes, and responses of learners to an e-learning mode of delivery for Workplace Hazardous Materials Information System (WHMIS) training in a community health care organization. The vast growth of the organization and the constant changes in technology motivated the Community Care Access Centre of York Region (CCAC) to consider different venues in which to deliver education and training. The intent was to assist the CCAC administrators and educators in the decision-making process with how to best train staff in a rapidly changing and fiscally challenged work environment.  By understanding the staff's perceptions of e-learning, the administrators and educators can look at current practices and modify approaches to training in order to better meet the needs of the individual learner and the educational and fiscal needs of the organization.
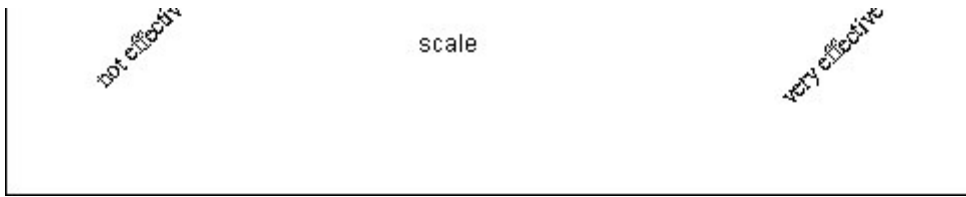
A qualitative action research study was utilized to examine the CCAC staff's perceptions of e-learning as a mode of educational delivery. Fifty staff attended a two hour on line session to learn about WHMIS, a mandatory workplace training requirement. The WHMIS legislation provides employees, employers and suppliers nationwide with specific information about hazardous materials known in the legislation as "controlled products" (Government of Canada, 2003). Learners completed the on-line program at individual computer terminals with ten other participants. Headsets were worn to minimize distractions and a test of their knowledge was completed at the end of the session. Learners had access to a facilitator for questions or technical problems.

Surveys and semi-structured, audiotaped interviews were the primary data collection methods. Thirty-two case managers, who are primarily nurses and eighteen other staff members, completed a total of fifty surveys.  In-depth, semi-structured interviews were conducted with seven respondents that included two case managers, two support staff, the database coordinator, one director and one supervisor. Each interview was tape recorded and transcribed verbatim.
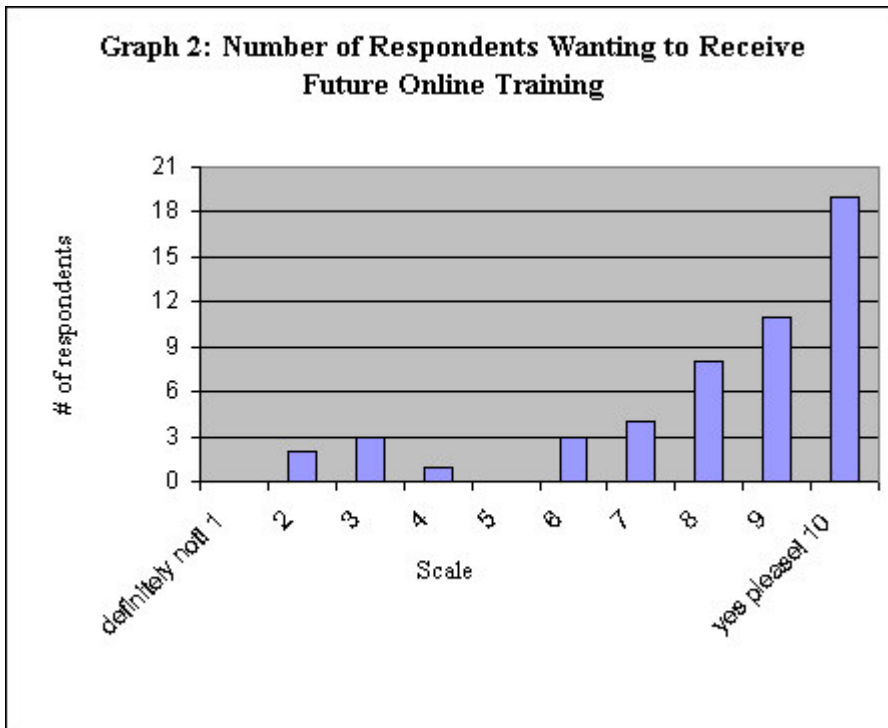

**Key Findings**

Ultimately, the CCAC leaders wanted to know if the online training was perceived as a positive experience for the staff and what aspects of the e-learning made the experience enjoyable. In addition, they wanted to know what parts of the training could be improved or changed to ensure a positive learning experience in future online programs.  Using a scale of one (not very effective) to ten (very effective), the CCAC WHMIS online experience was rated as six or greater by 94% (n=47) of the survey participants (Graph 1).



Graph 1: Rating of Online WHMIS training

not effectiv                    scale                                    very effective

Participants were asked if they would like future e-learning experiences. On a scale of one (definitely not) to ten (yes please), 90% (n=45) of the survey participants rated a six or greater indicating a positive interest in future e-learning (Graph 2). In fact, two thirds (n = 30) rated future e-learning as a nine or ten on the scale.

Graph 2: Number of Respondents Wanting to Receive Future Online Training

# of respondents

21
18
15
12
9
6
3
0

definitely not 1    2    3    4    5    6    7    8    9    yes please 10

Scale

The survey invited the respondents to indicate what they specifically *liked* and *disliked* with the e-learning experience (Graph 3 and 4). The majority (76%) liked working at their own pace and almost half made a positive reference to the program format. Participants liked the ability to stop the program at anytime to review material. Sixteen percent (n = 8) commented on the interactive appeal and real-life scenarios. Others (n = 4) described the program as user-friendly. Two participants felt that it was helpful to have the instructor available.
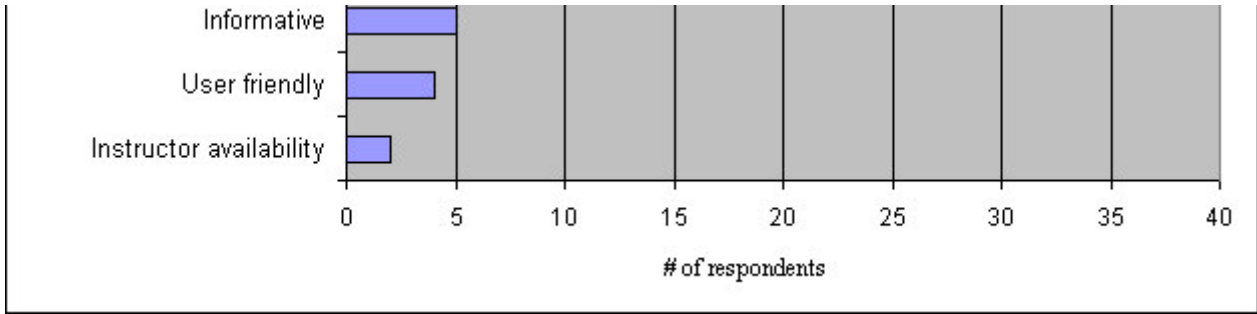
The aspects of the online learning experience that the survey participants *disliked* fell into the following four categories: program length, not preferred learning style, lack of relevance or application, and technology-related issues. Twenty six percent (n = 13) commented on the two-hour program as tiring and uncomfortable. Twenty four percent (n = 12) found that the program did not meet some aspect of their preferred learning style. Three respondents found the lack of person-to-person interaction detracted from the learning. Some individuals found it distracting when others were talking in the training area even though headphones were used. Finally, technology-related problems were reported by 12 percent (n = 6) of the surveyed respondents and included both hardware and software problems. Problems included not being able to increase the volume or speed of the program, the inability to erase or review some segments, and occasional program stalling.
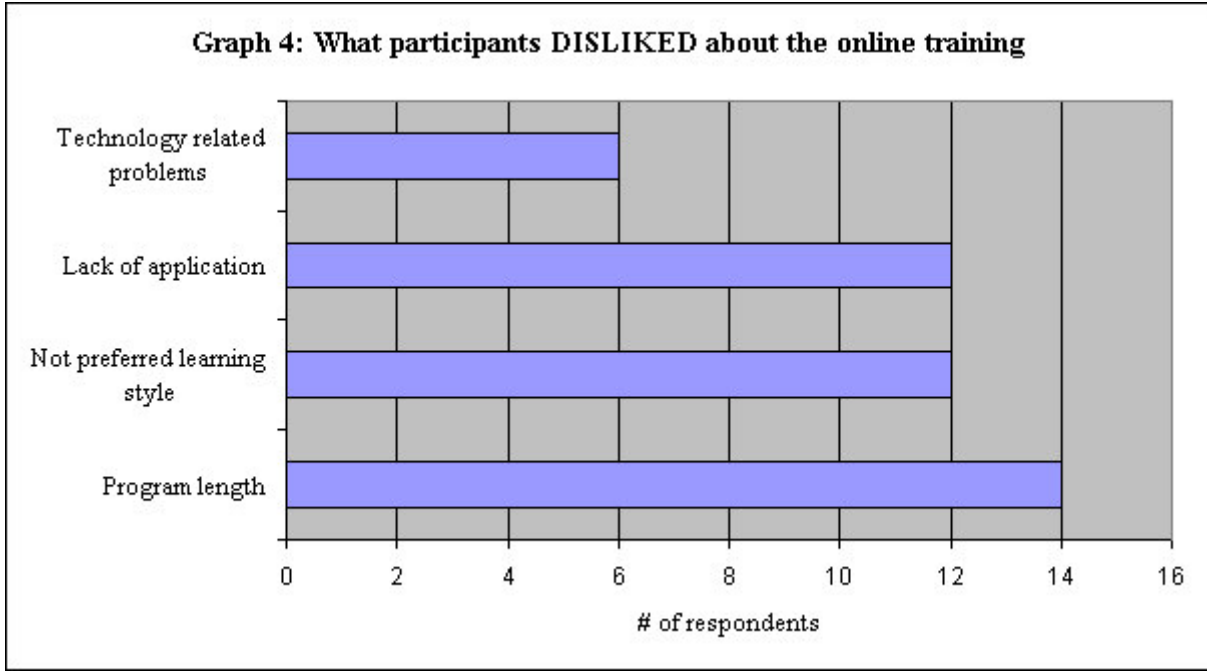


Findings from the semi-structured interviews were congruent with the survey results. In describing their experience with the online training, the seven interview participants *liked* the ability to work at their own pace. One respondent summed it up by saying:

> "I was able to progress at my own speed even though there was a large group of us. By going at my own pace, I didn't have to slow down for somebody else or I didn't feel that I had to hurry up because I was holding up things." (Interview participant 1)

In addition to the flexibility of working at their own pace, respondents liked the program format:

> "I liked the format. It was visual and auditory. I learn best if I can combine the two and this program provided that as well as the ability to go back and review portions. The interactive components kept me interested." (Interview participant 5)

Finally, there was an overall positive regard for the use of technology in education and training:

> "It's an excellent way of training especially when dealing with a large group. It's really personalized because you are sitting at your own computer with your own set of earphones. It would even be better to have the choice to do it at home if people chose to. It's one-on-one but you can do a large group at the same time." (Interview participant 4)

Similarly, the interview data confirmed the survey findings regarding the negative aspects of the online training. The interview participants disliked the program length, lack of relevance, technology-related problems, and learning format. The majority felt that the two-hour training was too long. Portions of the program were not perceived as applicable to the current work environment. One respondent commented on the need for more ergonomically correct workstations for online programs taking longer than an hour to complete. Two interview participants felt that the program did not fully match their learning style. Although they liked the interactivity of the online program and the flexibility to work at their own pace, there was some anxiety in successfully completing the training as stated by this participant:

> "There is some anxiety when I'm in a group setting and knowing that there are various levels of competency on the computer. I know there are others more adept at the computer …I don't read as quickly on a computer screen. I felt pressure to successfully complete the test." (Interview participant 7)

## Summary

In many ways the online venue proved to be effective from the perspective of the learners. The program provided a three-dimensional presentation with actual photographs and video clips. The interactive components enhanced the understanding of the WHMIS concepts at an individualized pace for the learner. Each module in the program included an evaluation that provided immediate feedback and an opportunity to review before proceeding to the next module. However, components of this program were industrial-based and not perceived as relevant to the CCAC work environment. The two-hour session was considered long especially when occasional technical glitches extended the completion time. For some staff, a teacher-facilitated environment was perceived as necessary for a better learning experience.

## Recommendations

In an attempt to understand and assess the impact of technology in education it is important to look at how the adoption of that technology changes the social environment in which people function (Schofield, Eurich-Fulcer, & Britt, 1994). E-learning offers a new way to think about designing and delivering education. However, a leadership team that understands the strengths and weaknesses of e-learning and considers what is required to champion e-learning in an organization is essential. Based on this study the following recommendations are proposed for the organization.

1.  Leaders need to embrace the concept of e-learning as the preferred method of learning for certain subject matter. The impetus for change and the climate for continuous learning are ultimately driven by experienced administrators and educators of an organization. A

genuine belief that the staff's perceptions impact the business outcomes is apparent in the actions that are taken by the organizational leaders. The following action plan may be instrumental in influencing the perception of e-learning within the organization:

a. In order to positively influence the staff's perceptions, the administrators themselves need to understand the basic technologies that they are asking their staff to utilize or learn (Wenzel, 1998; Dooley, & Murphrey, 2000). These basic technological competencies will help policy makers to gain a better understanding of the challenges their staff experience.

b. Steps need to be taken to remove the obstacles and barriers to successfully champion online learning. The perceived deficiencies in the online environment need to be addressed. The drawbacks need to be acknowledged and substituted with positive ways to incorporate the beneficial aspects of personal interaction online. In this case, some of the participants were distracted by the side conversations while completing the WHMIS online program. The program facilitator can ensure a quiet learning environment for those completing the training. An ergonomically correct and comfortable workspace is also necessary. Ideally, a program longer than one hour needs to have rest periods incorporated into the training time. Finally, some staff identified anxiety in working in the group setting and successfully completing the program despite the individualized headphones. The educator is instrumental in establishing an atmosphere where it is safe to ask questions or express concerns related to the program and technology.

c. The provision of both human and technical support is absolutely critical. In addition to setting an environment conducive to learning, the feelings of learners engaged in e-learning need to be recognized, discussed, and acted upon. Adequate training in the use of the equipment or software program and a facilitator that listens to the perceived problems are required. Opportunities to learn the new technology need to be encouraged and supported by both education and administration. For many learners, the availability of a facilitator will alleviate the anxiety associated with incorporating technology in education. Technical difficulties can be frustrating even for the expert. To reduce or eliminate these frustrations, there needs to be skilled technical support.

d. Open communication provides for a continuous evaluation of what is working and what needs to be improved. There is a general acceptance of technology in the CCAC and a readiness to have future learning opportunities online. The leaders need to invite discussion of online learning and continuously re-evaluate the effectiveness of the experience both during and after training.

2. Program quality makes the difference. The online structure needs to be clear, easy to follow, relevant, and learner-centered. The following action plan is recommended for a more effective online strategy:

a. The leaders need to provide information that is meaningful to the learner and therefore relevant to the organization. A program that presents information in an interesting, interactive way will make learning enjoyable and therefore memorable. The chances of learner retention will be increased and the willingness to learn maximized.

b. Before purchasing a software program, the administrators and educators need to screen the program for its related application in the organization and determine

not only the relevance but also the cost effectiveness of the online approach versus traditional classroom delivery.

    c.   Plan a pilot program with a few staff members to eliminate the initial implementation headaches. As discovered with the WHMIS program, initial technical problems needed to be resolved to eliminate the frustrations with completing the already lengthy program. Piloting a program gives the educator the opportunity to determine if the program should be presented in segments or rest periods built into the session.

    d.   The CCAC is a not-for-profit organization. Therefore, it is prudent for the leaders to initiate e-learning on a small scale and to continuously evaluate the process. A combination of online and traditional classroom delivery provides a level of comfort and confidence with the online learning environment. Beginning with small and gradual change, CCAC leaders can more easily evaluate and readjust learning strategies before broadening the scope of e-learning in the organization. The continuous assessment, planning, implementing, and evaluating cycle ensures that the organization is getting the best return on its investment.

3.   Additional qualitative research about the learners' perceptions of online delivery strategies is necessary. This study identified the staff's perceptions of e-learning at the CCAC for one unique training program. As other training programs are implemented, additional studies will be useful. The following action plan is recommended:

    a.   Future research studies need to analyze the learners' perceptions of other online programs. These programs should include e-learning opportunities that are not necessarily mandatory, as with the WHMIS training. The results may be significantly different if the online program is perceived as relevant and applicable to the employee's professional role in the organization.

    b.   It is very important to analyze the changes that occur in an organization when technology is introduced into the learning environment. Changes in classroom roles and structure that are prompted because of the introduction of online learning need to be identified and researched. Ultimately, these changes will have rippling effects throughout the organization. The staff's perception of the changed venue is one critical component that administrators and educators cannot afford to ignore.

## Conclusion

The knowledge gained about the staff's perceptions of the WHMIS online learning experience may impact the instructional delivery of future education and training in the organization. The CCAC staff's perceptions of the WHMIS online program were generally consistent with the literature. The staff enjoyed the process-related benefits of self-pacing, flexibility, and interactivity (Pedretti, Woodrow, & Mayer-Smith, 1998; Ryan, 2000; O'Malley, 1999; Robyler, 1999). Similarly, the staff's perceived disadvantages of e-learning were related to lack of content application or relevance, problems with the technology, lack of teacher interaction and the length of the program (Zariski & Styles, 2000; Harrell, 1999; Perrin, & Mayhew, 2000; Zafeiriou, Nunes, & Ford, 2001; Pedretti, Woodrow, & Mayer-Smith, 1998; O'Malley, 1999; Robyler, 1999; Pritchard, 1998). It was evident that student perceptions impact learning and consequently program effectiveness. Knowledge of the staff's perceptions of this online learning experience may provide the CCAC leaders with valuable information to evaluate the present WHMIS training program. The research also provides CCAC administrators and educators with significant data to scrutinize future e-learning programs for the organization.

# References

Bates, T. & Bartolic-Zlomislic, S.(2000). Investing in online learning: Potential benefits and limitations, The University of British Columbia. [Online] Available: http://bates.cstudies.ubc.ca/investing.html, accessed 7 August 2003.

Broadbent, B. (2000).Championing e-learning. [Online] Available: http://www.e-learninghub.com/articles/championing.html, accessed 7 August 2003.

Brungardt, J. & Zollman, D. (1995).Influence of interactive videodisc instruction using simultaneous-time analysis on kinematics graphing skills of high school physics students. Journal of Research in Science Teaching, 32, 855-869.

Buckley, R.(1995). What happens when funding is not an issue? Educational Leadership, 18, 64-66.

Charp, S.(2001). E-learning.T.H.E. Journal, 28 (9), April, 10-11.

Cruz, A. (1999).Confession of an online convert: Experiencing long distance learning. Journal of Family and Consumer Sciences, 91(3), 53-54.

Cummings, L.E. (1996). Educational technology-A faculty resistance view. Part 11: Challenges of resources, technology, and tradition. Educational Technology Review, 5, 18-20.

DeSantis, C. (2003). What is e-learning? [On-line] Available: http://elearners.com/elearning/q1.asp, accessed 9 August 2003.

Dooley, K. & Murphrey, T. (2000). How the perspectives of administrators, faculty, and support units impact the rate of distance education adoption. Journal of Science and Technology, 3 (4), Winter, 2-12.

Gordon, D., Polman, J. & Pea, R. (1994). The climate visualizer.  Journal of Science and Technology, 3, 204-226.

Government of Canada. The employer and the workplace hazardous materials information system – WHMIS. [On-line]. Available: http://www.cbsc.org/english/search/display.cfm?code=1753&Coll=FE_FEDSBIS_E. accessed 7 August 2003.

Harrell, W. Jr. (1999). Language learning at a distance via computer. International Journal of Instructional Media, 26 (3), 267-282.

Kimble, C. The impact of technology and learning: Making sense of research, May 1999. [Online] Available: http://www.mcrel.org/products/tech/tech.html, accessed 6 August 2003.

Lazarowitz, R. & Huppert, J. (1993).Science process skills of the 10th grade biology students in a computer-assisted learning setting. Journal of Research on Computing in Education, 25, 366-382.

Lockard, J., Abrams, P. & Many, W. (1994). Microcomputers for the 21st  century educators,

3rd ed., New York, Harper Collins.

McClenney, K. (1998). Community colleges perched at the millennium: Perspectives on innovation, transformation and tomorrow. League for Innovation, 11 (8), August, 2-8.

McGraw-Hill Ryerson. (2000). Student success and the use of new technology in education. Toronto, Ontario, McGraw-Hill, January.

O'Malley, J. Student perceptions of distance learning, online learning and the traditional classroom. Online Journal of Distance Learning Administration, 2 (4), Winter 1999, 1-13.

Patterson, C. (2001). Virtual academy. Techniques, 76 (4), April, 34-35.

Pedretti, E., Woodrow, J., & Mayer-Smith, J. (1998). Technology, text, talk: Students' perspectives on teaching and learning in a technology-enhanced secondary science classroom. Journal of Science Education, 82 (5), 569-589.

Perrin, K. & Mayhew, D. (2000). The reality of designing and implementing an Internet-based course. Online Journal of Distance Learning Administration, 3 (4), Winter, 1-9.

Pritchard, C.L. (1998). From classroom to chat room. Training and Development, 52, 76-78.

Robyler, M.D. (1999).  Is choice important in distance education? Research on Computing in Education, 32 (1), Fall, 157-160.

Rumble, G. (2000). The globalization of open and flexible learning: Considerations for planners and managers. Online Journal of Distance Learning Administration, 3 (3), Winter, 1-15.

Ryan, R. (2000). Student assessment comparison of lecture and online construction equipment and methods class. T.H.E. Journal, 27 (6), 78-83

Salomon, G., Perkins, D. & Globerson, T. (1991). Partners in cognition: Extending human intelligence with intellectual technologies. Educational Researcher, 20, 2-9.

Schofield, J., Eurich-Fulcer, & Britt, C. (1994). New theoretical insights suggest new approaches to research: A rejoinder to Davis. American Educational Research Journal, 31, 619-625.

Settlage, J. Jr. (2000). Children's conceptions of light in the context of technology-based curriculum. Science Education, 79, 535-553.

Stewart, N. & Sanchez, J. Development of an online collaborative learning model for social work education. [On-line] Available: http://www2.uta.edu/cussn/husita/proposals/stewart.htm, accessed 7 August 2003

Teh, G. (1999).Assessing student perceptions of Internet-bases online learning environments. International Journal of Instructional Media, 26 (4), 397-402.

Trotter, A.  A question of effectiveness. Technology Counts, 1998. [On-line] Available: http://www.edweek.org/sreports/tc98/intro/in-n.htm, accessed 7 August 2003.

Wenzel, G. (1998). Why school administrators need to know about distance learning. Online Journal of Distance Learning Administration, 2 (4), Winter, 1-7.

Zafeiriou, G., Nunes, J. & Ford, N. (2001). Using students' perceptions of participation in collaborative learning activities in the design of online learning. Education for Information, 19 (2), 83-105.

Zariski, A. & Styles, I. (2000). Enhancing student strategies for online learning. Teaching and Learning Forum. [On-line] Available: http://cea.curtin.edu.au/tlf2000/abstracts/zariskia.html, accessed 7 August 2003.

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