

Short Report: Satisfaction with on-line CME *Evaluation of the RuralMDcme website*

Vernon Curran, PHD Fran Kirby, MED Ean Parsons, MD, CCFP Jocelyn Lockyer, PHD

In recent years, use of the World Wide Web as a means of providing lifelong learning opportunities has increased. The main benefits of on-line continuing medical education (CME) include easy access, convenience, cost-effectiveness, reduced travel, self-paced and self-directed learning, and an interactive multimedia format.¹⁻³ Several on-line CME studies⁴⁻⁶ have reported satisfaction with Internet learning and substantial acquisition of knowledge. An interesting aspect of the on-line CME literature is the diverse nature of the delivery formats that have been described. On-line CME has been delivered by real-time Internet teleconferencing, live and delayed audio and video CME Web broadcasts, and problem-based learning discussion system designs.

In spring 2002, Memorial University of Newfoundland in St John's led a consortium of Canadian university-based CME departments in the development of RuralMDcme, a CME website that provides accredited on-line CME courses by the College of Family Physicians of Canada. The purpose of this study was to evaluate physicians' satisfaction with an on-line CME format that used the WebCT learning management system and facilitated interaction using computer-mediated discussion.

Dr Curran is an Assistant Professor (Medical Education Specialist), Ms Kirby is Manager of the Office of Professional Development, and Dr Parsons is Assistant Dean of CME, all in the Faculty of Medicine at Memorial University of Newfoundland in St John's. Dr Lockyer is Director of CME in the Faculty of Medicine at the University of Calgary in Alberta.

This article has been peer reviewed.

Cet article a fait l'objet d'une évaluation externe.
Can Fam Physician 2004;50:271-274.

METHODS

All participants who took on-line courses were invited to complete a questionnaire to assess their satisfaction with the on-line learning experience. Semistructured telephone interviews were also conducted with a stratified sample of participants within 2 weeks of course completion. Participants were stratified according to sex, practice experience, and comfort with computers. Information about participation and completion rates was also recorded.

RESULTS

Four on-line CME courses were offered during the period of evaluation: Management of Whiplash and Back Injuries, Introduction to Telehealth, Introduction to Assessment and Management of Dementia, and Cases in Emergency Medicine. Courses had a mean of eight participants. Thirty-seven registrants completed course evaluation questionnaires. Most respondents were family physicians or general practitioners (86%) and rural physicians (54%). They had at least 11 years of practice experience (59%); 51% were men and 49% were women.

Responses to the questionnaires suggest great satisfaction (Table 1). Almost all respondents (97%) indicated they would participate in another on-line CME course, and 89% considered the instruction appealing, interesting, and motivating. Almost all respondents (97%) reported they were able to learn at their own pace, and 92% felt they were better able to juggle learning time with work and home responsibilities.

Semistructured interviews were conducted with 15 physicians; Table 2 presents the main themes

Table 1. Course evaluation results

EVALUATION QUESTIONS	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	NOT APPLICABLE
OVERALL IMPRESSIONS						
I would participate in another CME course offering of this type		1 (3%)		9 (24%)	27 (73%)	
I would recommend this course to others		2 (5%)	3 (8%)	7 (19%)	25 (68%)	
I received adequate help with technical problems		2 (5%)	11 (30%)	7 (19%)	8 (22%)	9 (24%)
Overall, the content was clear and easy to understand				14 (38%)	23 (62%)	
Overall, the instruction I received through this program was appealing, interesting, and motivating			4 (11%)	16 (43%)	17 (46%)	
BECAUSE THIS WAS AN ON-LINE COURSE...						
I spent too much time trying to gain access to a computer or computer terminal	13 (35%)	11 (30%)	7 (19%)	1 (3%)	4 (11%)	1 (3%)
I used the World Wide Web resource links to locate information for inquiries that went above and beyond that required for this course (eg, for certain patient problems)	1 (3%)	4 (11%)	2 (5%)	21 (57%)	5 (14%)	4 (11%)
I was able to learn at my own pace	1 (3%)			12 (32%)	24 (65%)	
I was at a disadvantage because I do not possess adequate computer skills	15 (41%)	12 (32%)	5 (14%)	3 (8%)	1 (3%)	1 (3%)
I spent more time studying		8 (22%)	4 (11%)	19 (51%)	6 (16%)	
I put more thought into my comments		4 (11%)	13 (35%)	13 (35%)	4 (11%)	3 (8%)
I was better able to juggle my learning time with my work and home responsibilities		2 (5%)	1 (3%)	10 (27%)	24 (65%)	
BULLETIN BOARD DISCUSSION						
Participating in discussions enhanced my understanding of the subject areas	1 (3%)		8 (22%)	12 (32%)	10 (27%)	6 (16%)
I found it informative and beneficial to be able to communicate with the facilitator(s)			7 (19%)	10 (27%)	12 (32%)	8 (22%)
I found it informative and beneficial to be able to communicate with my colleagues			8 (22%)	12 (32%)	8 (22%)	9 (24%)
I was more comfortable participating in discussions in this program than I am in face-to-face courses	1 (3%)	14 (38%)	8 (22%)	9 (24%)		5 (14%)
I found it easy to post, respond, and reply to messages on the bulletin board	4 (11%)	5 (14%)	3 (8%)	12 (32%)	9 (24%)	4 (11%)
The facilitator(s) responded promptly to my questions	1 (3%)	1 (3%)	6 (17%)	9 (25%)	11 (31%)	8 (22%)

that emerged. Positive aspects of the courses included the content, design and layout, discussion and feedback, and the opportunity to experience on-line learning. Participants appreciated the opportunity to discuss the content of courses and wanted feedback on their mastery of it. Physicians wanted courses where they could receive feedback from the facilitator and have the opportunity to communicate with their peers. At the same time, there were barriers to overcome in using on-line discussion systems: inexperience, lack of success at first attempts, few participants, and discomfort

with the concept of conferencing systems.

Participants were asked how they envisioned on-line courses influencing their CME. Many indicated they intended to use on-line courses again and anticipated that it would be the “wave of the future for rural doctors.” Participants believed that making courses more interactive by promoting communication between learners and facilitators or fellow learners would increase the appeal of on-line CME.

Another suggestion was that courses be divided into smaller “bite-size pieces”—short lessons or

Table 2. Summary of interview themes and categories

THEMES	NO.	EXAMPLES AND QUOTES
ADVANTAGES OF ON-LINE COURSES		
• Convenience, including cost	32	The ease of access. I can participate from my own home, my own community, and also [can] log in and log [off] at will. There were no time constraints.
• Relevance of topic	11	I practise in a rural area. I thought any course coming out of RuralMDcme.ca might have content applicable to my situation
DISADVANTAGES OF ON-LINE COURSES		
• Reduced interaction	11	When you are in face-to-face [courses] you have a lot more interaction and dialogue back and forth.
• Time management	9	You tend to think you will do it tomorrow night, and it is always tomorrow night.
• Bulletin boards	16	I had trouble getting on to the bulletin board, and I really didn't see anyone else's comments. I could barely get on to leave my own bewildered comments.
POSITIVE EXPERIENCE WITH SPECIFIC COURSES		
• Content	32	I gained a lot of knowledge that I have actually put to... use already.
• Design or layout	15	I realize that I got more out of this course than I would have done through any other medium.
• Discussion, feedback	10	That was the best part of the course. I think all the learning happens when they discuss cases and put their opinions on-line.
• Links, on-line references, resource materials	12	They had a very nice page of links,... which I just uploaded into my computer, and I will use that again.
• Familiarization with on-line learning	3	Well, I certainly gained a little bit more confidence with computers. I wouldn't feel intimidated by doing it again.
NEGATIVE EXPERIENCE WITH SPECIFIC COURSES		
• Problems of a technological nature	34	I had very severe problems with linking to the course. In fact one night I spent 3 hours trying to sort out on-line, and I really felt I missed out on some aspects of the course and not for lack of trying.
INFLUENCE OF ON-LINE COURSES ON CME		
• Intend to use again, important learning option	16	I think I will continue to do the on-line CME for sure.
• Confidentiality	5	I don't think people will be as frank [when comments are posted and] they may leave themselves open to criticism.
INCREASING THE APPEAL OF ON-LINE CME		
• Make more interactive	12	If you make it interactive, people will retain it.
• Have accredited; promote more	8	Well, you have a good start with getting it recognized by the College of Family Physicians [of Canada].
• Time flexibility	4	I think if there were perhaps a few shorter topics or something like that you could do in 1 to 2 hours, that would be fine. You could do it in just one sitting.

activities that could be completed in short times. They believed that being able to complete short sections at a single sitting would provide a sense of accomplishment that would increase satisfaction with the learning.

DISCUSSION

Professional isolation and limited professional development opportunities are factors that influence recruitment and retention of rural physicians in Canada. On-line CME offers rural physicians an opportunity to participate in lifelong learning regardless of geographic location. Interaction and

collaboration are key principles of effective adult learning environments. Computer-mediated discussion systems can create new learning environments to support conversation and collaboration among practitioners.

The RuralMDcme website was created to provide greater access to accredited on-line CME and foster a community of practice. Most physicians in this study described on-line computer-mediated discussion activities as important for interacting with their peers and instructors. Some respondents, however, felt that a lack of interaction with the instructor and other participants detracted from the learning experience. This suggests that satisfaction with on-line CME depends greatly on the quality of

learner-learner and learner-instructor interactions. The relevance and applicability of the on-line CME subject matter is important to participants; however, the opportunity to discuss the meaning and value of this content to clinical practice with colleagues and consultants is also important.

CONCLUSION

Results of this exploratory study suggest that physicians were generally satisfied with an on-line learning format that used the WebCT learning management system and facilitated interaction using computer-mediated discussions. On-line CME, by its very nature, is a communicative and collaborative learning environment. Satisfaction with the on-line CME experience depends greatly on the quality of interactions facilitated in such an environment. ❁

Acknowledgment

Funding and support for The Electronic Rural Medicine Strategy (TERMS) was provided by Health Canada's Office of Rural Health's Rural and Remote Health Innovations Initiative. RuralMDcme resulted from the collaborative efforts of many individuals, partners, and sponsors. Partners include Memorial University of Newfoundland (Lead), University of Calgary, University of Ottawa, Government of Newfoundland and Labrador, Alberta Rural Physician Action Plan, Southwestern Ontario Rural Medicine, Drs Conleth O'Maonaigh and Stephen D'Arcy, Newfoundland and Labrador Medical Association, Federation of Canadian Municipalities, and the Newfoundland and Labrador Federation of Municipalities. Special thanks go to the facilitators of the RuralMDcme courses.

Contributors

Dr Curran led the evaluation study, analyzed the data, and wrote the article. Drs Parsons and Lockyer, and Ms Kirby critically reviewed drafts of the article.

EDITOR'S KEY POINTS

- On-line continuing medical education courses are becoming more popular, especially among rural physicians. Participants were satisfied with the courses offered by the RuralMDcme website, thanks to the interactive features, the attractive site design, and the flexibility to learn at any time.
- Some barriers included discomfort with a new style of learning, inexperience with Internet manipulation, and small numbers of participants.
- Suggestions for future courses were to increase the interaction between facilitator and participants and to package material in smaller, "bite-sized" chunks that could be "snacked upon" when convenient.

POINTS DE REPÈRE DU RÉDACTEUR

- Les cours de formation médicale continue en ligne sont de plus en plus populaires, notamment chez les médecins ruraux. Les participants se sont dits satisfaits des cours offerts par le site web RuralMDcme, grâce surtout aux caractéristiques interactives et à la conception attrayante du site ainsi qu'à la possibilité d'apprendre en tout temps.
- Parmi les obstacles, mentionnons celui résultant de la nouveauté de ce mode d'apprentissage, le manque d'expérience dans l'utilisation de l'Internet et le faible nombre de participants.
- À l'avenir, on suggère d'augmenter l'interaction entre les instructeurs et les participants, et d'offrir le matériel didactique en plus petites «bouchées» pouvant être «croquées» au moment choisi.

Competing interests

The RuralMDcme project was funded through a grant from Health Canada's Office of Rural Health and Remote Health Innovations Initiative.

Correspondence to: Dr Vernon Curran, Assistant Professor (Medical Education), Centre for Collaborative Health Professional Education, Faculty of Medicine, Memorial University of Newfoundland, St John's, NL A1B 3V6; telephone (709) 777-7542; fax (709) 777-6576; e-mail vcurran@mun.ca

References

1. Turchin A, Lehmann CU. Active learning centre: design and evaluation of an educational world wide web site. *Med Inform Internet Med* 2000;25(3):195-206.
2. Ryan D, Waterson R. Transforming continuing education materials for on-line learning. *J Telemedicine Telecare* 2000;6(4 Suppl 2):64-6.
3. Mamary EM, Charles P. On-site to on-line: barriers to the use of computers for continuing education. *J Contin Educ Health Prof* 2000;20(3):171-5.
4. Kronz JD, Silberman MA, Allsbrook WC, Epstein JL. A web-based tutorial improves practicing pathologists' Gleason grading of images of prostate carcinoma specimens obtained by needle biopsy. *Cancer* 2000;89(8):1818-23.
5. Marshall JN, Stewart M, Østbye T. Small-group CME using e-mail discussions. Can it work? *Can Fam Physician* 2001;47:557-63.
6. Curran VR, Hoekman T, Gulliver W, Landells I, Hatcher L. Web-based CME (Part II): an evaluation study of computer-mediated continuing medical education. *J Contin Educ Health Prof* 2000;20(2):106-19.

