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Online Teaching and Learning

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Online learning has emerged over the past decade as one solution to the problem of bridging the gap between research and practice in the addictions and mental health fields. However, the relative newness of this medium points to a need for a better understanding of the issues and best practices in instructional applications, particularly in clinical content areas. This article summarizes the key characteristics of, and issues relating to, computer-mediated communication (CMC). Barriers to effective CMC for online instructors and learners are discussed, along with a summary of current "best practices" in online teaching and learning.

Keywords: Online learning; Web-based instruction; Continuing professional education (CPE); Distance learning; Computer-mediated communication (CMC).

Introduction

The dissemination of new knowledge and practice tools constitutes a major challenge for the field of addictions and mental health (Martin, Herie, Turner, & Cunningham, 1998). Continuing professional education (CPE) for health and counseling practitioners is a key strategy for communicating research and practice innovations; however, these opportunities may be limited by constraints on clinicians' time, limited staff development budgets, and the availability and accessibility of classroom-based workshops and seminars (Ontario Hospital Association, 2003). One solution to the problem of bridging the gap between research and practice has emerged over the last decade: Web-based instruction.

Web-based instruction is "an innovative approach for delivering instruction to a remote audience, using the Web as a medium" (Khan, 1997, p. 5). Online learning can take place in both synchronous (real-time) or asynchronous modes, and many courses incorporate features of both. *Synchronous* communication can take place via text-based chat or instant messaging, through Webcast, or via two-way internet-delivered audio, video, or both. *Asynchronous* communication includes e-mail, internet distribution lists (Listservs), discussion forums and newsgroups, streaming audio or video, and Web sites. Furthermore, web-based learning can refer to a range of formats, including "informational (online syllabus); supplemental (much course content online); essential (requiring HTML skills); communal (chat rooms); and immersive (no face-to-face; usually learner-centred and constructivistic)" (Smith, 2001, p. 55).

Computer-mediated communication (CMC) is a new medium for personal and group interaction. CMC combines elements of letter-writing, since it is primarily a text-based format; nevertheless, it can also include the immediacy and informality of spoken conversation. However, if online CPE is to be used effectively, it is important to understand both its limitations and advantages. This article will summarize some of the key issues surrounding CMC in online courses, along with barriers to online teaching and learning. The paper will conclude with a section on "best practice" tips and techniques for online teaching and learning in clinically-focused content areas.

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Characteristics of Computer-Mediated Communication

Three main characteristics of CMC can be identified (Romiszowski & Mason, 1997). First, this type of communication is able to support complex interactional processes between individuals and groups that combine the permanence of written communication with the speed and, to some extent, dynamism of spoken telecommunication. Second, CMC can readily support multi-way communication, wherein all participants of a group can respond to the messages of all other participants. Finally, CMC can have both synchronous (same time) and asynchronous characteristics. These characteristics mark CMC as fundamentally different from other communication technologies, which generally are either one-way (e.g., text or television) or two-way (e.g., telephone), and are either asynchronous (e.g., text) or synchronous (e.g., telephone), but not both.

McLuhan's famous statement that "the medium is the message" relates to how different communications media influence our understanding and experience of the intended message (McLuhan & Zingrone, 1995, p. 8). Thus, media affect us physically (e.g., sitting in front of a television, talking on a telephone, or working at a computer), and influence the interpretation of the messages they transmit. This suggests that text on a computer screen will be viewed in a qualitatively different manner than text in print; the computer mediates and alters how the text (CMC) is experienced or understood.

Although computer networks are not alive, people seem compelled to try to inject a sort of real-world quality to them. For example, the expression of the Internet as an "Information Superhighway," and Microsoft's "Where do you want to go today?™" advertising campaign try to make the Internet seem more like a real "place." In addition, we can look at the Internet as containing *content* (storage and retrieval of information), as well as being a unique *context* (a virtual place), sharing many of the characteristics of real places (Jones, 1997). Computers in education have capitalized on these characteristics of transportation, communication, and storage by combining the learning activities of independent research with collaborative group discussion and problem-solving.

Diversity Among Online Learners

Given the nature of the medium, it makes sense that people will experience online learning and CMC in different ways. Research on different learning styles, for example, suggests that some people retain more information when they hear it, while others are more visual learners. Blue James and Gardner (1995) define *learning style* as simply "the ways individual learners react to the overall learning environment" (p. 19). They note that, in spite of many definitions in the literature, all focus on the core concept of how people react to the learning environment. Individual reactions vary along three main dimensions: (1) the *perceptual dimension*, which includes visual, print, aural, interactive, haptic (touch), kinesthetic (movement), and olfactory (smell/taste) components; (2) the *cognitive dimension*, consisting of global, holistic, or right-brained versus analytical, focused, or left-brained components; and (3) the *affective dimension*, which relates to attention, emotion, and valuing. Finally, Blue James and Gardner (1995) note that the research is not conclusive with respect to supporting the construct of discrete learning styles, therefore issuing caution in using this concept in instructional design applications. The challenge for online facilitators is to accommodate different learning preferences (or styles), while relying on a relatively primitive technology (i.e., text on a computer screen). Learners' diversity can be partially accounted for by the construct of learning styles, but there are a variety of other areas in which participants differ. These include age, gender, culture, language, previous computer experience, typing speed, motivation and physical ability/disability. In addition, some people may have very demanding work or family obligations (e.g., multiple occupations, or child-care responsibilities) that may reduce the time and energy that they can devote to continuing professional education.

A good online facilitator is able to prepare for, and respond flexibly to, the particular needs and circumstances of learners. The essential qualities of empathy, mutual respect, and genuine caring make an enormous difference when learners are struggling with unfamiliar technology and content. This task is further complicated when clinical skills and content are taught via web-based applications. Clinical content areas often demand that learners engage at a level that extends beyond simple information transmission. For example, topics such as cultural competence, addiction assessment and treatment, and mental health interventions can involve a shift in values, attitudes, and beliefs on the part of the learner. This can be a challenge in an online environment, where communication may be experienced as less personal and immediate, and as more "high-risk" by learners.

Other Issues In CMC

The permanence of online versus spoken communication means that messages become part of the course record. Incorrect or off-the-cuff comments cannot be as easily recalled or forgotten as in face-to-face learning contexts. This can be especially true in content areas such as addiction and mental health, where blame and stigmatization are common. In addition, some people might worry about their spelling, or about making a

comment that others could judge negatively. The problem with CMC is that a person's online postings are their sole "face" to the rest of the class. This can lead to communication anxiety for many learners, as some people may hold back from participating actively because the perceived risk may be simply too great.

In addition, receiving no response to a message can be interpreted as a failure to a much greater extent than in a face-to-face scenario. This is because, when people gather together in person, they are constantly sending *phatic messages* to one another. These messages (both verbal and nonverbal), which let people know whether their message is being received by others, include comments such as, "yes, go on," glances, or touch or facial expressions. To someone new to CMC it can be unsettling to communicate without these glances and tacit signs of encouragement. For example, in an online, graduate-level course on addictions taught by the author, it is not uncommon for students to disclose their own and others' personal experiences of alcohol and other drug use. In these situations, the support and acceptance of other learners (and the instructor) is crucial to establish a climate of psychological safety, respect, and professional boundaries.

Another issue in CMC relates to the *emotional magnification* that seems to happen in this medium. Most people have probably experienced this phenomenon in e-mail correspondence—a slight criticism (even if constructive) or an abrupt tone can result in escalating e-mails of greater and greater emotional intensity. This is also an issue for online learning, where there is a need to challenge learners and have them engage in critical and substantive dialogue with one another. Yet, the question for facilitators is, "how much is too much?" How can we impel participants to look more deeply at important issues without offending them, or, even worse, leaving them feeling attacked and unsupported?

The issue of *time coherence* in asynchronous environments can also be a challenge for participants. The unpredictability of when someone will respond to a posted message creates a level of uncertainty in the sender, and can make it difficult to accomplish certain kinds of group tasks and activities. It is easy to become frustrated when a deadline for an online group assignment is looming, and members of the group have not yet responded or contributed. Even something as straightforward as appointing a small group facilitator can exhaust learners' time and energy. Online facilitators need to carefully consider the types of group tasks they assign, or they risk dealing with frustrated and disgruntled learners!

Best Practices in Online Teaching and Learning

Online facilitation is, at this stage in its development, more art than science. Nonetheless, there are some strategies that seem to be more effective than others. In general, an online facilitator functions better as a "guide on the side" versus a "sage on the stage." In other words, traditional face-to-face classrooms are set up with an instructor who is "front and centre," providing information and directing learning in an active way. Online environments, on the other hand, have been called "inherently democratizing" because there is no "front of the class"—everyone's online voice has equal emphasis (at least in theory). For this reason, the role of the online facilitator is fundamentally different than in an on-ground classroom—it is important to guide the discussion and encourage participation, but equally critical to avoid overshadowing student contributions, thus stifling participation.

The Four Main Functions of an Online Facilitator

Online facilitators need to perform four general actions in order to promote a successful learning environment for participants. These include: (1) fostering learner engagement; (2) encouraging active, visible, and sustained participation; (3) promoting critical, as opposed to surface or superficial, thinking; and (4) encouraging participant interaction.

These functions are critical to good online facilitation, so each one will be examined in turn. First, we will look at the barriers to engagement, participation, critical thinking, and interaction, and then at several practical strategies for instructors of online courses, including those with a clinical focus.

Barriers to Learner Engagement

What do we mean by "learner engagement"? Essentially, this concept refers to how interested people are in what they are learning, and also to how motivated they feel to delve into the topic being taught. When participants are not engaged in a topic, they can appear bored, apathetic, and disinterested. There are several reasons for a lack of learner engagement, some related to the learning environment or teaching style of the instructor, some specific to the online context, and others related to outside factors. Barriers to learner engagement include:

- Information or course material that is not relevant to learners' needs;
- The lack of an experiential (i.e., hands-on) component to learning;
- Frustration or discomfort with the technology;
- Lack of social cues in online environments;
- Time constraints; and
- Work, family, or social obligations.

Anticipating and planning for these barriers can help ensure that the online course is experienced as dynamic, relevant, and fun for participants.

Barriers to Critical Thinking

In addition to engaging learners in a given topic, we also want them to go beyond just "skimming the surface." Critical thinking is key to understanding what is being taught; without critical thinking, participants fail to grasp the essence of the subject area, and how it relates to their own pre-existing knowledge and beliefs.

Major barriers to critical thinking in online courses include:

- Limitations of the technology;
- Time needed for group-process issues in asynchronous communication; and
- Learners' expectations.

Fostering critical thinking in online environments can be a challenge, given the current limitations of this medium. Most online courses have to consider the computer hardware and software limitations of users, as well issues of bandwidth (the rate at which information can be transported). Therefore, most online courses rely on synchronous and asynchronous text, so the dilemma for online facilitators becomes how to inspire students to engage with the course material at a deeper level. In addition, when learners are communicating with one another asynchronously, it can take so long to accomplish basic, instrumental tasks related to course activities and assignments that there is little time to critically reflect on what is being learned. Furthermore, many learners come with pre-existing expectations that they will be "fed" information—a perspective that may have been a hallmark of much of their previous classroom-based experiences.

Barriers to Interaction

One advantage to online learning versus computer-assisted instruction (CAI) is the many-to-many capacity of the Web. Unlike a computer-based training program, where an individual progresses through predetermined content, online learning allows for addiction and mental health practitioners to collaborate, interact, and share personal and professional experiences. Collaborative learning, characterized by student-to-student interaction, is a central feature of high-quality online courses.

The growing emphasis on collaborative, student-centred learning has its roots in constructivist theory. *Constructivism* refers to a shift in orientation from teacher-centred to student-centred learning. This approach engages students' experiences and underlying beliefs, and emphasizes skills associated with lifelong learning, so that individuals learn how to access the knowledge they need to solve real-life problems. Constructivism has emerged as the teaching strategy of choice for educators because of its perceived advantages over other instructional models (Smith, 2001). In addition, this model is well-suited to CPE initiatives targeted at experienced and highly-skilled addiction and mental health practitioners.

Although interaction is of critical importance in online learning, it can be hindered by a few major barriers, including:

- Participants' feelings of isolation in online environments;
- Unclear expectations on the part of the instructor;
- An online facilitator who "overshadows" participants' postings; and
- A didactic (instructivist) approach to teaching on the part of the instructor.

Addressing feelings of isolation and promoting participants' connectedness to one another, making expectations about learner interaction explicit, being conscious of the "guide-on-the-side" role in online facilitation, and incorporating constructivist teaching strategies can help overcome these barriers.

Barriers to Participation

Although engagement, critical thinking, and interaction are key functions for online instructors, none of these would be possible without participation by learners. In an online course, students who fail to actively participate (i.e., post messages and assignments) are effectively invisible. Unlike the face-to-face classroom, where nonverbal participation is evident in an attentive posture or gaze, a nod of the head, or note-taking, the only way to assess online participation is through students' contributions to the course dialogue.

The barriers discussed above can also limit learners' participation. Issues and limitations related to the technology, feelings of isolation, other competing priorities, and teaching style may result in a number of silent course participants. And, the longer a learner goes through the course without contributing, the more difficult it can become to make the leap into the online conversation. Fostering participation is one of the most difficult, yet crucial, roles for online facilitators.

Online Facilitation Strategies

The above sections have examined some of the key issues in computer-mediated communication, as well as barriers to critical, participatory, and dynamic online learning. So, what can be done to overcome these potential difficulties? Although research into online learning is still in its infancy, there is a large and growing body of literature that suggests several beginning ideas about best practices. Given that much online-learning

research has been conducted on small, non-random samples, and tends towards case-based, qualitative methodologies, these findings are more suggestive than conclusive. Nonetheless, they can provide us with several directions and suggestions for effective online facilitation.

Strategies For Enhancing Learner Retention (or, How to Minimize Drop-Out!)

In general, distance education courses tend to have a higher rate of drop-out than their classroom-based counterparts. This is related to the difficulty of sustaining intrinsic (internal) motivation. In distance education courses, including most of those offered online, students can do the work at their convenience, as opposed to attending classes at set times. The downside of this approach is that it can be too easy to put off doing the coursework, with the result that students get further and further behind, and may eventually drop out of the course. The following are some suggestions for minimizing learner drop-out in online courses:

- Personally respond to each learner's first posting to the course;
- Check in personally (by e-mail or telephone) with each learner early on regarding unresolved technical issues;
- Send personal follow-up e-mails to silent participants;
- Be flexible with respect to small group composition and course activities (e.g., if a small group has only two active members, consider merging it with a more active group, and check in with silent members; if course activities seem too demanding, limit the number of activities and/or make necessary revisions);
- Do not wait too long to implement the above suggestions!

Setting a Climate of Psychological Safety

We have already discussed some of the reasons why learners may feel anxious about posting messages to a course conference. Creating a safe learning environment can go far in minimizing students' performance anxiety. Safety in online courses can be created by an initial message to students in the course with some guidelines stating that:

- Diverse perspectives and points of view are valued in the course;
- Respectful communication is valued and expected;
- It is acceptable to critique an idea, but not a person;
- Course postings are confidential to students and instructors registered in the course, and should not be shared with others (unless permission is granted by the author of a particular message); and
- Personal and professional experiences are valued as a way to anchor the course concepts and theory in real-world experience.

In addition, the structure of online courses can influence how comfortable or safe learners feel. Having an area for participants to socialize, asking participants to post a paragraph (and perhaps a photo) introducing themselves, and adopting an informal, conversational tone can all help set a positive learning climate. In addition, it can be helpful to give people permission to make spelling and grammatical mistakes in their postings.

Another helpful strategy that has been used successfully is assigning students a learning partner for the course. This can be especially useful if some of the students are new to the technology, while others are more experienced. Learning partners can reduce feelings of isolation and increase feelings of connectedness in online participants. In addition, having a more experienced student act as a mentor can also alleviate some of the technical-support questions with which online facilitators are inundated early on in the course (this is true even in courses enhanced with a 24-hour technical support team).

Promoting Learner Engagement and Critical Thinking

High-quality online courses are characterized by active dialogue and interested, engaged participants. A variety of instructional design strategies have been used successfully in online courses. These strategies can foster a sense of empowerment in learners, and can also help participants link course content with real-world applications:

- Interactive journal writing (participants post journal entries to a learning partner or small group for discussion);
- Online fantasy role plays (e.g., a real-time chat where students take on the personas of famous theorists in their field, and debate conflicting ideas and assumptions);
- Use of "visiting experts," who can field questions from participants and/or critique student assignments;
- Incorporating joint (as opposed to individual) writing projects, which are then published in the course or on the Web;
- Using transcripts of online exchanges as the bases for reflective assignments;
- Incorporating images and language that reflect diverse cultural backgrounds; and
- Asking learners to contribute content (e.g., a relevant Web site or resource article).

One thing to be wary of in facilitating online is the tendency for students to post "mini-essays" in response

to course activities, but to fail to engage in student-to-student interaction. This can be prevented by adopting the *single-screen rule*: asking students to limit their postings to no more than a single computer screen. Modeling brief, insightful interactions can also be helpful in preventing long-winded postings that tend to stifle (as opposed to encourage) conversation.

Setting guidelines for participation at the beginning of the course is also recommended. Participants who are new to online learning need "coaching" on how to communicate in this medium effectively. For example, students might be asked to submit one original posting and two replies to another participant as a minimum weekly contribution. Making these expectations clear at the very beginning of the course can have a strong impact on learners' participation and interaction in the course.

Weaving and Summarizing

A particular technique that is a key in good online facilitation is summarizing students' contributions, and weaving them together into a brief statement of issues and points for debate and discussion. In doing this, it is important to use participants' names. The following is an example of a *weaving statement* from a graduate course on addiction treatment (students' names have been changed):

> Hi everyone,
>
> This past week's topic raises some very challenging issues—both in practice, and personally as well. Maya's question on how to respond when clients or other practitioners invoke stereotypes is a delicate one—on the one hand, as James pointed out, we may be afraid of offending, particularly if we are from a different cultural group ourselves. On the other hand, Rochelle noted how stereotyping behaviour clouds the heterogeneity within cultures, and also can perpetuate racist, sexist, homophobic, and other unacceptable myths and misconceptions.
>
> So how to respond? Martina's idea of shifting the focus back to the individual's personal experience or values makes sense for me. In addition, it strikes me that some of what we've already discussed around labeling and stigma is relevant here. Is it the label that's important, or the behaviour that an individual is struggling to change? What would such a statement sound like in practice? Would anyone like to take a shot at this?

This technique can be useful when the discussion on a given topic begins to wind down—skillful summarizing and weaving can consolidate what has been discussed, and move the discussion to the next level. Using learners' names reinforces participation and also gives credit for individuals' contributions.

Summary of "Best Practices" Tips

This section has covered considerable ground in both anticipating barriers and providing suggestions. The following is a summary of best-practice tips noted in this article and in the online learning literature:

- Make personal contact with each student at the beginning of the course, either through telephone or e-mail, to establish a connection and to offer assistance;
- Ensure that all students are comfortable contacting technical support services, and that these services are effective in helping them resolve technical issues;
- Set guidelines at the beginning of the course on netiquette (guidelines for computer-mediated communication), including keeping messages brief, not being overly concerned with spelling and grammar in postings, and checking in and participating frequently; also, set guidelines on participation frequency (number of messages posted weekly, or number of times logging into the course);
- Structure a combination of synchronous and asynchronous modes (synchronous communication may be especially helpful for group decision-making);
- Create learning partners at the beginning of the course (possibly pairing a student who has little computer experience with a more experienced peer) to increase feelings of connectedness and confidence;
- Devote the beginning of the course to introductions and mastering the technology;
- Post frequent, brief messages, particularly at the beginning of the group's discussions, to model desired behaviour;
- Periodically weave together participants' contributions in a summary statement, identifying areas for further reflection and discussion, and/or use transcripts of online exchanges as the basis for reflective assignments;
- Actively encourage students to respond to one another's messages, or reference others' contributions in their postings (interactivity);
- Be aware of the emotional dimensions to learning in clinical content areas;
- Invite expert visitors to take part in the discussion or provide feedback on students' work;
- Build in mechanisms for informal learning and socializing;
- Incorporate images and language that reflect diverse cultural backgrounds; and
- Provide a menu of group-based and individual assignments designed to appeal to a variety of learning styles. These might include journal writing, online fantasy role plays or patient simulations, and joint writing projects.

Conclusion

Online learning in addictions and mental health represents an opportunity to disseminate practical knowledge in an accessible and timely manner. However, the quality of the online experience depends

largely on the extent to which instructors are able to help learners overcome some of the inherent barriers in computer-mediated communication. This article has summarized some of the key issues and challenges with online communication and learning, and has suggested best-practice strategies for enhancing students learning experiences and outcomes. However, online learning is something of a "moving target," given the rapid advances in CMC technology and applications. As the technology changes, so too will our learning solutions need to change. Perhaps the one certainty is that, like classroom-based learning, online learning can be executed well or poorly, regardless of how advanced the technology becomes. Engaging practitioners in a dynamic and interactive experience must be a priority in our continuing professional education initiatives in the addictions and mental health field.

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