

EBE Briefs

Evidence-Based Education

Fostering Communication in Online CSD Offerings

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Abstract: The emergence of online learning in higher education and Communication Sciences and Disorders (CSD) provides an impetus to understand best-practices in online instruction. A full understanding of how computer-mediated communication (CMC) is utilized in online courses is an important area for study with implications for faculty training and student learning. The article reports the results of a survey of 126 experienced instructors in online learning in the area of CMC, including asynchronous and synchronous discussion forums. Analysis of results revealed patterns of use and faculty training in CMC. These findings inform CSD faculty on best-practices in the use of CMC with the goal of optimizing the educational experiences of the online learner.

Keywords: CMC, faculty training, online learning, communication sciences and disorders

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With the emergence of online learning and educational technologies in higher education, university programs in audiology and speech-language pathology have been moving forward with the use of these technologies for preparation of future professionals. According to the American Speech-Language-Hearing Association's (ASHA) HES CSD Educational Report 2010–2011, 19% (13/68) of the responding audiology entry-level programs offer at least some courses online (ASHA, 2011). Forty-five percent (99/222) of speech-language pathology graduate programs responding offer at least some online coursework at the graduate level, with 14 programs in offering a full graduate degree through online coursework. The data do not include programs offering pre-requisite coursework online or blended coursework in which face-to-face and online instruction is combined. The number of graduate programs in CSD that employ online education technologies is likely to increase given the national trends in online learning and the continued demand for well-prepared professionals in speech-language pathology and audiology.

COMPUTER-MEDIATED COMMUNICATION

An important aspect of online learning involves instructor-to-student and student-to-student interactions. These interactions commonly occur within the online environment as computer-mediated communication (CMC). CMC is most simply defined as “communication mediated by interconnected computers, between individuals or groups separated by space and/or time” (Luppicini, 2007, p. 142). It includes, for example, text-based interactions through chat rooms and discussion forums, as well as audio-video exchanges through web-conferencing applications. CMC interactions can occur in two modes, asynchronous and synchronous, referring to the temporal relationship of the communication. The asynchronous mode involves creating a discussion thread that other participants may respond to at a later time (e.g., discussion forums and e-mail), while the synchronous mode refers to situations when participants interact simultaneously (e.g., chats and instant messaging).

Research in the area of CMC has evolved from a description of the technologies employed to a focus on its educational implications. In comparing CMC and traditional classroom discussions, researchers have demonstrated comparable student performance and collaboration across classroom

and online formats (Hara, Bonk, & Angeli, 2000; Luppicini, 2007; Peterson, 2009; Pilkington & Walker, 2003) suggesting that CMC is equally suited as a means for students “to stay connected to peers and receive prompt feedback from the instructor” (Belderrain, 2006, p. 144). Online discussions have the advantage of encouraging deeper analysis of material, while allowing students to avoid “evaluation apprehension and peer influence” (Luppicini, 2007, p. 169) inherent in face-to-face discussions. Students engaged in CMC are reported to engage more equally in discussion, outperform in critical thinking and task-focused interaction. They report lower level of apprehension and feelings of anonymity allowing for great risk-taking in responses when compared to traditional classroom settings (Luppicini, 2007). Therefore, it is important to ensure that faculty are well prepared to utilize CMC within the online learning environment in a manner to support the desired learner outcomes.

FACULTY TRAINING

The long term success of online learning programs depends on faculty who are capable of and willing to adapt their current practices and learn new skills in order to become effective in the online environment. Current research supports the importance for faculty development and training in the area of online learning (Allen & Seaman, 2010; Pagliari, Batts, & McPhadden, 2009; Shattuck, Dubbins, & Zilberman, 2011; Wolf, 2006); yet methods of training online faculty are variable and best-practices are still emerging. Although some institutions require faculty training prior to teaching online, most institutions offer voluntary training opportunities (McCarthy & Samors, 2009). One study reported that only 44% of responding universities offered training to online instructors (Shattuck et al., 2011). When asked to rate the quality of the faculty training, 35% of the instructors rated faculty training and support as below average (Allen & Seaman, 2010). Researchers have identified a lack of or insufficient faculty training in online instructional strategies as a barrier for online instructors (Allen & Seaman, 2010; Shea, 2007; Tabata & Johnsrud, 2008). Based on the importance of both CMC and faculty training in online instruction, the purposes of the study were to (1) examine how CMC is used in online courses in higher education, (2) determine the nature of the faculty training in CMC and (3) make recommendations for faculty training and use of CMC in online courses in communication sciences and disorders (CSD).

METHOD

The Survey

A review of the literature failed to reveal an existing survey instrument designed to meet the objectives of the study. Therefore, as part of this research project, an online survey was developed to assess ways CMC was employed in online higher education courses. Based on feedback from a pilot survey of nine experienced online instructors in CSD, a final survey of 33 items was created in Qualtrics™, an online survey program.

Survey questions were designed to gather information about the types of CMC technologies and applications within online courses in higher education. The survey included questions about the training experiences in utilizing online learning and CMC specifically. Table 1 provides the organizational structure of the survey along with sample questions. A variety of question forms were utilized within the survey to maximize information gathered for analysis. In certain instances, participants were able to provide multiple responses (i.e., check all that apply) and type in responses not offered (i.e., other).

Participants

The names of potential participants were obtained from colleagues at universities known to offer online courses. Instructors who taught at least one fully online course at the college/university level in the five years prior to the study were permitted to complete the survey. One hundred ninety-nine potential participants were directly contacted by e-mail through the Qualtrics™ online survey program, with a response rate of 54% (108/199). An additional 18 participants were solicited indirectly through e-mail requests forwarded by colleagues, yielding a total of 126 completed surveys. There were five incomplete attempts of the survey, which were not included in the analysis of responses.

RESULTS

Demographics

The majority of participants were from Virginia (70%), with the remaining from Florida, Ohio, Kentucky, Louisiana, Michigan, Nebraska, New York, Oregon, Tennessee, and

Texas. Twenty-nine percent of the participants taught one to three online courses in the five years prior to the study, 22% taught four to six courses, 15% taught seven to nine courses, and 34% taught more than nine courses. Participants had experience teaching at all levels of higher-education instruction including undergraduate (62%), graduate students (61%), and non-degree seeking students (12%). Participants also taught across a variety of content areas. Figure 1 shows the distribution of content areas of courses taught online with the main areas being Healthcare and Allied Health (38%) and Education (35%); including speech-language pathologists and audiologists. The majority of participants (52%) were in tenure-track positions, 18% were in non-tenure track positions (or the university did not offer tenured lines), 26% identified themselves as adjunct faculty, and 2% identified themselves as a graduate instructor. Despite being a sample of convenience, the demographics of the participants in the survey reflected an array of experience in online teaching across a variety of content areas with a range of students, indicating a higher likelihood of generalization of findings from the collected survey data.

Synchronous and Asynchronous Discussion Forums

Participants responded to questions about the technical and pedagogical use of both asynchronous and synchronous discussion forums. Ninety-three percent of participants used asynchronous discussion forums and 59% used synchronous forums in course teaching. While both types of discussion forums were primarily text-based, synchronous discussion forums were more likely to employ audio, audio-video, and graphic components. Table 2 provides a comparison of the formats employed in synchronous and asynchronous discussion forums. Table 3 offers a comparison of the pedagogical applications of synchronous and asynchronous discussion forums. Asynchronous forums were most often used for student discussion and/or debate, while synchronous forums were most frequently used for content delivery. Asynchronous discussion forums would allow students to discuss ethical dilemmas, such as financial incentives by hearing aid manufacturers. Faculty may employ a synchronous forum to engage students in interpreting a videofluoroscopic swallow study. Data indicated that asynchronous discussion forums were less often moderated (92%) than synchronous forums (97%). The instructor

served as the moderator/facilitator in asynchronous and synchronous forums 89% and 99%, respectively. Graduate students and students enrolled in the course served as moderators 7% and 21% respectively in asynchronous forums; as compared with both groups serving as moderators 9% of the time in synchronous forums. In terms of the grading parameters for discussion forums, 74% of the instructors graded asynchronous discussion forums, while only 38% of the instructors graded synchronous discussion forums. When graded, asynchronous forums comprised an average of 19.5% of the final grade compared to 16.8% of the final grade for synchronous forums. Instructors ranked quality of posting as determined by the instructor, number of student postings, and length of student postings as leading factors in determining grades for both asynchronous and synchronous discussion forums.

Other Types of CMC

Participants provided information about the use of e-mail and the telephone in online courses. All participants used e-mail in online courses. Instructors used e-mail in response to student e-mails, to make announcements to the class, and to provide feedback on exams and assignments. Additionally, e-mail was employed to communicate in urgent situations, as a method of submitting student assignments and quizzes, and to deliver course content. Seventy percent of participants indicated that they used the telephone as a means of communication within an online course. Table 4 provides a comparison of the uses of telephone and e-mail. When the telephone was employed, it was used in urgent situations, in response to phone calls initiated by students, and to provide technical assistance.

Participants were asked to report methods of CMC utilized within their online courses that were not addressed in the survey. Responses revealed that participants incorporated technologies not originally designed for educational purposes within their online courses. These included commercially available technologies intended for social networking, such as Instant Messenger (IM), Skype™, Facebook®, and Second Life®. Instructors also used blogs, wikis, text messages via cell phone, postal mail services, and face-to-face meetings to support CMC within the online learning environment. These technologies can be incorporated into any CSD course as ways to encourage collaboration between students, and between students and educators. Such would be the case

in an assignment requiring students to interview an in-service professional and formulate a report of best-practices in the field.

Faculty Training

Participants responded to questions about their training experiences related to online technologies, online pedagogies, and discussion forums. In response to questions about training experiences in online technologies, 83% of participants reported learning about general online technologies through hands-on experience and self-instruction. Eighty-one percent reported completing a non-credit course or in-service training. Additionally, participants reported learning informally through other online instructors and by reading books and articles. Ten percent of the participants completed college level coursework in the area of online learning technologies. It was reported that the majority of formal and informal training was provided by university instructional technology (IT) staff and university Help Desks. Table 5 shows the combination of methods of faculty training for online technologies, online pedagogies, and discussion forums.

DISCUSSION

Results of the study revealed specific patterns in the online technologies, pedagogies, and faculty training in CMC which can be applied to online education in CSD either in a fully online course or as part of a traditional course. The results show that asynchronous communication was the most frequently used form of CMC. Primarily, CMC took the form of text-based communication that was used to foster student-to-student interaction. Within CSD courses, asynchronous discussion has many potential uses, including the following:

- Assigning case-study assignments to encourage collaborative clinical decision making within the context of a problem-based learning experience.
- Identification and discussion of professional ethical dilemmas, which students might encounter in their clinical practice.
- Student-led discussions of evidence-based practices based on research articles provided by the instructor.

Results of the study offer guidelines for efficient and effective use of email and telephone communications. All participants utilized email for communication in their online courses for a variety of purposes including student announcements, providing student feedback, and in response to student questions. Telephone was most often used in response to student requests and to provide technical assistance to students. While these types of individualized communications are necessary in any learning format, some faculty may find these demands formidable in online learning. Strategies to minimize instructors' time spent responding to individual student emails and telephone calls include (1) establishing clear written expectations and instructions for communication within the online course and/or syllabi, (2) utilizing group email transmissions and regular posting of announcements when possible, (3) establishing an asynchronous forum such as "student lounge" to encourage student-student support systems, and (4) identifying a variety of resources for technical assistance that are available at the time needed (i.e., just-in-time).

Findings of the survey suggest that synchronous forums are often instructor-led for purposes of content-delivery and serve as a forum for response to student questions. This type of CMC appears to lend itself to use of audio-video technologies such as those employed in Skype and Facetime, and are well suited to the delivery of content in a virtual lecture format. Synchronous technologies allow experts to serve as guest lecturers for graduate classes without the expense and travel time. For example, the developer of an approach to phonological remediation was able to lecture for two hours to a group of graduate students located across the country. Graduate students in audiology and speech-language pathology can conduct their own study sessions to review the anatomy and physiology of the inner ear employing the technologies mentioned.

Also of interest is the finding that instructors are using social media such as Twitter®, blogs, Facebook, and SecondLife as forms of educational CMC. SecondLife offers a unique and exciting opportunity for education and training in CSD. Williams (2007) has explored the use of immersive environments and SecondLife for training speech-language pathology graduate students to interact with virtual clients. Her research suggested that the student consider virtual experiences as similar to real-world interactions with clients. A number of educators predict that avatars and

virtual environments are indeed the next generation of online learning. There are projects in development to allow audiology students to conduct hearing assessments using virtual patients.

Results of the study have implications for CSD faculty training in online instruction and the use of CMC. Instructors in this study reported they most frequently obtained training in online learning and CMC through informal means such as hands-on training, mentoring, and self-instruction. These methods may not prove sufficient in allowing instructors to keep up with the rapidly emerging social, educational, and online technologies. Based on results of this study and best-practices in professional development and online learning, it is recommended that faculty training focuses on the pedagogical and technical considerations of educational technologies and CMC. Instruction would include information on, but not limited to, facilitation and moderation techniques, establishing online community, assessment measures for CMC, and time-management strategies.

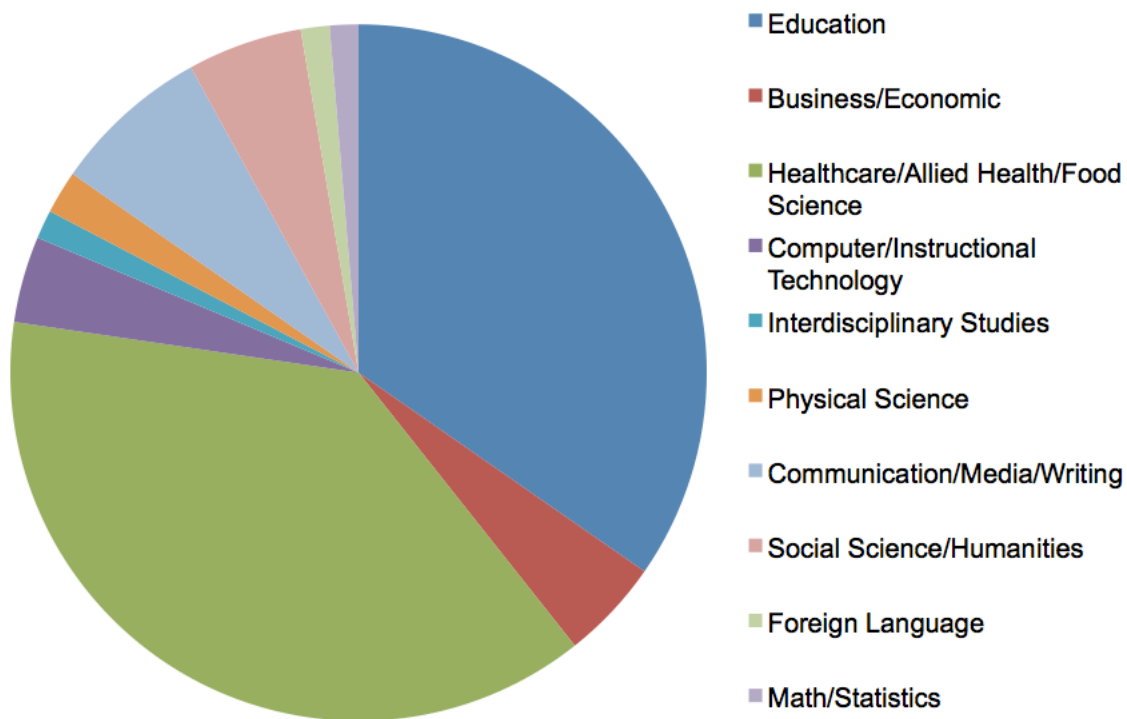
It is important that training be available in a variety of formats including "just-in-time" training that is readily available to the instructor at a time and manner that best suits his/her needs. Additionally, training in online learning and CMC should be part of the formal professional development offerings at CSD conferences and workshops. Importantly, the profession should encourage research and publication leading to the development of best-practices in all aspects of online learning in CSD.

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FIGURE LEGEND

Figure 1. Distribution of Content Area of Courses Taught Online



TABLES

Table 1. Organization of Survey Questions

Category	Parameter	Sample Question
Asynchronous and Synchronous Discussion Forums	Use	How do you utilize asynchronous discussion forums in your course?
	Moderating	Who is responsible for moderating synchronous discussion forums?
	Format	Which of the following formats do you use in the discussion forums? (text, audio, video, other)
	Grading	Rank the factors used to determine grades for participation in asynchronous discussion forums?
Other Types of CMC	E-mail	How do you use e-mail for communication in your online course?
	Telephone	How do you use telephone for communication in your online course?
	Other	What other means of two-way communication do you use not already addressed in this survey?
Faculty Training	Pedagogy of online instruction	Describe your training in the pedagogy associated with online instruction.
	Online technology	Describe your training in the technology associated with online instruction.
	Online discussion forums	Describe your training in online discussion.
Demographics	Geographic location	What state do you live in?
	Experience online teaching	How many times have you taught an online course?
	Content area	Which of the following describes the content area of your online instruction?
	Affiliations	Indicate your affiliation for the majority of online courses taught?
	Student demographics	Describe the students in your online courses?

Table 2. A Comparison of Formats Used in Asynchronous and Synchronous Discussion Forums

	Asynchronous	Synchronous
Text based	100%	88%
Audio	16%	72%
Audio-Video	18%	32%

Table 3. A Comparison of Uses of Asynchronous and Synchronous Discussion Forums

	Asynchronous	Synchronous
Overall use	93%	59%
Student collaboration	55%	30%
Student discussion or debate	89%	66%
Instructor delivery of subject matter	53%	79%
Student community building	43%	30%
Provision of information about course requirements	60%	70%
Instructor response to questions related to subject matter	50%	82%

Table 4. A Comparison of Uses of Telephone and E-mail in Online Courses

	Telephone	E-mail
Communicate in urgent/emergency situations	41%	34%
Respond to students	54%	100%
Provide feedback on assignments and exams	6%	68%
Provide student announcements	0%	89%
Deliver course content	2%	15%
Other	3%	8%
I don't utilize the technology	30%	0%

Table 5. Combined Methods of Training in Online Technologies and Pedagogies

	Online Technologies	Online Pedagogies	Online Discussion Forums
Non-credit course or in-service	81%	73%	66%
College credit coursework	10%	14%	9%
Read articles/books	67%	63%	47%
Informally from other online instructors	68%	61%	62%
Self-instruction and hands on learning	83%	78%	81%
other	14%	10%	6%