

# **THE IMPACT OF INTERACTIVE COMMUNICATION TOOLS IN ONLINE LEARNING COMMUNITIES**

Nick Linardopoulos  
Multidisciplinary and Emerging Programs  
Drexel University  
USA

Kristen Betts  
School of Education  
Drexel University  
USA

## **Abstract**

This paper discusses the use and importance of existing and emerging interactive communication tools used in online courses. The challenges and opportunities associated with the use of those tools are examined in light of student feedback. Our findings show that interactive communication tools in online courses have the potential to greatly contribute to a positive online learning experience, if used appropriately. The implications for faculty teaching online courses are also discussed.

## **Introduction**

Higher education in the United States is at a pivotal time in history and online education is playing a critical role in the long-term sustainability of many programs and institutions. The U.S. economic recession has resulted in severe cuts in state funding for four- and two-year colleges/universities, declining endowments, and decreases in fundraising while at the same time operational costs have continued to rise. For increasing numbers of colleges/universities, online education provides extensive programming options to reach new student markets through quality academic curricula and innovative delivery which can increase tuition revenues as well as expand an institution's future alumni base.

The National Center for Education Statistics (2008) reports that two-thirds (66 percent) of two-year and four-year Title IV degree granting higher education institutions in the United States offer online, hybrid/blended, or other distance education courses. In fact, online student enrollment growth rates now exceed overall higher education enrollment growth rates in the United States. According to Allen and Seaman (2008) the online enrollment growth rate increased 12 percent between fall 2006 and fall 2007 while overall higher education enrollment

only increased 1.2 percent. Allen and Seaman (2008) also reported that over 20 percent of all U.S. higher education students reported taking at least one online course.

Recognizing online students may infrequently or never come to campus, it is critical that online programs develop and integrate effective communication strategies to connect students to peers, faculty, and the campus. Communication strategies must be developed to engage students and build community through programming (e.g., student orientation, online first-year experience programs, academic advising, student support services, online events, etc.) and instruction (e.g. asynchronous — lecture materials, voice and text announcements and emails, blogs, wikis, etc; synchronous — live classroom lectures, teleconferences, text messaging, etc.). Those communication strategies are commonly used in online learning communities. Ingram (2005) argues that all of Ormrod's (2004) criteria for defining a learning community (e.g. discussion and collaboration among members, critical assessment of participants' work) are also applicable in an online setting. Ingram's key question for the online learning communities is whether the online communication strategies such as the ones mentioned above provide a comparable experience in terms of immediacy as their face-to-face counterparts. Clearly, effective communication is vital to student recruitment, engagement, community development, and retention which are directly linked to online program long-term sustainability.

## **Review of Literature**

"Communication is a growing discipline" (Pfau, 2008, p. 598). However, according to Littlejohn and Foss (2005) establishing a single definition for communication "has proved impossible" (p. 12). Tubbs and Moss (2006) state that "many people find it helpful to use a tangible model" to describe the human communication process (p. 10). Therefore, this paper will build upon the Tubbs Communication Model which includes Communicator 1 (the sender/receiver) and Communicator 2 (the receiver/sender). Tubbs and Moss (2006) describe both Communicator 1 and Communicator 2 as sources of communication since each originates and receives messages simultaneously. These messages are transmitted verbally and/or nonverbally. While Communicator 1 originates the message, the transmittal of the message may be affected by the channel or interference. Channels of communication include face-to-face communication, organizational communication, and mass communication.

In online education, effective communication is particularly important because there may be limited or no face-to-face communication and interaction throughout a student's enrollment" (Betts, 2009). Therefore, faculty/adjuncts who teach in

online programs must receive training on effective communication, the role of communication in online education delivery, and how to properly use new technology to support effective communication. As indicated by Lorenzetti (2003),

Faculty members are one of the most critical hires that you have to make in your online program. While traditional, on-campus students form an impression of your institution based on factors from physical plant to extracurricular activities, the one face that often represents your entire institution to online students is the instructor. (p. 1)

Faculty play a critical role in student engagement and retention. According to Tinto (2006), “Frequency and quality of contact with faculty, staff, and students has repeatedly been shown to be an *independent* predictor of student persistence” (p. 2). Additional research by Chickering and Gamson (1987) reveals that knowing faculty and faculty concern assist students get through challenging times and enhance a student’s intellectual commitment. Interaction in face-to-face, online, and blended programs vary depending upon the channels of communication integrated into the courses. Therefore faculty need to be trained in how to communicate in an online environment. This is particularly important since, according to Faharani (2003), interaction in a face-to-face program is predominately based on verbal and nonverbal communicative behaviors while interaction in online courses is predominantly based on written communication. As further indicated by Collison, Elbaum, Haavind, and Tinker (2000) “in the virtual world, there is no body language from which the instructor can gauge the interest of the participants and, consequently, adjust the tone or pace of the presentation” (p. 1). Therefore, faculty/adjuncts need training to successfully communicate with students through new technologies and course management systems.

### **Purpose of Study**

In light of the literature findings described above, the purpose of this study is to examine the importance of a selected number of online course management system tools in establishing an online learning community. In addition, this paper will provide insight into how the specific online course management system tools affect students’ overall perception of the course experience. Based on those two goals, the study attempts to answer the following research questions:

- What is the effect of the communication tools used in online courses in creating online communities?
- What is the effect of the communication tools used in online courses on students’ overall perceptions of the course?

## Course Management System Tools

Hardware and software improvements have allowed for the creation of a number of interactive course management system tools which afford course users the opportunity to communicate both synchronously and asynchronously. This section summarizes the use of the interactive communication tools to which the study's participants were exposed to. Included with the description of each tool is an empirical assessment of the opportunities and challenges associated with each use based on the authors' experience.

### Text Discussions

This traditional mode of online interactions allows users to post text based messages and participate in asynchronous discussions. Broad or specific discussion topic areas could be posted by the course instructor and students are often required to provide a response the instructor's prompt as well as respond to fellow classmates. This is one of the most commonly used communication tools in online courses. Online participants benefit from the traditionally text-based discussions by reading the different responses from their peers. In addition, text-based discussions are easily accessible as users can submit a response from virtually any internet- ready device. However, the lack of non-verbal communication elements combined with the asynchronous nature of the text-based messages and the limited presence of the paralanguage code *may* result in a decline in both the quantity and the quality of the participants' interactions. *For example*, students may feel less engaged and motivated in responding to a plain text post. While the instructor can influence to some degree the motivation level of the participants it is the online students who ultimately control the nature of the text-based discussion.

### Blogs

A more recent text-based communication tool used in online courses is the blog. The blog tool allows users to make asynchronous text-based entries that appear on a webpage format. Course participants are typically able to comment on individual blog entries if the course instructor enables that option. Course instructors also have the option of allowing students to create their own individual blogs or create one blog for the entire course. The course instructor also has the option of making the blog entries private (viewable only by the instructor) or public (viewable by the entire group). This journal-type tool does enable students to interact a bit more informally; however, the fact that blog interactions typically contain less structure than the traditional text-based discussions may pose a challenge for students who prefer detailed instructions in terms of the content of the entries.

### **Audio Discussions (Voiceboards)**

Audio discussions allow users to post audio based messages and participate in asynchronous discussions. In other words, audio discussions or voiceboards, as this communication mode is often referred to, are created under the same basic assumptions in terms of their purpose and expected use as the traditional text based discussion tools. However, voiceboards enable participants to record their contributions. The inclusion of the contributors' voice may result in a stronger sense of communication immediacy among students. While the non-verbal communication elements are still absent in this mode, users are exposed to paralanguage features such as tone, pace, pitch etc through the audio interactions which may result in an increased level of motivation to participate and engage in the discussion. In addition, a well thought topic submitted through the voiceboard tool may result in the development of an asynchronous "debate" as opposed to a simple message exchange which is typical of a traditional text based discussion. A possible drawback of the voiceboard tool is the specific accessibility requirements: participants need to have access to a microphone and speakers in order to use the voiceboard tool. Therefore, the accessibility of voiceboards is more limited compared to the text based discussions.

### **Announcements/Voice Announcements**

The announcement tool allows the instructor of an online course to post frequent text-based updates and reminders on the home page of the course. Conversely, the voice announcement tool enables instructors to post audio announcements; students have to click on a play button and listen to the instructor's commentary through headphones or speakers. The use of the voice announcement tool may result in a closer interaction between the students and the instructor as opposed to a plain text-based update. For example, students may be able to relate to the instructor much more through the voice announcement tool as its use includes two out of the three main communication codes (verbal and paralanguage).

### **Voice E-mails**

In addition to the traditional text-based e-mail messages, online instructors have the option of sending voice e-mails to students. When a voice e-mail is sent, students receive a link that includes a control panel through which the message can be played. Students can listen to the e-mail message through the use of headphones or speakers. As with the other voice tools, the communication process is likely to be more immediate between the instructor and the student through a voice e-mail due to the presence of the paralanguage code in addition to verbal code.

## **Live Classroom**

The live classroom software is one of the few tools used in online courses that allows for synchronous interactions between the members of the course. It is also the only tool that enables the main presenter to use live video communication. Typically, course participants are invited to join a live classroom session through a designated link (called a room). Once in the room, participants can see a live video feed of the main presenter along with the optional use of visual aids (PowerPoint, websites, notes on the board, etc.). Students can interact with the other members and the presenter by using a text-based chat function, indicate that they wish to speak by using a “raise hand” function, agree or disagree with a statement by using the “yes/no” function and/or communicate a certain action (applaud, approve, want the presenter to speed up) by using the “emotions” function. While the synchronous mode of communication allows for a high level of interactions due to the presence of all three communication codes (verbal, non-verbal, paralanguage), scheduling can be a challenge as online course participants are spread out across different time zones in the world.

## **Student Perspectives on Course Management System Tools**

### **Survey Description**

In order to effectively use all of the interactive course management system tools described above a significant time commitment and effort is required from the instructional and course design teams. Therefore, it is important to solicit feedback from online students who were exposed to the tools described above in order to gain an understanding on the impact of those tools in students’ overall perception of the course and the ability of those tools to meet their intended function. Accordingly, students in three online courses which included one section of interpersonal communication and two sections of public speaking from a major university in the United States were surveyed in regards to their views on the use of the communication tools used in their courses. The survey was available during the last week of each course. Student participants were awarded a 5% extra credit bonus towards their final grade for completing the survey. Overall, a total of 40 students were invited to participate in the survey of which 30 responded, a response rate of 75%. Results were reviewed for any major discrepancies between the three different sections. While slight variations were observed in terms of the preference of some communication tools over others across the sections, no statistically significant difference was detected.

### **Quantitative Findings**

As indicated on Table 1, most students clearly felt that the voiceboard tool was overused.

Table 1: Communication Tools Overused

Text Discussions	27.27%
Voiceboards	40.9%
Voice E-mails*	9.10%
Live Classroom	13.63%
Blogs	9.10%

\*Voice E-mail description may include voice announcements.

This is a surprising finding given the fact that participation through the voiceboard tool was only required in about 30% of the discussions.

On the other hand, as indicated on Table 2, a significant number of students felt that the voiceboard tool was used appropriately coming second only after the traditional text-based discussions which is the standard communication tool for most online courses.

Table 2: Communication Tools Used Appropriately

Text Discussions	28%
Voiceboards	25%
Voice E-mails	14.71%
Live Classroom	22.06%
Blogs	10.30%

An even more surprising finding of the survey results as shown on Table 3 is that a high number of students felt that the voiceboard was not used enough, again coming second only after the live classroom sessions. Due to scheduling limitations live classroom sessions were utilized twice for the purpose of interacting and four times for the purpose of completing required presentations for the students who chose to use that option.

Table 3: Communication Tools Underused

Text Discussions	11.54%
Voiceboards	30.77%
Voice E-mails	7.69%
Live Classroom Sessions	42.31%
Blogs	7.69%

In terms of the communication tool through which students feel were best able to interact with their peers and the course instructor the findings are mixed. As highlighted in Table 4, text discussions and voiceboards are the top two tools that students feel allowed the maximum level of interaction. Live classroom sessions were ranked third by students in terms of the level of interaction, a surprising finding given the potential level of interaction that can be achieved through this tool.

Table 4: Communication Tool Contributing Most to Interactive Ability with Classmates and Instructor

Text Discussions	30.30%
Voiceboards	30.30%
Voice E-mails	12.12%
Live Classroom Sessions	21.21%
Blogs	6.07%

The most important finding of the quantitative component of the survey deals with the students' overall perception of the use of the communication tools in the selected courses. As highlighted in Table 5, an overwhelming majority of students believes that the specific communication tools do to at least some degree contribute to a positive learning experience. It is important to note that more than 70% of the student respondents indicated that the communication tools used in their courses made a significant contribution towards a positive learning experience.

Table 5: Overall Perception of Communication Tools Used

Significantly contributed to a positive learning experience	70%
Somewhat contributed to a positive learning experience	20%
Had no effect on the learning experience	10%
Negatively affected the learning experience	0%

### Qualitative Findings

The qualitative finding of the survey, triangulate to a large degree the quantitative findings. Students were asked to indicate which of the communication tools they enjoyed most and which ones they enjoyed least and provide reasons regarding their rationale.

Specifically, students report that they enjoyed the interaction and immediacy associated with the voiceboard tool and a few of them would like to see more audio discussions. In addition, according to the survey results students enjoyed the opportunity for real-time interactions as well as to the resolve questions through the live classroom sessions. The least favorite tool for students was the blog; students reported that the lack of structure did not allow them to really understand the role of this communication tool.

While the qualitative findings show the features of the communication tools that students mostly enjoyed, they also point at areas of concern that need to be addressed. For some students, the voiceboard discussions seemed unnatural as it was a tool outside their comfort zone of traditional text-based discussions used in online courses. In addition, the hardware (use of microphone and speakers) and software requirements (high-speed and firewall free internet connection) for some of the communication tools proved to be more of a distraction rather than an advantage for some students.

Below is a sample of positive and negative qualitative comments regarding the use of the specific communication tools mentioned above:

**Positive comments (most enjoyable communication tool)**

*The communication tool I enjoyed most in the course was the audio voice board. Sometimes it is nice when you are having a discussion to hear the responses instead of just reading them. It makes you feel more connected to your classmates.*

\*\*\*

*I think, for me, voice discussion board was a new way of interacting with the class. At the beginning it was little out of my comfort zone. But very soon I realized that it is little more powerful in learning — may be because it put more responsibility and accountability on my part than just text discussion.*

\*\*\*

*I enjoyed Live Classroom the most as it enabled me to hear and see others in the course and interact in a real time environment rather than waiting for a reply to a post.*

\*\*\*

*The live classroom session because it afforded me the opportunity to interact with my instructor and classmates realtime. I also liked having the ability to ask question on topics that were unclear in the course. I truly believed this technology is innovative and is a wonderful addition to the learning process*

### **Negative comments (least enjoyable communication tool)**

*Voice message boards. I was not able to purchase the correct microphone until the second or third week of class; also, sometimes I can do homework on my lunch break, but I am doing it from my desk and it is much easier to type than it is to whip out a microphone and “talk” your homework.*

*I\*\*\**

*I did not like the voice board at all. If I wanted to talk to people I would sit in class and do so!*

*\*\*\**

*Live class room discussion was least enjoyable for me. But not due to its effectiveness but due to the timing. In the States couple of hours of time differences does not may that much of an issue, but there is a 9–12 hours time difference, it can be very inconvenient.*

*\*\*\**

*The blog is the tool that I found to be the least rewarding. I did not know what to say and I routinely tried hard to think of ideas that I could relate back to the course material.*

## **Discussion and Conclusion**

The findings of this paper indicate that the majority of the students appreciate and enjoy the opportunity to interact with their peers and instructors through the use of the existing and emerging communication management tools. However, the effective use of those tools is subject to a few qualifications. First, the instructor or course moderator must be knowledgeable in the use of the specific tool. In this way the tool can be utilized properly and in such a way as to make students comfortable with its use. Second, different course management tools are best fitted to specific subject areas (e.g. the blog tool can be valuable in a reflective-based course, but not in a Mathematics course). Third, and most important it is crucial

that online students are given a few options in regards to the type and amount of use of the different communication tools; using too many of those tools can be confusing whereas using only one can be risky. With the continuing software and hardware improvements it is expected that the use of the interactive tools discussed in this paper will increase in online courses. Further research is needed in order to establish how students and instructors in online courses can use the increasing number of options for interactive tools available to them in order to maximize the quality of the online learning experience.

Effective communication is extremely important to student engagement and retention in online education. For most online students, their primary contact with an institution is through their communication with faculty. In this capacity, faculty are truly institutional ambassadors; therefore, instructional and communication training is essential (Betts, 2009). While in online education, students may not have the advantage of the many visual and vocal cues inherent in face-to-face courses, advancements in technology and telecommunications provide faculty with the ability to reach out to students through course management system tools that support text, voice, and video communication.

### References

- Allen, E., & Seaman, J. (2008). *Staying the course: Online education in the United States 2008*. The Sloan Consortium. Babson Survey Research Group. Retrieved December 25, 2008, from [http://www.sloan-c.org/publications/survey/pdf/staying\\_the\\_course.pdf](http://www.sloan-c.org/publications/survey/pdf/staying_the_course.pdf)
- Betts, K. S. (2009). Online human touch (OHT) training and support: A conceptual framework to increase faculty and adjunct faculty engagement, connectivity, and retention in online education, Part 2. *Journal of Online Learning and Teaching*, 5(1), 29–48. Retrieved April 2, 2009, from [http://jolt.merlot.org/vol5no1/betts\\_0309.htm](http://jolt.merlot.org/vol5no1/betts_0309.htm)
- Betts, K. S. (2008). Online human touch (OHT) instruction and programming: A conceptual framework to increase online student engagement and retention in online education, Part 1. *Journal of Online Learning and Teaching*, 4(3), 399–418. Retrieved April 2, 2009, from [http://jolt.merlot.org/vol4no3/betts\\_0908.htm](http://jolt.merlot.org/vol4no3/betts_0908.htm)
- Betts, K. S. (2009). *Lost in translation: Importance of integrating effective communication in online education*. Manuscript submitted for publication.
- Chickering, A. W., & Gamson, Z. F. (1987). Seven principles for good practice in undergraduate education. *AAHE Bulletin*, 39(7), 3–7.
- Ingram, A. L. (2005). Engagement in online learning communities. In Bourne J. & Moore C.J (Eds.), *Elements of quality in online education: Engaging communities* (pp.55-67). United States: Sloan Consortium.
- Littlejohn, S. W., & Foss, K. A., (2005). *Theories of human communication* (8th ed.). Belmont, CA: Thompson Wadsworth.

- Lorenzetti, J. (2003). Getting the best out of online adjunct faculty: A guide. *Distance Education Report*, 7(4) 1–6.
- National Center for Education Statistics. (2008). *Distance education at degree granting postsecondary institutions: 2006–07*. Washington, DC: US Department of Education.
- Ormrod, J. E. (2004). *Human learning* (4th ed.). Upper Saddle River, NJ: Pearson.
- Pfau, M. (2008). Epistemological and disciplinary intersections. *Journal of Communication*, 58(4), 597–602.
- Pennino, M. (2008, July 26). *Colleges cope with rising energy costs*. Lancaster Online.com. Retrieved December 15, 2008, from <http://www.universitybusiness.com/newssummary.aspx?news=yes&postid=16390>
- Tinto, V. (2006). *Taking student retention seriously: Rethinking the first year of college*. AACRO Speech. Retrieved February 5 10, 2009, from [http://soe.syr.edu/academics/grad/higher\\_education/Copy%20of%20Vtinto/Files/AACRAOSpeech.pdf](http://soe.syr.edu/academics/grad/higher_education/Copy%20of%20Vtinto/Files/AACRAOSpeech.pdf)
- Tubbs, S., & Moss, S. (2006). *Human communication: Principles and contexts*. New York: McGraw Hill.