

Access to Communication for Deaf,  
Hard-of-Hearing and ESL Students in  
Blended Learning Courses

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## **Access to Communication for Deaf, Hard of Hearing and ESL Students in Blended Learning Courses**

### **Introduction**

In an effort to better understand student perceptions of communication in blended online learning courses, a twenty-two item questionnaire was developed and sent to all RIT students registered for these courses during three quarters of instruction. The respondents were divided into four groups: Hearing, Deaf, Hard-of-Hearing, and English as a Second Language (ESL) and the extent to which these four groups had similar or different perceptions of communications and usefulness of the blended environment.

### **Blended Learning**

When deaf and hard-of-hearing learners attend traditional in class instruction, they typically do so with the assistance of sign language interpreters. However, the transfer of information from hearing instructors (who do not know sign language) through interpreters is a major concern to deaf and hard-of-hearing students. Long and Beil (2005) found that deaf adults in a traditional learning environment often feel left out of classroom communication. Because of the lag that exists between the delivery of the information by the instructor and the signing of the content by the interpreter, deaf and hard-of-hearing learners report difficulty responding to the instructor's questions or asking a timely question. They feel out of sync with the instruction and, if the classroom pace is fairly quick, they don't feel comfortable stopping the flow to ask a question of clarification. Often deaf and hard-of-hearing students feel isolated or left out of the interactions that occur with other students and the instructor in mainstream settings (Foster, Long, & Snell, 1999).

In contrast, online learning provides discussion boards, chat rooms and other opportunities for threaded discussions related to the topic at hand. The online format slows the synchronous pace and allows the deaf, hard-of-hearing and ESL students more time to compose a response or ask a relevant question. Blended learning is a combination of traditional live classroom activities and online activities. Blended learning aims to join the best of classroom teaching and learning with the best of online teaching and learning. Interest in blended learning is growing, as more and more universities become accustomed to using a courseware management system, and as academic leaders increasingly endorse active learning and the effective use of instructional technology. Some educational researchers see blended learning as a transformative process for the university (Garrison & Kanuta, 2004). The RIT Online Learning instructional model defines a blended course as any course in which approximately 25% to 50% of classroom lectures and other seat time are replaced by instructor-guided online learning activities, such as online quizzes, virtual team projects, synchronous chat sessions, and asynchronous discussions (Humbert & Vignare, 2004). Blended learning courses due to the use of the online technologies which enable collaboration should improve quality and quantity of interaction between faculty and students and students and students (Shea, Pickett & Pelz, 2003).

The first year the blended pilot was introduced at RIT, 2003 - 2004 no demographic questions were asked of student participants, but our results and students satisfaction seemed to mirror data reported by Dziuban, Hartman, Moskal, Sorg & Truman (2004) at the University of Central Florida. Course completion rates were just over 95% and nearly 70% of the students said they liked blended learning. Faculty during in-depth interviews noted that they were energized by redesigning their course for a blended format.

## Method

### Procedure

A twenty-two item, “Blended End of Course Survey” was designed by the authors to explore student perceptions of communication in the blended learning instructional format. The questionnaire consisted of sixteen Likert items, two open-ended questions and four demographic items. Details of each follow:

- Two types of Likert items were used in this study. The first asked students to rate their **agreement** with specific statements using this five point scale (5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree). Examples of these items include: “I learned more about my fellow students because part of this course was online”, and “I interacted more with fellow students because part of this course was online.” The second type of Likert question asked students to compare their level of **interaction** in this blended course to more traditional courses that meet only in the classroom using this five point scale (5 = Increased, 4 = Somewhat Increased, 3 = No Difference, 2 = Somewhat Decreased, 1 = Decreased). Examples of these ratings include: “The amount of interaction with other students” and “The quality of your interaction with the professor.”
- Response boxes followed each of the open-ended questions allowed participants to type in a response in their own words. The two open-ended questions were: “If more courses were offered like this (ones that meet in the classroom and online) what changes would you recommend” and “What did you like best about this course?”
- Finally, the survey asked four demographic questions: Student workload (full or part-time) hearing status (hearing, hard-of-hearing or deaf), level of program (graduate or undergraduate) and if English is a second language (Yes, No).

The Blended End of Course Survey was sent to 1093 students who were enrolled in blended learning courses at Rochester Institute of Technology during one academic year. Clipboard, a system for design and delivery of questionnaires was used for the set up of the survey, and each student was sent a live link via email and asked to access the survey by selecting the link. Students who responded were entered into a drawing for one of three possible fifty dollar gift certificates at the campus bookstore. Five hundred and eighty-two students responded to the survey, which is a response rate of 53 percent.

### **Participants**

Approximately 68% of the respondents were male and 32% were female. The vast majority, 96%, were full-time students while 4% were enrolled part-time. Eighty-five percent of the respondents were in undergraduate programs and fifteen percent were in graduate school. Three percent of the respondents were deaf, four percent were hard-of-hearing and ninety-three percent were hearing. Within the hearing student group, ten percent of the respondents indicated that English was a second language for them.

### **Results**

The following section summarizes our findings related to: Communication with Peers, Communication with Instructors, and Overall Satisfaction with the blended learning experience.

#### **Communication with Peers**

Of particular interest in this study is how students perceived the ease of communication with their fellow students. The following questions relate to peer interactions, and the stated percentage is the total number of individuals who indicated that they either **Agreed** or **Strongly Agreed** with each statement.

**Table 1. Communication with Peers**

	Deaf	Hard-of-Hearing	ESL	Hearing
I learned more about my fellow students because part of this class was online.	60%	66%	38%	26%

In their responses to these items, deaf and hard-of-hearing student indicated that they learned more about their peers because of the online format of the course. Hard-of-hearing students said that they interacted more with their peers because of the online feature.

The following questions ask students to compare the online course to traditional class lecture courses and rate the **amount** and **quality of interaction** with other students. The stated percentage is for the number of individuals who indicated that the amount and quality of interaction either **Somewhat Increased** or **Increased** with the blended learning courses.

**Table 2. Amount and Quality of Interaction with Students**

	Deaf	Hard-of-Hearing	ESL	Hearing
The amount of your interaction with other students.	60%	61%	41%	36%
The quality of your interaction with other students.	60%	66%	43%	31%

The most striking finding in the above items is that the deaf and hard-of-hearing students report a significant increase in the amount and quality of the interaction with peers when the blended course is compared to more traditional in-class instruction. The ESL students also indicate that the online format facilitates communication with peers, and the hearing student numbers are also positive. But the deaf and hard-of-hearing students are the most positive regarding the benefits of adding an online component to a course. The following quotes from the deaf and hard-of-hearing students help to clarify this benefit:

*“I think the online discussion is the best (part of) this class.”*

*“I like the discussion board and being able to say my opinion. I think it was much more easier for me to stand up for the Social Issues that were presented than in person.”*

*“(I like) learning about other students who are in this class and their opinion and beliefs about the things we learn in class!”*

*“I liked how I was able to interact more with other students, especially the hearing.”*

*“At least I get to read about other students’ thoughts and opinions about the assigned readings and assignments. It allows room for learning and increased knowledge.”*

*“Neutrality and respect regardless of race and disability. Only respect you receive is from knowledge and opinions not based on your appearances.”*

Thus the deaf and hard-of-hearing students felt that the online portion of these courses added to the ease of communication with their peers. The online experiences increased opportunities for sharing their opinions and gaining knowledge from fellow peers. The next section examines ease of communication with the instructors.

### **Communication with Instructors**

The ease of communication between the instructor and the students in the course are examined in the following questions. The stated percentage is for the number of individuals who indicated that the amount and quality of the interactions with the instructor either **Somewhat Increased** or **Increased** with this online course.

Table 3. Communication with Instructor (s)

	Deaf	Hard-of-Hearing	ESL	Hearing
The amount of your interaction with the professor.	65%	33%	33%	29%
The quality of your interaction with the professor.	77%	46%	28%	30%

Deaf students were the group that reported that the online format led to the greatest increase in interaction with their instructors when compared to traditional in class instruction. Approximately one-third of the other students reported increased interaction with the instructor whereas 65% of the deaf students indicated that the online format led to increased interactions with the instructor.

Deaf and hard-of-hearing students were very positive about the quality of interaction with their instructors when online interaction is present. Seventy-seven percent of the deaf students and forty-six percent of the hard-of-hearing students said that the quality of the interactions with the faculty improved in online courses. The ESL and hearing students had similar perceptions with 28% and 30% respectively saying that the online format increased the quality of interactions with their instructors.

The following quotes from deaf and hard-of-hearing students help to clarify their perspective on communication with the instructor.

*“Since no interpreters are on night class, it is more convenient for me to communicate with teacher and students online.”*

*“I seemed to have a greater voice in lending my opinion and questions regarding the topics in which I have received a great amount of feedback.”*

*“The study of cultural differences and applying it to my life was interesting, and the use of online postings was much more interactive for me.”*

*“More availability with the instructor...”*

While many students said there were communication advantages to having online access to the instructor, the majority of the deaf students said it increased the amount and quality of those interactions.



## Overall Satisfaction

While the prior sections of this paper focused on communication with instructors and peers, this section examines the overall student satisfaction with the blended learning experience. The following questions relate to student satisfaction with the blended learning format and the stated percentage is the total number of individuals who either **Agreed** or **Strongly Agreed** with each statement.

**Table 4. Overall Satisfaction**

	Deaf	Hard-of-Hearing	ESL	Hearing
I like having part of the course online and part of it in the classroom	66%	70%	53%	62%
I like learning from online activities	60%	66%	45%	51%
Other students should have the opportunity to take a class like this in the future.	77%	75%	46%	55%

Overall student reaction to blended learning was very positive with the majority of students saying that they liked having part of the course online and that they enjoyed learning from online activities. The most positive ratings were generated by the deaf and hard-of-hearing students. Between sixty and seventy percent of these students said that they liked having part of the class online, and they were able to learn from online activities and believed that other students should have the opportunity to take a blended learning course. The hearing students were a little more positive about the online experience than were the ESL students, however both groups seemed to benefit from the experience. The following quotes focus on the perceived advantages of blended learning by deaf and hard-of-hearing students.

*“I like the part where we can take part of the course in and out of the classroom.”*

*“I would say that is fun to do project but I rather try online for credit because I live off campus and sick of go to class to learn something new, I would like to get*

*online and learn something new that mean time is gonna be flexible which is much better.”*

*“The fact that the course was combined with online time really allowed me to manage my time better. It is always a long day for me, so it takes a lot of stress away for me to be able to not go to class every time.”*

*“Flexible time in when to meet for class and for on my own time.”*

*“I can say this course is more independent for the students.”*

Along with the benefits of communication ease, deaf and hard-of-hearing students point to the flexibility of the schedule and the sense of independence as important advantages of the blended learning format. Similar comments were made by the hearing students in this study.

### **Conclusion**

Students at RIT were positive about courses that used a blended learning format. When subgroups of students were examined, deaf and hard-of-hearing students were the most positive. Students with a hearing impairment appreciated the opportunity to interact directly with instructors and peers without needing an interpreter to facilitate that communication. In some ways, providing an option for online communication leveled the playing field and allowed these students greater ease of communication with their hearing peers and instructors.

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