Captions

(T2A)

MultiChat: A Multi-Person, Browser-Based, Real Time Text-as-You-Type Chat System Designed to Facilitate Face-to-Face and In-Class Interaction Between Deaf and Hearing Students

Jonathan Schull
We want to thank today's interpreters, Lorie and Christina. The presenters will introduce themselves.

There is a handout, and it's being passed around.

Good.

JONATHAN SCHULL: Hello, my name is John Schull.
This is Mike Axelrod, also from I.T., information technology, on the other side of the campus. We've been doing exploring the pros and cons of interpreters and the chat systems for mediating face-to-face interactions in the classroom.

We've developed some technology. We've done some comparative research, and we want to give you an overview of what we are and show you some work in progress.

We have effects here.

We are also joined by Qing Quan, who is somewhere back there.

He was one of the participants in the usability test we're going to see there he is, OK.\~\_\_\_ we're going to show you today.

INES Winkler may be here.

She also participated, and LIZETT Ching Shawn and two other students that I mentioned, Brian Ijeoma, were involved in this research in its earlier stages as well.
And I'll let Larry just sort of help us find out a little bit more about you, and then we'll compare notes.

LARRY QUINSLAND: We're just curious, how many of us I.M. in your own social communications?

How many for a business?

And how many of you limit your kids' use of I.M.?

And how many of you have used it in classroom situations?

JONATHAN SCHULL: We will ask you during our talk, after our talk, and any other time to share your experiences with us, as once you catch on to what we're trying to do here, your own experience will be quite useful to us.

Our premise is that increasingly in education, there's a move from the notion of the sage on the stage, or in this case, the sages on the stages, towards the notion of the guide on the side, where the students are working with each other, and it's our job to facilitate that.
The key notion is the student discussion, collaboration, hands-on learning, all promote active learning, but when you have deaf or mixed populations in the classroom, it poses special challenges.

Larry and I got together on this research when, actually, we jointly submitted...\__\__

or rather, we in parallel submitted proposals to a research fund here at R.I.T.

called the Provost Learning and Innovation Grant, and it turned out we both had been using chat in the classroom and thinking about some of the special opportunities that could arise.

And we will begin just by showing you some examples of some of the kinds of ways we have used chat in the classroom.

LARRY QUINSLAND: OK. One is just contact information for future use.

The second, we would appreciate getting these back at the end of the session, where you can share some information with us, and if you would care to continue this dialogue, please give us your information, and we'll be in touch with you.

Where did my desktop go?
There it is.

JONATHAN SCHULL: Oh, what happened the screen resolution has changed?

LARRY QUINSLAND: Yes.

JONATHAN SCHULL: Show the desktop.

LARRY QUINSLAND: I'll get them all set to go right here.

All right, that will help.

That's one.

That's two.

That's three.

That's four.

One more.

OK.

We'll try to take these in
In this case, 12 deaf students are all communicating at the same time, each with his or her own laptop. And the discussion moves about this quickly. That's me on the right in blue. Opportunity to give positive reinforcement, select correct answers. In this case, Kelly KELBEL gave the right answer, so then everyone has an opportunity to see what she said. And this goes on for, I believe, somewhere in the neighborhood of 25 pages. Secondly, just so you know that it's not limited to the
This is an art history class. This is where, again, exam review. Seems to be a particularly good application of this. OK, another example, this is a mainstream class in polymer chemistry, taught in the manufacturing, processing\~\_\_ or packaging major at R.I.T.

Students need to know ten most common packaging polymers backwards and forwards. There were two deaf students and two hearing students on computer, and in this case, their answers were voiced, so the teacher could write their answers on the board. At the end of the session, interestingly enough, of the 40 students in the class, about 50% of the message on the board came from these four students. Here's an example, two of my colleagues, Todd PAGANO and David Templeton and I have several times made contact with professionals in the field, in chemistry, where our chem majors have an opportunity to
speak with someone who is well known in the field}{

\rtich\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtich\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 We contact them, give them the screen name to sign on, and we're off and running}{\rtich\fcs1 \af2\afs26 \ltrch\fcs0

\fs26\insrsid16145312 . }{\rtich\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 OK}{\rtich\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtich\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312

And, finally, this is another example of collaborative research, where students were given the topic thalidomide, and in groups of four we're asked to review, or to research the drug}{\rtich\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 .

\par }{\rtich\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 They were given several questions to ask}{\rtich\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtich\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312

They were also asked to make up three questions and answer them}{\rtich\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 .

\par}{\rtich\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312

And they were asked to answer the opinion question, should the drug be outlawed}{\rtich\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtich\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 So they had to figure out who is going to do what}{\rtich\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312

They had to share their sources, somebody had to produce a summary paper}{\rtich\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtich\fcs1 

\par}{\rtich\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312

All of this took about a half hour.

\par OK}{\rtich\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 .

\par}{\rtich\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 I've got a clip of~\_<\_< I think we'll\~\_<\_< should we show that when we're doing the other clip}{\rtich\fcs1 \af2\afs26
This is an example

I've got two windows, two discussion groups that I'm attending to.

Ordinarily we're limited, when we're walking around the room, to paying attention to one discussion at a time.

The other advantage in this is at the end of the discussion, we've got a transcript of what took place.
Now, here's an example of what it isn't all typing here. There are pauses for human interaction, as well, as we'll see in a second here. They can see each other. OK. And they'll have an exchange, talk about something that someone said, face to face, and then go back to their individual responses. Clarifying question, one student, a student in the back, is going to answer and clarify is going to answer and clarify. So those are a few examples of actual applications. JONATHAN SCHULL: You know, the promise of all of this is, of course, that with regard to scenarios like remote interactions with authorities in the field or in mixed conversations between deaf and hearing students, chat has the potential to level the playing field. The attraction for us is the possibility that as this technology becomes more and more ubiquitous, it has the potential to turn deafness from a supposed disability to the kind of disability that nearsightedness is, that is, something for which there is a common and available device that really just makes it not be an
issue}{\texttt{rtlch\fcs1 af2\afs26}}

{\texttt{ltrch\fcs0 fs26\insrsid16145312}}.

{\texttt{par}}{\texttt{rtlch\fcs1 af2\afs26 ltrch\fcs0 fs26\insrsid16145312}} Now, I became quite involved in this when I was doing my own work in my own classrooms}{\texttt{rtlch\fcs1 af2\afs26 ltrch\fcs0 fs26\insrsid16145312}}.

{\texttt{fs26\insrsid16145312}} I teach interface design, and our students do most of their work in that course, working in small groups}{\texttt{rtlch\fcs1 af2\afs26 ltrch\fcs0 fs26\insrsid16145312}}.

As it happens, we often have several or more deaf students, and many hearing students, and they adventure Owsley often allocate themself into mix groups, and{\texttt{\_\_\_\_} mixed groups, and in fact, in this case, Scott, Ching, and Jeff were all hard of hearing}{\texttt{rtlch\fcs1 af2\afs26 ltrch\fcs0 fs26\insrsid16145312}}.

{\texttt{par}}{\texttt{rtlch\fcs1 af2\afs26 ltrch\fcs0 fs26\insrsid16145312}} Brian and Brett are hearing students, and they took on the task of trying to collaborate with each other in the development of chat software that would actually be optimized for facilitating face_to_face conversations}{\texttt{rtlch\fcs1 af2\afs26 ltrch\fcs0 fs26\insrsid16145312}}.

{\texttt{par}}{\texttt{rtlch\fcs1 af2\afs26 ltrch\fcs0 fs26\insrsid16145312}} Because the irony is that while chat software is widely used and even widely used in these kinds of situations, it would seem that no one has actually thought through what would you do to chat software in order to make it be particularly good for mediating face_to_face conversations}{\texttt{rtlch\fcs1 af2\afs26 ltrch\fcs0 fs26\insrsid16145312}}?

{\texttt{par}}{\texttt{rtlch\fcs1 af2\afs26 ltrch\fcs0 fs26\insrsid16145312}} And the way we try to explore this is by identifying various kind scenarios and challenges, and, in fact, we find that in homogeneous groups, whether you're dealing with the sage on the stage situation or the guide on the side situation, it's not problematic}{\texttt{rtlch\fcs1 af2\afs26 ltrch\fcs0 fs26\insrsid16145312}}.
It's what we do all the time. In mixed groups when you have deaf students involved, well, first of all, you need an interpreter, and second of all, when you divide the students up into small groups around here and most of the time, you're lucky if you have one interpreter, and suddenly it would be nice if you had more than one interpreter.

One way of thinking about what we're trying to do is put the interpreters out of business, but, of course, interpreters will go the way of the paperless office. We will always need their invaluable services.

And there are undoubtedly some things they will do better than computers will ever do. The question is:

What are the pros and cons, the strengths and weaknesses of these various systems?

And that was really the subject of the research that we are now going to talk about.

Not too long ago we had these students and six other students, and four other students acting as observers, come into our laboratory, the same room that you saw in the video clip a few minutes ago, and we asked them to give us help cataloging situations...
in which deaf and hearing students interact, to gen
erate anecdotes, working in groups of four, two hearing and two deaf,
and to try to enumerate the challenges and issues that arise in that situa
tion}{\rtch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 So it was not an arbitrary task}{\rtch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 It was, in fact, one that was quite meaningful given the situation, and, i
n fact, we're very interested in what they had to say}{\rtch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }

{\par }{\rtch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 But, we also had them engage in that discussion under several different situations}{\rtch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 They were in two groups, and during the first time block, the first group had a conversation mediated by an interpreter, where the other group used I\_chat}{\rtch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 We then had them fill out an assessment questionnaire, the results of which we'll be showing you, and then the conditions reversed}{\rtch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 The people who had been conversing with the interpreter switched over to I\_chat and vice versa}{\rtch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 And then at the end we had them use a prototype that we're developing of our own chat system called MultiChat, which is meant to address some of the issues that we will show you}{\rtch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 The results were actually pretty clear}{\rtch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }
We got the same basic pattern from looking at the assessment evaluations as well as working with a focus group that we had with these same people, and in fact, during the discussion period you have, you may want to ask some questions yourself.

The results were that every system works sort of pretty well. But there are big differences.

The interpreter in a small group, especially a good interpreter, and we had an excellent interpreter, will tend to regulate the discussion, so that one person is talking at a time, and so that everyone is in a position to track what's going on.

There were, therefore, fewer separate interactions in the interpreted discussion.

On the other hand, it was substantially more orderly, and, of course, students did end up noting that one of the interesting things about having a conversation involving an interpreter is that you're dependent upon the interpreter. On the other hand, they reported that chat was a more informal kind of an interaction, that people were able to type in parallel at the same time, which is something that's actually common in face-to-face interactions among both hearing and deaf groups.
It gives you a written record, but it can get confusing, and you lose the opportunity for face-to-face interaction.

Now, those data are perhaps visible here.

The main effect on this page is that if you look at the number of discrete utterances, they are.

There are far more of them in the circled conditions, which was the chat condition.

People were able and did, in fact, interject whatever they wanted whenever they wanted.

Whereas the other ends of every other of those lines represents the interpreted condition.

And you can see that there were far fewer utterances.

On the other hand, there were not a big difference in the number of words spoken or typed.

And, in fact, people seemed to report that they were that the two systems were comparable.
Some people thought the chat was easier to participate in. You can see that this person here, wi
th the line diving down, really found that chat was just too hard to keep up with, and so she dropped out at some point, and, in fact, that person, not surprisingly, was one of the few who said it was harder to participate in chat.

On the other hand, other people thought it was easier to participate using chat. Our observations, their observations, our prior work, have identified a number of key issues, which we think need to be taken into account if you try to develop a chat system that will be really, really good for face_to_face interaction in this kind of a situation.

There is, of course, the issue of what technology is available. There are questions having to do with the tempo and the mode of communication. There are issues having to do with what it looks
like on the screen, and can you figure out where you are in the conversation}{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0

\fs26\insrsid16145312 And there are issues of document sharing and collaboration}{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 There's actually a fairly well\_established
d literature in the interpreting literature about how things get even more complicated when mixed groups of deaf and hearing participants are looking at documents while trying to attend to the interpreter, while trying to attend to each other}{\nl

y look in one place at a time, and, in fact, unless the moderator of the discussion gives the deaf participants time and context to allow them to identify the documents in question, things can really fall apart}{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0

\fs26\insrsid16145312 .

\par ){\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 Chat systems to date do nothing to aid that situation, and they just create another visual target between which visual attention has to be distributed}{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0

\fs26\insrsid16145312 . }{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 The basic problems might be broken down this way}{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312

On the one hand, this is the typical situation for homogeneous groups, people sit in a circle}{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 The

y can see each other, and they can interact with each other while moderating and modulating each other, using face\_to\_face and gestural interaction}{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0
This doesn't actually work all that well when you have mixed groups. If people use chat in our classroom situation today, they are no longer face to face. It's not a particularly good setup, even though it's a frequently used technique. With the interpreter in small groups, typically everyone is oriented so that they can look at the interpreter, but, in fact, the deaf students are looking at the interpreter, and that's the only information they have about the person who is speaking. Speaking people can look at the interpreter, can hear voices in parallel and so on. So there are problems there. And, in fact, I think we have a clip which gives an example of that coming up right here. So you can see here by the way that people are typing in parallel. They are also interacting, they are looking at each other.
time}\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0
\fs26\insrsid16145312 . }\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0
\fs26\insrsid16145312

There's a lot of information being exchanged, but when they're actually working at it, which I think is coming on now, they're looking at the screens, and, in fact, what I'm hoping for is a moment coming up when the woman in the red says, "}\{\rtlch\fcs1
\af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 I have something to tell you, ,'94}\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 and the woman in the gray just never got it}\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 She's waving, and it turns out she goes back to this funny technique of interacting by way of the computer}\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 .

\par }\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 And, in fact, they're obviously having a good time}\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 There's all sorts of things that are better conveyed through bodily interaction, and there's no particular reason why chat software has to prevent face\_to\_face interaction}\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }\{\rtlch\fcs1 \af2\afs26
\ltrch\fcs0 \fs26\insrsid16145312 So that's one of our challenges}\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312

\par >> AUDIENCE MEMBER: I just wanted to add, in a classroom situation, we're constantly breaking away from the discussion, for me to clarify, define terms, do something that would take way too long in print, and when I can just explain it, get it out, and we're finished}\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0
\fs26\insrsid16145312 . }\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0
\fs26\insrsid16145312 Students invented the code when I need eyes on me, I type 911, and everybody just stops typing and looks my
way}{{{rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312

. }{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 So there are ways, there are ways around that.

\par \par JONATHAN SCHULL: All right}{{{rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 So here we are going to scoot through a number of ways of changing spatial attention}{{{rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 Here I just want to alert you to the fact that there are two styles of chat available today}{{{rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 One is what we call type and then send}{{{rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 It's probably what you're familiar with}{{{rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 .

\par }{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 You type, type, type, type, type, type, when you're done typing, you hit enter, and then people hear what you are}{{{rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 ~\_\_ can read what you are typing}{{{rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 .

\par }{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 A strange way to have a conversation}{{{rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 .

\par }{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 The alternative would have the text be transmitted as you type}{{{rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 .

There are a number of ways in which you might try to capture the fact that parallel conversations do occur}{{{rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 .

\par }{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 And there are ways in which you might try to deal with the problem that text will fly
off through the screen when you have one person who is doing a lot of typing in a large\~\_\_ in a group of people chatting}\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312

\par \}\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 The students who I talked about imagined that you would have everyone's text aggregating in an individual window, and a transcript here}\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 And, in fact, what we have now done, and because time is tight, I think I'm going to invite you to ask for an actual demonstration afterwards}\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 We have been able to take a basic web browser, we're using Firefox, and it turns out it's possible to set it up so that you have any number of these arbitrary little notes on the page}\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 You can click here to create a new note}\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . \par \]\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 You can double click on a note in order to edit it, and you can }\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 Type\~\}\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 , and what you type is seen by everyone else looking at that U.R.L., that location on the web}\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 So in principle, you have a situation where people can see what each other are typing as they type}\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 It's a web browser, so you could in principle put in streaming video content or share a document that people can edit and look at
together}\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 .
}\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0
\fs26\insrsid16145312 And it's a flexible enough environment that we think we'll be able to work on some of these transcribing systems}\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 .
\par \{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 In fact, what we\textbackslash~\textbackslash\_\_\_ this was the software that we used i
n our third condition, when students were working together actually composing their lists, and in that situation, at least, this system seemed to have real advantages over the conventional web systems}\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0
\fs26\insrsid16145312 . }\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 What's lacking in the system today is a transcribing system so you can keep track of the ordering of the conversation}\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 But within this web\textunderscore based environment, we expect to be able to give people the ability to modify their transcribing situations}\{\rtlch\fcs1 \af2\afs26
\ltrch\fcs0 \fs26\insrsid16145312 .
\par \{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 So our goal, and we're making progress towards it, is a common denominator, browser\textbackslash\_

based system, requiring no specialized software, that will transmit text as people type, give them a flexible layout, allow them to edit documents and to put together any materials, streaming or static, that they wa
nt for the conversation in such a way that they'll be able to look at each other and interact using text, using sign, using gesture, using whatever seems comfortable, without imposing unnecessary, arbitrary constraints}\{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0
\fs26\insrsid16145312 .
\par \{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 So
that's our overview}{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312

\par Good}{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 We have a couple of minutes for questions}{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtlch\fcs1

\af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 Please take a moment and fill out your processing form and give us some feedback}{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312

We'd be interested in hearing from those of you that have used I.M. in the classroom as well}{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 And we have INEZ and HUA here also can

give you their impressions of the different chat methods, if you care to ask.

\par Just a reminder, if you have questions, and I hope you do, please remember to come to the microphone if you're hearing so that everyone can hear you, including the captioner}{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtlch\fcs1

\af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 And fill out your yellow evaluation forms.

\par OK}{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 Those of you who have no questions, we'll take you first}{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }

\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 [Laughter]

\par I have a question}{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }

\par Yes, Susan}{\rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }
So can we see this thing?

JONATHAN SCHULL: All right, that's where I'm going, since we seem to have a few extra minutes.

Well, that's where we should be able to go, but this machine doesn't seem to have a live connection.

LARRY QUINSLAND: While they are getting that ready, let me mention that these guys, along with six of their student colleagues put in a pretty intense 2\textsuperscript{1}/2 hours of trials and feedback, and provided us with a tremendous amount of information.

This whole project grew out of a\textsuperscript{\textdagger} it was really a forced shotgun marriage, I say, between two different groups applying for provost innovation learning grant funds to study I.M. in a little bit different ways.

And it's worked out really well.

JONATHAN SCHULL: All right.

So mike, who actually did most of the development of this actual system, is going to go to this page.

When he gets there, he will find a note like this, and will probably find text coming in.

And he, as you can see, has created a note.
He can change the color.

And using this, you can do all sorts of things, including HTML tricks, for example, which would allow me to actually, let's see, yes.

And so what mike sees now on his screen is what you see here, which is that you can actually include other webpages in there, and so what he types or what he wants to show me is seen by everyone looking at that page in parallel at the same time.

That's right.

OK.

Thank you very much.

LARRY QUINSLAND: And generally we've got four of these windows open at the same time, with four students communicating with each other simultaneously.

I think that are we
There's time for a few more questions. Have you ever used it in the classroom for collaborative discussions? Have you ever used it that way?

JONATHAN SCHULL: The answer is yes.

One of the interesting scenarios that became possible when we did this, if the document in question is a webpage, you can, in fact, have five or ten people all developing different pieces of the webpage in parallel together, each working in their own little panel.
We've also used it for things like phone conferences, where people will maintain notes in one window and a to-do list in another window, and other references in other places. We've used it in classroom situations where it's sage on the stage, but the entire stage, everyone in the class has their own window, so I can ask the question. And instead of that one person waving their hand getting to answer, everyone answers in parallel, and everyone sees their answers.

So it turns out to be a quite a potentially plastic, collaborative environment. And they did this four people to a group.

You know, we didn't mention the technical, some of the technical, considerations as well. Why Macs? In thinking about the exportability of whatever we come up with, the nice thing about Macs is they easily communicate with each other. Whether or not you can get on Internet, whether or not we go through A.I.M., but you don't have
to}\{{\texttt{rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }}\}\
{\texttt{rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 These can talk to each other side by side in the same room}}\{{\texttt{rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }}\}\{{\texttt{rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312}}

So when you think about the student out at a community college or in a high school, having an opportunity to sit down and talk with hearing students, on an even par, it makes it relatively inexpensive and easy to do.

\par >> JONATHAN SCHULL: Having said that, while, for example, the chat software and a number of other things on the Mac are much easier to organize that way, this application is meant to work cross\_platform.\{{\texttt{rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }}\}\{{\texttt{rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 The browser is becoming the common denominator, and so this was the one way in which we realized we could have something where anyone with access to a computer and an Internet connection could be assured that they had the same tools as anyone else with access to the same thing}}\{{\texttt{rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }}\}\{{\texttt{rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312}}

So it's a cross\_platform solution, although getting the platform to work is indeed, easier on the Mac.

\par [Laughter]

\par >> I think we're out of time.\{{\texttt{rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }}\}\{{\texttt{rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 We have to give the captioner a rest as well as everybody else}}\{{\texttt{rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }}\}\{{\texttt{rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 So thank you very, very much for a stimulating presentation.}}\{{\texttt{rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }}\}\{{\texttt{rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }}\}\{{\texttt{rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 >> Please return your evaluations}}\{{\texttt{rtlch\fcs1 \af2\afs26 \ltrch\fcs0 \fs26\insrsid16145312 . }}\}
(Applause)