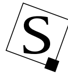
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IRC Français: The Creation of an Internet-Based SLA Community

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ABSTRACT

Research into text-based chat environments for foreign language learning has shown that discussions online have a significantly different character from those in the classroom. In this paper, we begin with a brief design history of one of these environments: IRC Français. Our experience both illustrates the challenges involved in moving these chat environments from the language lab to the Internet and offers insight into some of the causes of these changes in conversation. The initial challenges we encountered ranged from ethical difficulties in doing research in Internet-based chat environments to bootstrapping a synchronous community. After exploring these challenges, we present a study taking a closer look at the interactions online and in the classroom over the course of a semester. During this semester, classroom interaction was largely teacher-oriented, despite the best efforts of the teachers involved. Even though teachers initiated online conversations in the same way, however, online interaction was student-driven and significantly more interactive. These observations lend credibility to the language ego permeability theory and its emphasis on inhibition. Quantitative findings of this study mirror a number of other studies. Qualitative findings suggest that important features of the medium lead students to feel more comfortable in the online environment. In particular, the ‘‘almost real-time’’ nature of this medium seems to offer a blend of benefits that arise in both face-to-face conversation and asynchronous interaction. In doing so, however, some new challenges are introduced. We conclude with some suggestions for new research directions into both these challenges and more general issues in second language acquisition in online environments.

1. INTRODUCTION

Most foreign language teachers know the feeling of walking into a classroom prepared for a lively discussion and finding a room full of mute students. While there are certainly some things that can make this situation better, even

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the best teachers with the best pedagogical approaches often struggle with this challenge. Why do students – many of whom seem to honestly want to learn the language – hesitate to participate in classroom discussions? Our work with designing a project called IRC Français leads us to believe that inhibition may play a key role in this challenge. While some students certainly must contend with personal (Turkle, 1984) and social issues (Kohl, 1994), a deeper understanding of the causes and implications of inhibition might help to further refine foreign language education processes.

In this paper, we present the evolution of IRC Français as well as the successes and mistakes made along the way. We begin with a discussion of our pedagogical and design foundations. The early history of this software design was marked by significant revisions of both the software and our approach to the classroom. During these revisions, we learned some interesting lessons about appropriately supporting the desired type of discourse. Once we had IRC Français working successfully in a classroom, we were able to collect some interesting data about the participation patterns in the online and offline environments. We present some evidence from this study on how the design seems to influence the observed patterns and to reduce inhibition in foreign language discourse. In recent semesters, we have turned the environment over to different foreign language learning researchers to conduct more detailed studies of the learning in this technological environment.[1]

2. INHIBITION AND LANGUAGE LEARNING

Before designing a system to support language learning, we must first ask why learning a foreign language is a challenge. Most people can agree that learning a foreign language as an adult is difficult, particularly when compared with child language learning. Fewer, however, agree on the reasons, although the critical period hypothesis has received notable attention. In its simplest form, this hypothesis argues that something changes in the brain at some point that causes adults to approach foreign languages differently than native languages (Scovel, 2000). While the exact age and nature of this change are still debated, the core of the argument rests on the belief that there is something fundamentally different between the ways adults and young (enough) children approach language learning.

[1]See Blackbourn-Jansma (Submitted) for an example of this research.

The language ego permeability hypothesis, however, presents a different – though compatible – picture of this learning difficulty. Unlike the critical period hypothesis, the language ego permeability theory argues that changes largely result from socialization rather than maturation. This hypothesis starts from the understanding that humans present different aspects of themselves depending on how the individual wishes others to perceive the interaction (Goffman, 1963, 1967; Ornstein & Ehrlich, 1989). By adulthood, many individuals are quite adept at presenting the 'appropriate' image of themselves in any situation. While one only needs to look at politics to see the experts at work, all people engage in this type of behavior consciously or unconsciously in every interaction. Learning a foreign language as an adult requires that the individual give up the control over the self-presentation that language provides. Since individuals do not have the same control over a foreign language as over their native languages, they become inhibited about using the new language (Guiora, 1972). They fear making mistakes even though they are an important part of the learning process (Kolodner, 1997). Therefore, adults do not receive the practice necessary to reach linguistic fluency. Unlike the critical period hypothesis, this view allows for the variation that is seen in ultimate levels of adult achievement. If it were true that foreign language fluency is impossible for adults to obtain, we would not have the masterful works of English literature written by Joseph Conrad or Vladimir Nabokov.

While the critical period hypothesis is likely to have some considerable degree of validity, the language ego permeability theory explains the same phenomena and also contains a number of implications for improving the foreign language education experience. Most importantly, it suggests that inhibition plays a powerful role in constraining achievement. To study the role of inhibition in the foreign language learning process, Guiora and colleagues developed the Standard Thai Procedure[2] (STP), a method designed to elicit oral production measures from students learning to speak words in a distant foreign language in which they have had no previous exposure. Essentially, students listen to a tape that asks them to repeat words in Thai – a language with little similarity to English. Students are also screened to ensure no previous exposure to the Thai language. Finally, researchers code the samples for similarity to native speaker pronunciation.

Using this procedure, researchers have explored the role of inhibition in the learning process by comparing results from students acting normally and students under the influence of inhibition-lowering drugs. In each of these

[2] For a complete description of this procedure, see Guiora et al. (1972).

studies, all students participated in the STP procedure. Only the experimental group received the drug while the control group received a placebo. In the experiments using alcohol (Guiora et al., 1972), they found clear evidence that moderate amounts of alcohol insignificantly lowered mental reasoning while significantly improving oral production skills. Studies with Valium (Guiora et al., 1980) and hypnosis (Schumann et al., 1978) found similar, though not as strong, results. While this is interesting evidence, it suffers from two weaknesses. First, oral production in an unfamiliar, distance language does not generalize well to other language learning skills. Second, these types of techniques for lowering inhibition offer little in terms of practical classroom teaching methods. While a number of techniques for dealing with inhibition have arisen, few have been adopted. Inhibition still offers a challenge to the language learning process.

In a separate body of literature, however, the Internet has been credited with having the ability to lower inhibitions among those online (e.g., Joinson, 1998; Spears et al., 2001). If the Internet lowers inhibitions, and inhibition difficulties are particularly salient challenges in the domain of language learning, it makes sense that students in an online environment might overcome these difficulties. In fact, this has been demonstrated by a number of researchers examining chat environments for foreign language learning (Beauvois, 1992b, 1997; Bruce et al., 1993; Kelm, 1992; Kern, 1995). Further, language ego permeability theory implies that the greater linguistic output demonstrated by the students in the online environment has effects beyond those credited to greater time on task. The fact that the output exhibits greater disinhibition contributes to language learning. By partially overcoming this barrier to language learning, online environments likely provide not only increased, but also more productive language practice. Language production in an environment marked by lower inhibition likely contributes toward deeper learning rather than only toward greater time on task. While some research is beginning to examine this claim (Payne & Whitney, 2002), further research into learning outcomes in online chat environments is needed (Ortega, 1997).

3. IRC FRANÇAIS

IRC Français[3] grew out of a desire to create a real-time, conversational environment over the Internet. In order to create the type of learning environment that

[3] http://www.cc.gatech.edu/elc/irc-francais/

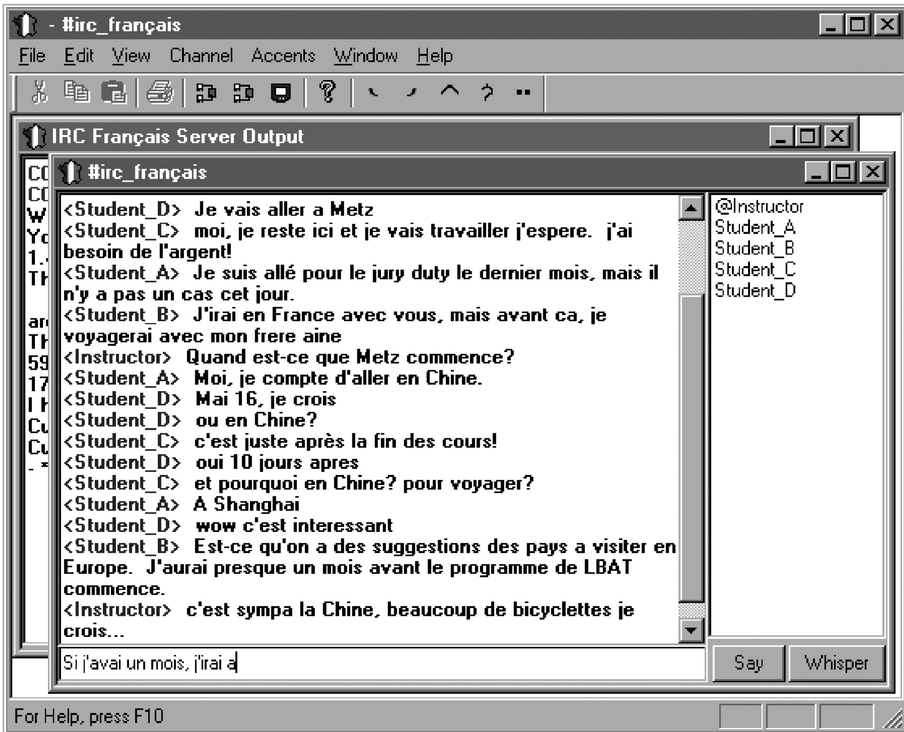

Fig. 1. The interface to IRC Français shows some of the learner-oriented features such as a tool bar to generate accented characters.

we envisioned, we felt the need to create our own IRC[4] client software. While numerous chat clients are available, our goal of designing a publicly available, Internet-based community meant that we needed to create our own software. All available software either worked only over a local area network and thus was unavailable over the Internet or was not designed with the unique needs of language learners in mind (Soloway et al., 1994). Designing our own software, IRC Français, allowed us to control the amount of technical information that bombards typical users of IRC. Thus, we were able to hide those details from

[4]Internet Relay Chat (IRC) is an early real-time, text-based chat system on the Internet. While not a part of the World Wide Web, IRC still has thousands of users from all over the world conversing at all hours of the day. See Rheingold (1993) for further description of this communications medium. Designing only client software allowed us to take advantage of the IRC infrastructure and protocols already in place.

the students while letting them focus on the key aspects of conversation (Bruckman, 1997). Additionally, the software allowed us to add language specific features such as the generation of accents and other special characters. Figure 1 shows a screen shot from a typical conversation using IRC Français.

Before delving into the evolution of this environment, it is important to consider one unique property of IRC environments. First, conversations on IRC are neither talking nor writing. Unlike face-to-face environments, interaction occurs solely in text. Unlike written communication such as e-mail exchange programs, however, interaction occurs synchronously. That is, conversations on IRC can only occur between partners who are online at the same time. IRC interactions, in general, tend to occur with the pace of a face-to-face conversation, but in text form. As such, the linguistic properties exhibited in this environment seem to fall in between these other two types of communication (Collot & Belmore, 1996); properties of both written and oral communication are mixed in the online environment. Therefore, in this paper, we interchangeably use terminology referring to both written and oral communication. We are, however, referring to this new communication form that has no appropriate and accepted descriptive terms. In the conclusion, we briefly explore the relationship between various communication media.

4. PILOT STUDIES

Since the beginning of this project, we have used IRC Français in various ways for seven semesters. (See Table 1.) The first three semesters focused primarily on iterative design of our software and pedagogy. The other four semesters represented only minor design changes on our part while other language acquisition researchers began more detailed experimentation regarding SLA questions. In this section, we present the formative evaluation from the first two semesters. These semesters involved only a small number of students, but the lessons learned substantially influenced the design of IRC Français.

4.1. First Formative Evaluation Study

Initially, we entertained the idea of having students conduct conversations with native speakers who were already online conversing in French. In this way, we believed that students could gain the benefits of conversations with native speakers while also enjoying lowered inhibition online. Our initial study – conducted during late fall, 1998 – aimed to understand the effective-

Table 1. Over Seven Semesters, We Have Engaged in a Process of Iterative Design With IRC Français.

Semester	Number of classes	Number of students	Brief description
Fall 1998	1	9	Participation was strictly voluntary. Interaction involved native speakers. Early sofware prototype.
Spring 1999	1	1	Participation was strictly voluntary. Interaction involved native speakers. Second software prototype.
Fall 1999			Complete software rewrite.
Spring 2000	6	49	Participation integrated into the classroom. Interaction involves only other students and the host. Researcher observation of classroom activities. Final major software revision.
Fall 2000	4	45	Periodic researcher observation of classroom activities. Minor software revisions.
Spring 2001	5	72	Minor software revisions.
Fall 2001	3	76	Limited researcher involvement. No software revision.

ness of these conversations. At this point, IRC Français was structured so that students conversed outside of class time with native French speakers who were already online using IRC. For a number of reasons, we had difficulties finding many participants. Of the 17 students who returned permission forms, only 9 students attempted to participate in conversations using IRC Français.

The nature of these conversations, however, was telling. While we thought that the authenticity of conversations with native French speakers would prove motivating and highly educational, some practical difficulties outweighed the benefits. For a variety of reasons, many students encountered verbal hostility and native speakers unwilling to engage in conversations with language students. Additionally, the conversations that did occur on the French IRC channels[5] simply proved to be uninteresting educationally. Conversations

[5]On IRC, chatrooms are referred to as ‘channels’.

tended toward simple discussions with atrocious spelling, frequent sexual innuendo, and relating to banal subjects. Therefore, we began moving away from conversations with native speakers in favor of conversations with other language students.

By moving away from conversations with native speakers, however, we do not completely sacrifice authenticity. Shaffer and Resnick (1999) argue that authenticity can be viewed along four dimensions:

- Personally-meaningful learning;
- 'Real world' activities;
- Discipline-oriented behavior; and
- Non-artificial assessment.

Personally-meaningful learning involves educational situations that correspond to the desires and goals of the individual learner. Real world activities are those activities that a learner can clearly tie back to other aspects of his or her life. For example, rather than working on a worksheet of math problems, real world authenticity would have students working on activities such as counting money and making change. Discipline-oriented behavior emphasizes that learning is not a process of gathering facts in a student's head. Rather, it presupposes that learning is a matter of becoming a member of some sort of community such as French language speakers (Lave & Wenger, 1991). This type of authenticity emphasizes that activities should correspond with the actual activities of members of the target community. Finally, non-artificial assessment emphasizes that the student assessment should be related to the activities and skills learned. Rather than testing what is easy to test, non-artificial assessment requires that new assessment techniques be developed.

Conversations with native speakers provide authenticity along this third dimension: learning to interact with actual members of the community. Moving away from these native-speaker interactions in favor of conversations with other students, however, does not sacrifice all authenticity. In losing this third dimension, we gain authenticity in the first – personally-meaningful learning. Students learn because all involved share the same goals – learning French. By giving up the authenticity of native speaker interactions, we do not lose authenticity in IRC Français. In fact, in the following semesters, we have seen that the quality of language in the student-student conversations surpasses that typically seen in online discussions between native speakers.

When native speakers converse online, they are typically trying to enjoy themselves and relax. Students, however, joined the conversation in order to

learn the language. These conflicting goals meant that the native speakers often resented the students for turning their play into work. Meanwhile, the students resented the native speakers for their hostility and unwillingness to help. Through establishing an environment where all participants shared educational goals, we have been able to encourage discussions in which these goals may be achieved. Additionally, students gain motivation and support through these shared educational goals.

4.2. Second Formative Evaluation Study

In order to facilitate student interactions with other students rather than with native speakers already online, we introduced a channel specifically for IRC Français users in our next iteration. We intended to provide a virtual location for students to converse with other students. Unfortunately, this is difficult to achieve with an extremely small community. During winter, 1999, only one student actively attempted to participate in the community. Not surprisingly, this student quickly became frustrated. This helped us realize the importance of involving the classroom more integrally in the creation of the community, however. Additionally, we realized the importance of having scheduled times when students could be certain of finding others online.

4.3. Ethical Challenges

In our first version of IRC Français, an ethical dilemma immediately emerged. Our plan was for students to converse with native French speakers already on IRC. Clearly, the rules governing human subjects research dictate that we need freely given informed consent from our students before we can ethically use them as experimental subjects (‘The Nuremberg Code,’ 1949). But what about their conversational partners? Were they research subjects or not? We were not studying them in particular, but were recording their conversations with our students and analyzing their words. Did we need their consent?

The status of real-time chatrooms is ambiguous. On the one hand, one can argue that they are like a public square. It is considered ethical to record activities in a public place without consent, provided that individuals are not identifiable (Eysenbach & Till, 2001). In this view, we would be justified to simply record conversations and not tell anyone that this was taking place. On the other hand, one can argue that chatroom conversations are normally ephemeral. Participants have a reasonable expectation that they are not being recorded without their freely given informed consent. Under this stricter interpretation, we would need consent from any person whom we wish to

record. Additionally, if the process of requesting that consent proved too intrusive, we would need to abandon the research (Department of Health, Education and Welfare, 1979).

With the approval of the Institutional Review Board (IRB) for human subjects research, we settled on a compromise approach: we would get written consent from our students, but merely notify other people on the channel of our study. These individuals would also be given the option to opt out if they so chose. Because we wrote our own client software, we could automatically send a public message to this effect when one of our students joined the channel, and then privately inform others who join the channel subsequently.

To our surprise, this compromise failed. IRC participants were angered at the idea of being studied without their prior consent. Our students were greeted with hostility. They were routinely harassed by IRC channel members, and often had threats and obscenities directed at them. This seems to indicate that an opt in solution might be more acceptable than an opt out. However, there was a further problem: our messages notifying channel participants of the study and offering the opportunity to opt out were found in themselves to be unacceptably intrusive. Even though each person saw the message only once, it was still deemed unacceptable by many members. An opt in message would have that same problem.

Based on the reaction our study generated, we concluded that the "public square" model is untenable and, in fact, the second interpretation holds: you may not ethically record an otherwise ephemeral medium without consent from participants. How then could we continue our research? We came upon a solution: create our own IRC channel explicitly for this project. We could direct our students to that channel, and others would not normally join. Since it was our channel, we could create a channel logon message informing people about the study and its purpose. We could also limit access to the channel to our students only; however, to date we have not found this necessary. Few people come to the channel outside of students assigned to use it, and those few are warned by the channel logon message. Now, we do not intrude on a pre-existing space, but instead have our own.

In addition to solving our ethical dilemma, the new channel also provided pedagogical benefits. While people come to general IRC channels for a variety of social purposes, everyone on the IRC Français channel is there for the purpose of practicing French. This shared goal greatly improved the educational value of the conversation for all concerned.

5. LARGE-SCALE PILOT STUDY

During the third semester, we involved four second-year college French classes from two different universities in using our new version of IRC Français. We have a number of scheduled chat sessions each week with an advanced/native speaker acting as host. At this point, all hosts have been drawn from the community of teachers using IRC Français with their classes. As part of the class, each student had to converse online for 1 hr each week at one of our scheduled chat sessions. While each teacher hosted one session each week, however, students were not required to attend that session. Students were welcome to attend any of the scheduled chats. At these scheduled sessions, we give responsibility for determining how to control the flow of conversation to the hosts. Just like a host at a party, the style of hosting a conversation should reflect the individual's personality. Therefore, we inform the hosts from the beginning that they should maintain the conversation in whatever manner seems most appropriate. We encourage the individuality of our hosts and support them as the foundation of community building. As such, topics are sometimes drawn from classroom discussions, such as 'raconter un rêve.'[6] Other times, the topics are drawn from events in everyday life, such as 'l'amour: le bon, le mauvais, et le laid'[7] around Valentine's Day.

Over the course of the semester, we randomly videotaped some of the classroom conversations from two of the instructors – one at each university. Afterwards, we intentionally chose representative classroom sessions for transcription and further analysis. At the end of the semester, we chose 5 students and 3 teachers for in-depth interviews. In this paper, we present data about interactions involving these 2 teachers as a way of comparing the online and offline discussions.

5.1. Conversational Dynamics

One student described her classroom interactions:

> [The teacher] talks most of the time, actually. Literally, I maybe get in two to three sentences in class of me actually speaking. [. . .] It's a bit awkward sometimes because she'll pose these questions. It's supposed to be a free

[6] Recount a dream.
[7] Love: the good, the bad, and the ugly.

> forum for anyone to answer and try to get a discussion started. Maybe we're just not comfortable enough with each other yet to actually do that. So, everyone just kind of sits there and she'll go around the circle prompting you to respond to the question. Everyone takes their seven seconds in the limelight and says something. And that's it.

The classroom – even with good teachers – often follows a pattern that plays out in many educational settings. The teacher enters the room with a question prepared. Hopefully, this question will generate discussion that the teacher can use to explore the learning goals of the day. When the teacher asks this question, however, all eye contact ceases. Students stare at the floor, at their books, at anything to keep from being called on. Faced with this complete silence, the teacher must eventually pick a student and call on him or her. That student, then, has a mini-conversation with the teacher. Satisfied with that answer, the teacher moves on to another 'victim' as the first one breathes a sigh of relief. This pattern has often been referred to as the Initiate-Respond-Evaluate (IRE) cycle (Newman et al., 1989). The teacher initiates the discussion. The student responds to the teacher. The teacher evaluates the response.

Online, however, this cycle breaks down. The teacher still initiates the discussion, but multiple students respond. Rather than waiting for a teacher to evaluate them, however, students continue responding to one another. In the dialog that forms, the teacher becomes just another participant. The teacher still has a voice, but s/he no longer mediates the conversation between the students. Students actively respond to one another and take the discussion in directions that they find interesting (see Figs. 2–7).

This form of appropriation was particularly salient in one conversation during this study. In the interviews with students, many commented that the worst conversation they had online was the one about Parisian architecture. When we went back and examined this conversation, however, nearly every student commented at the end that it was one of the best conversations they had ever had. Clearly, the same individuals describing the same event do not often use both 'best' and 'worst.' Examining the conversation more closely revealed the source of the contradiction. At the beginning of the conversation, the teacher introduced the topic of Parisian architecture. After some discussion, the students explicitly (though politely) told the teacher that they were bored with the topic. It was too textbook. Accepting this, the teacher asked for suggestions of a different topic. One student from Haiti offered to share his

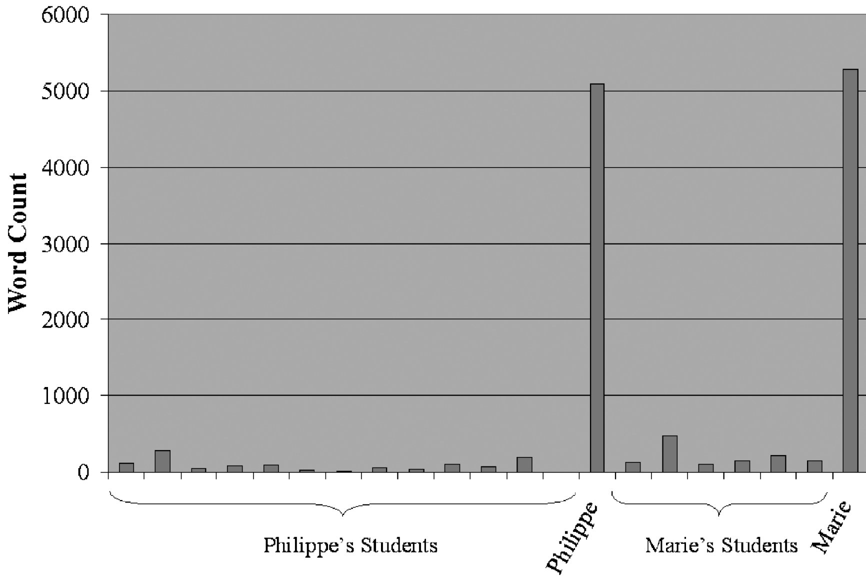

Fig. 2. In the traditional classroom, teachers (Marie and Philippe) speak significantly more than any student.

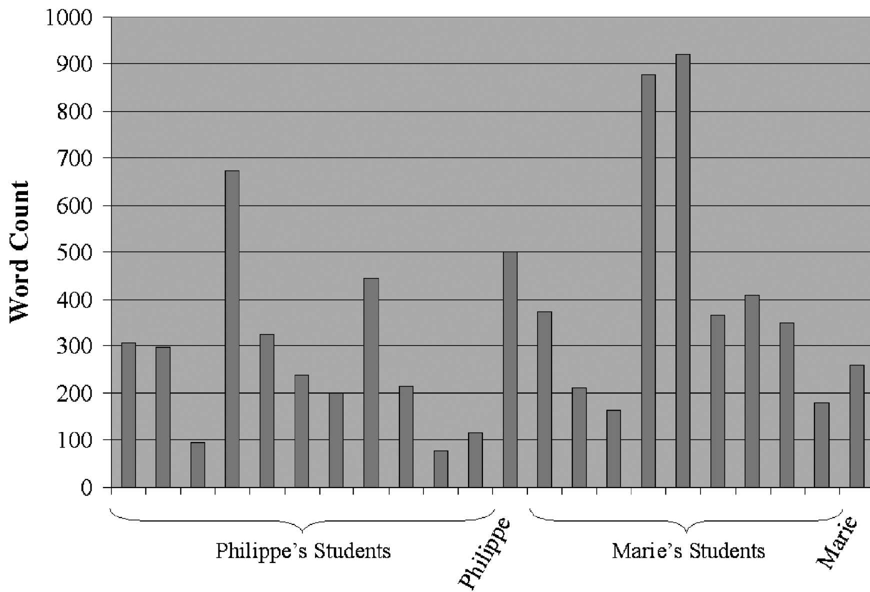

Fig. 3. In the online environment, participation is much more egalitarian.

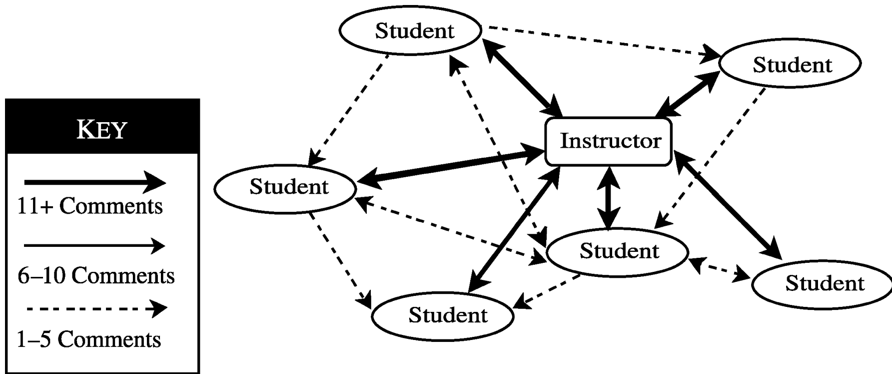

Fig. 4. In Marie's traditional classroom, a social network analysis illustrates that she is the pivotal figure.

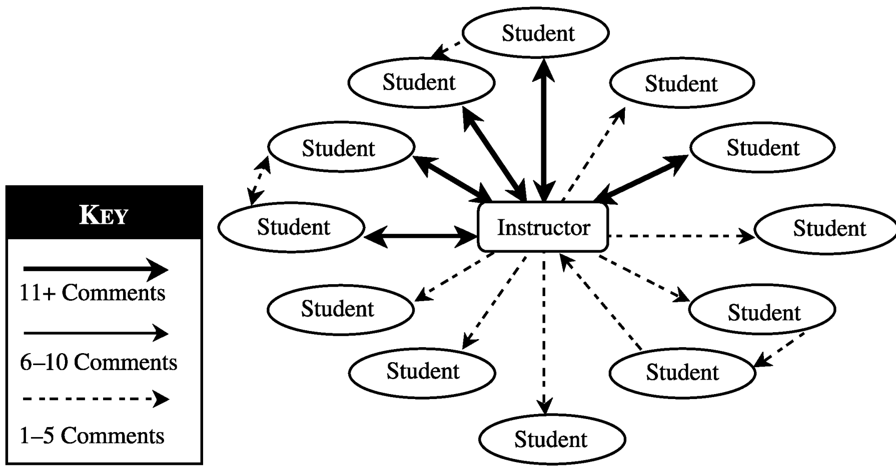

Fig. 5. In Philippe's traditional classroom, a social network analysis shows that he is also the pivotal figure.

knowledge and experiences with Haitian voodoo monuments. The students spent the rest of the conversation exploring this individual's culture. Because students felt comfortable telling the teacher that they did not find a topic engaging, what started as the worst conversation ended up becoming the best conversation they remembered.

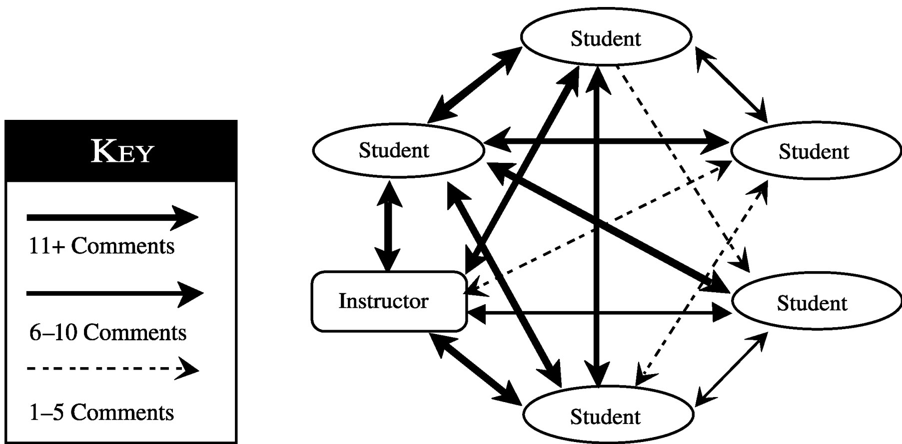

Fig. 6. In Marie's online discussions, a much more democratic relationship between all participants emerges.

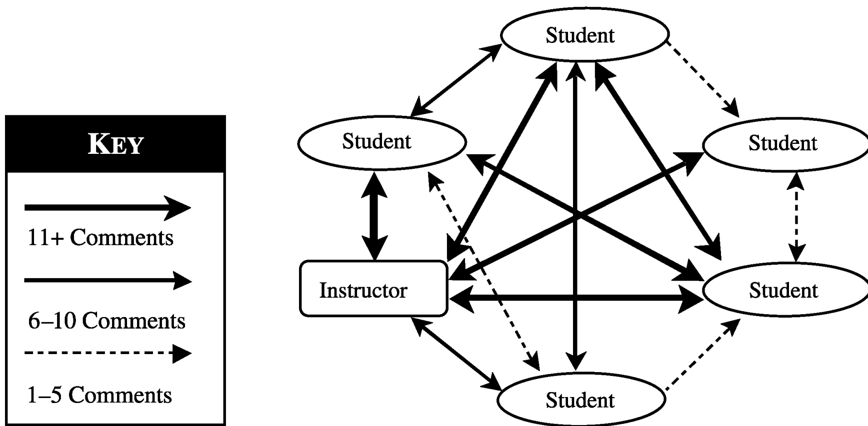

Fig. 7. On IRC Français, the social network graph of Philippe's class becomes much more complete.

When conversations move online, participation patterns change significantly. In the next sections, we present details from the 2 teachers we observed. Since these 2 teachers at different institutions exhibit changes similar to those documented in other studies (e.g., Beauvois, 1994/1995; Kern, 1995), we believe that these changes are a result of the online environment.

Table 2. In the Typical Classroom Conversation, the Teacher Must Call on Sudents in Order to Involve Them in the Discussion.

Speaker	Utterance
Marie:	And then imagine, that will be very strange. Society in one hundred years will be very curious, yes? One can imagine. So, "My professional occupation when I'm forty years old will be ..." What will you do? Omar, what will you do? *(Et puis imaginez, ça va être très curieux. La societé dans cent ans sera très curieux, oui? On peut imaginer. Alors. "Mon occupation professionelle à quarante ans sera ..." Qu'est-ce que vous ferez? Omar, qu'est-ce que tu feras?)*
Omar:	Ummm ... I don't know what occupation, but I hope that I will be happy with my occupation! *(Ummm.. .Je ne sais pas l'occupation mais j'espère que je vais être content avec ma profession!)*
Marie:	Oh, but that's good! Ok. Good idea, ok. And you, Susan? *(Ah, mais c'est bien! D'accord. Bonne idée, d'accord. Et toi, Susan?)*
Susan:	I don't have any ideas right now, but I think that I will be in the FBI, and ... *(Je n'ai pas des idées maintenant mais je pense que je vais être dans le FBI, et ...)*
Marie:	FBI? You want to be? *(FBI? Tu veux être?)*

5.2. Marie[8]

Marie, a native French speaker, is an excellent teacher and has the support of a large language department at a major university. The size of the department enables her to have a small class size – only 6 students in our study. She always has a cheerful attitude and specifically chooses open-ended topics to spur discussion. Based on the research relating to disinhibition in the foreign language classroom, Marie's class should be an ideal learning situation. Unfortunately, the students still do not feel comfortable talking in the classroom. When Marie asks a question to begin the discussion, she usually receives no response. Eventually, she must call on a specific student. In order to keep the conversation going, she finds herself forced to reply to each student comment. As a result, she is almost always the pivotal figure; the discussions are reduced to a series of one-on-one conversations involving Marie. Table 2 presents an excerpt of a typical discussion.

Not only does Marie comment between nearly every student comment, her fluency in the language means that she has significantly more to say. While students in our study averaged 6.71 words per turn, she averaged 25.04 words per turn. The result is that she spoke 82% of the total words while the students combined only spoke 18% of the total.

[8] All names have been changed for confidentiality.

As a result of this one-on-one pattern of interaction, students tend to direct comments to the instructor rather than to one another. Therefore, the instructor becomes the link between students; in the conversations, almost all comments focus on the instructor. Figure 4 shows a whole-network social network analysis for the class we examined (Garton et al., 1999). Each edge in the network represents a comment specifically directed from one individual to another. Each comment might be a question, reply, or simply a directed comment. Dashed edges represent one to five comments, black edges represent six to ten comments, and bold black edges represent more than ten comments. From this analysis, it is easy to see the striking degree to which Marie, as the teacher, is the pivotal figure in the classroom conversations.

Marie is the pivotal figure in the classroom largely because no one answers her attempts to begin discussions. When she asks a general question online, however, she frequently receives a flood of responses. Almost all students seem to participate in the conversations without prompting. As a result, she can relax control and let the conversations develop among the students. Table 3 shows a typical portion of online conversation.

In the online environment, Marie spoke much less often, speaking only 6% of the total words. Her comments became much more equal to students comments; she averaged 7.08 words per turn while the students averaged 6.07 words per turn. Typically several students would comment between each of Marie's comments. While she continued to ask both general questions and questions targeted at specific individuals, the students began replying much more to one another. In fact, whispered comments – the online equivalent of passing notes – were almost always written in French. From this student-to-student interaction, a much more complete social network graph appeared.

The first time she hosted an IRC Français-based conversation, the amount of French generated by the students surprised Marie. At the time, she commented on how shocked and excited she was that she could not type fast enough to insert her opinion. The students took control of the conversation, not waiting for her mediation before replying. Often, she found the students had taken the conversations in a different direction before she had a chance to respond. She was surprised about this, but fascinated that the simple mediation of an online environment seemed to draw the students out. While her experience suggests a concern about students potentially getting left behind if they cannot type fast enough, no students cited this as a problem.

Table 3. In the Typical Online Conversation, the Instructor (Marie) is not the Gatekeeper.

Marie:	If architecture annoys you ask . . . me questions (not about clubs) about France. *(Si l'archi vous embête.. posez-moi des questions (pas sur les boîtes . . .) sur la France.)*
Jean:	Where in France are you from? (vous etes d'ou en france?)
Buzz:	France . . . do you know a small village named La Fleche? *(la france . . . connaissez-vous un toute petite ville qui s'appelle La Fleche?)*
Marie:	Paris *(Paris.)*
Buzz:	near Angers? *(près d'Angers?)*
Cuba:	If you want, madame, I can give them a small history of the monuments in Haiti . . . *(Si vous voulez, madame, je puis leur donner une petite histoire sur les monuments en Haïti . . .)*
Buzz:	I spent 3 weeks there . . . it was stupid . . . there was NOTHING to do except learn French. *(Je passais 3 semaines là . . . c'était bête . . . il n'y a RIEN à faire sauf au'apprendre le Françasi.)*
Buzz:	Paris. . . I love it! *(Paris . . . j'aime bien!)*
Jean:	or Vendargues, near Montpellier? I was living there in sixth grade. *(ou Vendargues, pres de Montpellier? C'est la ou je suis habite en 6eme.)*
Blondie:	if we are not talking about architecture . . . . what is the subject now? *(si nous ne parlons pas sur d'archi . . . . quel est le sujet maintentant?)*
Buzz:	There, there is TOO MUCH to do. *(Là, il y a TROP à faire.)*
Marie:	Yes, go for the monuments of Haiti. *(Oui, va pour les monuments d'Haiti.)*
Cuba:	Do you want the historical monuments or the voodoo monuments? *(Vous voulez monuments historiques ou vaudou?)*

5.3. Philippe

Like Marie, Philippe's cheerful attitude and well-chosen conversation topics make him stand out. In fact, students frequently take his courses simply because he is the teacher. Despite this, Philippe also experiences the same difficulties as Marie. In classroom conversations, his voice dominates; he spoke nearly 84% of the total words in the classes we examined. Like Marie, he needs to comment on each student statement, hindering student-to-student interaction. Again, this results in making him the pivotal figure in the conversation; all conversation passes through him. As he manages the conversation, he says significantly more than his students. While his students said 7.70 words each turn, he averaged 39.45 words per turn.

When hosting discussions on IRC Français, however, Philippe faced the same situation as Marie – students who never seemed to talk in class rapidly joined into the conversation online. In fact, the students frequently took charge of the conversation. In one discussion, Philippe's suggested topic of discussion

was to compare the attitudes of Americans and the French with respect to women in the workforce. One student, however, had broken up with his girlfriend the previous evening and really wanted to talk about that experience. The other students online decided to give this individual the emotional support he needed, ignoring Philippe's topic until significantly later in the conversation. Philippe found this exciting since it met his primary goal – to engage the students in the French language.

Like Marie's experience, typically many students commented between each of Philippe's comments. Using IRC Français reduced his talking time from 84% of the words spoken in the classroom to 14% of the words spoken online. Students still averaged 6.04 words per turn in these discussions, but he decreased from 39.45 words per turn to 7.58 words per turn. Again, we see Philippe becoming a more equal force in the conversations as the social network graph became much more complete.

6. TWO POTENTIAL EXPLANATIONS

If these changes seem to occur regardless of the teacher and across different research projects, the explanation seems to lie in the conversational medium. In our interviews with IRC Français participants, two mechanisms seem to play important roles in the social leveling that occurs. First, the conversations occur in 'almost real-time.' There is a time delay during which students can compose responses privately. Also, a supportive community develops. Peer support can have an important effect on attitude towards learning.

6.1. Almost Real-Time Conversations

In face-to-face conversations, individuals have clearly designated turns at which they must speak. These turns come from a complex intermingling of factors such as gesture, expression, and eye contact (Kendon, 1967; Vertegaal et al., 2000). In online environments, however, many of those guiding mechanisms disappear, making the traditional notion of turns relatively meaningless (Cherny, 1999). For example, a conversation can continue, even when someone has specifically been questioned. An individual can comment whenever s/he wants without waiting for the floor to be relinquished.

For one student using IRC Français, this meant that:

> People are not staring at you when you're talking. You're not put on the spot, basically. If you want to respond to something someone says, you can. And if you don't, you don't.

Students felt more freedom to speak since they could compose a message before sending it to others. A slight time delay was available for students to work through problems or figure out complicated grammar. Many mistakes in composition could be corrected before anyone sees them. At the same time, however, conversation progressed; a comment needed to be formulated within a socially limited amount of time before it became irrelevant. The dictionary could be consulted for one word, but not an entire sentence. The time pressure of real-time conversation remains, but a small delay seems to encourage greater participation.

6.2. Community-Based Support

Much educational theory supports learning in 'naturalistic' settings (c.f., Lave & Wenger, 1991; Papert, 1980). A close examination of these naturalistic settings, however, reveals the involvement of social aspects as a key factor; significantly more social activity occurs in naturalistic settings than in classroom settings (Newman et al., 1989). College classrooms are no different from other classrooms in the amount of social interaction they support. The only common bond between students is often the shared educational goal that the class itself represents. Therefore, college classrooms favor weak relationships.

That one common bond, however, can be combined with electronic ties in order to produce greater communication (Constant et al., 1996; Pickering & King, 1995). We saw this happen in IRC Français. Students actively opened up to one another and quickly formed their own sense of community. The students involved were quick to point out this contrast between the newfound friendships and the standard classroom experiences. Many saw the change as an exciting opportunity to build personal relationships, saying, "I got to know [the others] better online than I ever would have in class" and:

> I think it allowed us to get to know each other better. . . . You learn about [the others] as people. We would talk about relationships and all kinds of things that you wouldn't talk about in class.

From these IRC Français-based conversations, a community of students developed. The students began to know one another better than they would

have in class. This community, in turn, provided informal support for learning. If someone used vocabulary or grammatical structures that another did not understand, the students readily asked about it, discussing the difficulty rather than silently feeling alone. More importantly, however, the community provided important emotional supports for learning (Bruckman, 1998; Papert, 1980). For example, one student found the support to be a confidence builder. Through talking with other students, she discovered that they were supportive of her learning goals and would help her get there:

> [The others online] were just like, 'It's ok if you make a mistake. We're never going to call you on it. Just try. That's all that counts.' And it made me feel a lot better when they said that. ... [Towards the end,] I did not worry if I got something mixed up in the sentence because I was trying to get them to understand the overall view... [Now,] when I see some of the people outside of class, I'll say something in French to them. The friendships that were built though the chatroom has given me the confidence to speak more.

The community that developed through IRC Français was able to provide important help for learning. Students grew to know one another better and used those friendships as support for learning French.

7. IMPORTANCE OF SOCIAL EXPECTATIONS

When comparing the participation of the instructor with the participation of students, the online environment seems to make the conversations much more equal and democratic. When comparing students, however, different levels of participation are clearly visible. In some cases, these levels of participation simply reflect personality differences among individuals. Some people are more gregarious than others. This shows in their participation in an online community much as it would in a face-to-face community. Individual participation differences are apparent, but even the least involved student online is more involved than the most involved student in the classroom. Nevertheless, personality differences do not seem to completely explain participation differences.

Changing social expectations online lead students to treat the online discussions differently than classroom discussions. On the positive side,

they feel freer to take control of the conversation and change the power dynamics of the situation. On the negative side, however, many students do not feel compelled to treat the online conversations with the same respect that they have for classroom conversations. Commonly, students who appear in log files to have only had limited participation in an online conversation were not present for much of that conversation. Frequently, students arrive at the online conversations significantly late or leave the conversation early. Arriving late means that either it will be difficult to incorporate the newcomer into the conversation or someone must review the conversation to bring the newcomer up to speed. Leaving early leaves a conversational gap that had previously been filled. Dealing with this gap often slows discussion, as the remaining members of the conversation must, in essence, regroup.

8. CONCLUSIONS

Researchers investigating the role of text-based chat for foreign language learning have reported on a number of phenomena. In these synchronous online environments, students exhibit higher levels of attention (Beauvois, 1992b). They are more honest and candid toward those in a position of authority (Kelm, 1992). They get to know one another much better online than in the classroom environment (Beauvois, 1997). Language use is more extensive and more advanced online than in the classroom (Kern, 1995). Finally, they tend to speak mostly in the foreign language; code switches into the native language – even among participants who all share a common native language – are relatively rare (Beauvois, 1992a; Kelm, 1992; Kern, 1995). These findings mirror the results of studies in online work-related environments (e.g., Sproull & Kiesler, 1991).

Most of these studies, however, used pre-existing software with a single classroom of students. In this paper, we have explored the design evolution of both software and pedagogy in the creation of IRC Français. Quantitative results from this environment largely replicate the results of these previous studies, suggesting that the changes observed are a result of the communication medium. Qualitative results offer some insight into the important features of the medium. In particular, the slight delay in interaction seems to play an important role. Students have time to think and struggle without the whole class staring at them in the online environment. Students do not hold up the rest of the class while composing a contribution. Meanwhile, this composition

time is socially limited and forces students to concentrate on techniques for increasing fluency.

These results also raise some new questions. When all students are conversing online while physically collocated in the computer lab, the teacher still maintains a degree of control over students' wandering attention. When students are dispersed, however, the teacher has less of a sense of whose attention is directed to the conversation. It becomes much more difficult for the teacher to ensure that s/he engages all students.

More importantly, we are still left with questions regarding the exact nature of the learning in this type of text-based environment. Can these interactions transfer to oral, face-to-face situations? Some early research (Payne & Whitney, 2002) seem to suggest that learning does transfer, but much more is needed. What are the best pedagogical practices for using chat in a foreign language learning class? Again, some researchers have begun exploring this question (Blackbourn-Jansma, Submitted), but more is still needed. Finally, can other types of potentially richer online environments encourage the same types of behavior and learning? If foreign languages naturally have an oral component, does it make more sense to use some form of audio chat? Internet researchers have begun exploring the behaviors in different communication media (France et al., 2001), but the learning potential of these media has not been evaluated. To date, research in new communications technologies for foreign language learning has largely focused on exploring the behavioral changes seen online. While more research into this domain is still necessary, the changes observed in online interaction suggest that these conversational environments have strong potential to positively influence foreign language learning.

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