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Online synchronous communication in the second-language classroom

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Abstract

The study reported on in this paper used a framework of benefits, challenges and solutions to categorize data from a design experiment using synchronous online communication for learning French as a second language (FSL). Participants were 92 Grade 6, FSL students and four teachers from urban and rural areas of Newfoundland, Canada. Data collection relied on online observation, teachers' use of blogs and an online discussion forum, face-to-face planning and reflection meetings for teachers as well as interviews with all participants. Benefits included independence and peer-learning; authenticity and motivation; anonymity and confidence; enhanced self-esteem. Challenges related to teacher multi-tasking; poor sound quality; technical problems; momentum; grouping; scheduling. Solutions included use of student moderators; audio tutorials and direct messaging; activity tutorials; technical support and capacity building. The categories and their subcategories were grouped into two themes of positive affect and student-centered learning.

Résumé

L'étude décrite dans le présent article a utilisé un cadre prenant en considération les bénéfices, les défis et les solutions afin de classer les données d'un dispositif expérimental utilisant la communication synchrone en ligne pour l'apprentissage du français langue seconde (FLS). Les participants étaient 92 élèves en FLS de sixième année et quatre enseignants de milieux urbains et ruraux de Terre-Neuve, Canada. La collecte des données s'est fondée sur l'observation en ligne, l'utilisation de cybercarnets et d'un forum de discussion en ligne par les enseignants, la planification en face-à-face et des réunions de réflexion pour les enseignants, ainsi que des entrevues avec tous les participants. Les bénéfices comprenaient : l'indépendance et l'apprentissage entre pairs; l'authenticité et la motivation; l'anonymat et la confiance; l'amélioration de l'estime de soi. Les défis se rapportaient à : la multiplicité des tâches incombant aux enseignants; la mauvaise qualité sonore; les problèmes techniques; la dynamique; le regroupement; la planification. Les solutions incluaient : l'utilisation d'élèves à titre de modérateurs; les tutoriels audio et la messagerie directe; le renforcement des capacités; les tutoriels d'activités. Les catégories et leurs sous-catégories ont été regroupées en deux thèmes, soit l'affect positif et l'apprentissage centré sur l'élève.

Introduction

Netten and Germain's (2004) conclusions about Canada's Core French as a second language (L2) program were that it resulted in "minimal abilities" to communicate in French. This result is in spite of the fact that the program's participants receive, as Turnbull, Lapkin, Hart and Swain (1998) explain, 1400 hours of instruction in French from elementary through to the end of high school. Netten and Germain described how Core French students "are not able to communicate with ease in French" (p. 276). Likewise, in a survey of 2,989 Grade 11 students in the Atlantic Provinces who discontinued French, only 28% agreed that they had activities where they could use French as an L2, and only 33% enjoyed their prior experiences learning French. When asked what they disliked about French, 40% reported that activities were "boring, juvenile and ineffective" (Atlantic Provinces Education Foundation, 2002, p. 12). These findings are congruent with those of a Canadian Parents for French (CPF) (2004) study involving 105 university students. Almost half of those who passed Grade 12 felt they could not understand spoken French.

Not surprisingly, researchers such as Calman and Daniel (1998) have argued in favour of "increasing opportunities for students to communicate orally in French within a communicative-experiential language context" (p. 319). Lapkin, Harley and Taylor (1993) called for identifying activities most effective in developing oral skills. The study of Grade 11 students in the Atlantic Provinces who discontinued Core French (Atlantic Provinces Education Foundation, 2002) noted the need for "approaches which maximize speaking" (p. 16). Likewise, Vandergrift (2004) emphasized the importance of allowing students "to use the L2 as the vehicle of communication" and to have "real or virtual contact" with peers in order to feel more motivated (The Nature of Language Learning, ¶ 3). A recommendation of the report *Plan Twenty Thirteen* was to develop "courses that focus on authentic communication and meet the interests, abilities and needs of the students" (Canadian Heritage, 2004, p. 34).

Opportunities for students to communicate in French will ideally involve what Krashen (1982) refers to as "low anxiety situations, containing messages that students really want to hear" (pp. 6-7). These types of activities may be supported by the use of online electronic tools specifically those that allow students to communicate with each other independent of geographic location and in real time or synchronously. Felix (2004) found that use of technology provided opportunities for student risk-taking and for addressing the issue of oral performance anxiety. Hampel and Barber (2003) argued that audio-graphics and video conferencing lend themselves to interactive, collaborative, task-based, student-centered activities (p. 184). White (2003) highlighted the benefits of using web-based, real-time (synchronous) interaction and communication as follows: it is spontaneous; it motivates learners who develop a sense of community and gain energy from the group; it offers opportunities for peer feedback; and it supports the development of interactive competence.

In spite of the potential for the use of technology in language learning, in general, there has actually been very little empirical research on computer-networked language learning or networked-based language learning (NBLL) (Kern & Warschauer, 2000). Research on the use and pedagogical effectiveness of tools that allow for internet-based synchronous (real-time) voice communication is limited (Hassan, Hauger, Nye & Smith, 2005). Research that is conducted on NBLL must be premised on the understanding that, as Kern and Warschauer argue, "The computer, like any other technological tool used in teaching … does not in and of itself bring about improvements in learning" (p. 2). To understand the contribution that computers can make to language learning, requires a focus on "particular *practices of use* in particular contexts" (p.2). The outcomes that should be studied involve not only the quantity/quality of language use, but also learners' attitudes and motivation.

The purpose of the study reported on in this paper was to focus on particular practices of use in particular contexts to identify the benefits, challenges and solutions related to use of synchronous online communication in elementary level (Grade 6) French as a second-language classrooms. While the findings of this study are particularly relevant to an FSL and Canadian context, they may also be

relevant for learning second languages in general (e.g., ESL) and in other countries.

Methods

Design experiment

The study used a design-based approach to guide the research. Design-based research is a "methodology aimed to improve educational practices through systematic, flexible, and iterative review, analysis, design, development, and implementation, based upon collaboration among researchers and practitioners in real-world settings" (Wang & Hannifin, 2004, p. 2). Design-based research, also referred to as Design Experiments (see Brown, 1992; Collins, 1992), involves a progressive refinement of the design "based on experience, until all the bugs are worked out" (Collins, p. 18). Using this approach, the participating teachers in the study collaborated with researchers to design and redesign online synchronous communication activities for use in their FSL classrooms.

Participants and context

The four, Grade 6 teachers recruited to participate in the study were responsible for teaching classes of Intensive French (IF). IF is a program designed for Canadian students (Lapkin, 2004). According to Netten and Germain (2005), it involves a five-month program in Grade 6 during which 70% of school time is focused on intensive exposure to French. During the other five months, all subjects are taught in English, except French, which comprises only 10% of the curriculum. Three of the teachers were in rural areas while one was in an urban area. Class size varied from 19 in each of two classes and 26 and 29 in the two other classes for a total of 92 Grade 6, FSL student participants from urban and rural areas of Newfoundland, Canada. Classes included a range of abilities and both males and females. The four classes were supported by a research team including the principal investigator, a project manager, webmaster and one research assistant. Teachers collaborated with the research team to iteratively design, redesign and deliver activities. Also part of the team was the provincial consultant for French programs.

Electronic tools and resources

We used the WebCT™ learning management system to support asynchronous interaction, communication and collaboration between the geographically and organizationally dispersed group of four teachers and the research team. The WebCT™ discussion forum supported communication related to group planning and scheduling, reporting of technical glitches, problems or solutions. The email feature supported communication mostly between the project manager and the teachers for incidental reminders and updates. Elluminate Live™ (E*Live*), communication and collaboration software supported the communication between groups of students. E*Live* was chosen because the schools had a license for its use. E*Live* includes a whiteboard, direct (instant) messaging tool, and audio feature. The E*Live* sessions were recorded for subsequent viewing.

As part of the study, we provided all participating students with headsets including an attached microphone. The research assistant used a blog to report on live observations of the E*Live* sessions. Live observations means that the assistant could witness all the textual, audio and visual interactions within the online synchronous communication environment. Teachers could also use the blog to reflect and report on the design and conduct of the activities. The project included a website (no longer available), in addition to WebCT™, designed to house information about the project, as well as provide resources for use by students and teachers involved in the project. Computers were provided by the Centre for Distance Learning and Innovation, Government of Newfoundland and Labrador, Canada. Technical support was provided by the school districts. Students were working within an Intranet as opposed to on the open Internet.

Research activity and data collection

Teachers participated in an initial formal orientation and planning session of one and a half days, prior to the start of the project. The purpose of the orientation was to introduce them to the project and provide them with an opportunity to become familiar with the use of E*Live*. During this time, we also began planning and collaborating on the design of activities. This collaboration continued asynchronously on email and in the WebCT™ discussion forum after the face-to-face meeting.

Teachers were also provided with one release day in the middle of the project. The purpose of this day was to collaboratively review and reflect on the successes and weaknesses of activity one and to alter classroom practices where necessary. The purpose was also to design the second activity. During this day, the teachers and research team reviewed a selection of the recorded E*Live* sessions in order to identify the successes and weaknesses. Teachers were given a half-day release in the third quarter of the project to reflect using the blog. Questions for the bogging activity included:

1. What steps did you take in preparation for this activity?
2. Were students sufficiently prepared?
3. What were your expectations for this activity?
4. How did the activity measure up to your expectations?
5. How did you follow up the activity?
6. What classroom management issues did you observe?
7. What technological issues did you encounter?
8. What sorts of logistics did you need to sort out?
9. How would you do this activity differently if you were to do it again?

Students were given an initial training session of approximately one-half hour to orient them to the use of technology and teachers had access to an online E*Live* training video of five minutes in length which they could show to students. Student activities and teacher practices were progressively and iteratively refined as challenges were identified and solutions tested and implemented. Two groups of students at one time with a maximum of four students on each end participated in the activities at any one time. The research assistant was present virtually in the online E*Live* environment and could 'observe' the students' textual and audio interactions. After each session, she posted comments in the study's blog in which she identified success, problems and solutions. With the next group of students, the design and the delivery of the activity could then be redesigned and modified to improve its effectiveness.

Students communicated in French in groups of two at a time (e.g., classes A&B, C&D, A&C, etc.) with four students from each of the two classes participating at any one time for between 30-40 minutes. The research assistant was responsible for coordinating and scheduling the participation of classes. As much as possible, teachers were expected to carry on teaching their classes while students communicated with each other in the back of the classroom.

Semi-structured interviews

The four teachers and participating students were interviewed at the end of the study. Students were interviewed in groups of two. All interviews were transcribed. Questions for the students were designed to gauge their levels of satisfaction and motivation about the technology and the activities. They were also designed to identify the types of activities students preferred, the problems or difficulties they encountered and the solutions they devised. The questions for teachers focused on their role in the classroom in relation to the activities, how they grouped students, the types of pre- and post- activities carried out, how they made decisions about participation, technical or other problems encountered and their suggestions for sustainability and scalability of the project.

Data analysis

The data consisted of the following:

- Notes from the face-to-face meetings;
- Online observations of 36 recorded E*Live* sessions;
- Transcripts of interviews with teachers and students;
- A compilation of all WebCT emails and discussion postings;
- A compilation of 46 blog entries.

Data were analyzed formatively on an ongoing basis to inform the design of activities and the conduct of the project then summatively to identify benefits, challenges and solutions. Once the study had finished, all data were aggregated and the first step prior to analysis was to reduce the data to eliminate any content not directly related to the study's focus (Miles & Huberman, 1994). Analysis relied on open, axial and selective coding (Glaser & Strauss, 1967; Strauss, & Corbin, 1998). Open coding involved reading and rereading in order to identify and name phenomenon in the data. A line-by-line analysis led to labelling in response to the question, 'what is this segment about?' The first level of labelling involved identifying if the segment related to either a challenge, solution or benefit. Next, within each of those three categories, labels were assigned to segments. As much as possible, the labels referenced words used in the segment. Labels included terms or constructs such as authentic learning, peer learning, motivation, etc. Once all segments had been given labels, axial coding involved identifying relations and patterns between labels, in order to reduce their number and to group them into subcategories. Finally, selective coding involved grouping similar subcategories to identify overall themes. The themes are presented in the discussion section.

Findings

Analysis of the data led to the identification of the following subcategories of benefits related to use of online synchronous communication for promoting speaking in the elementary FSL classroom: independence and peer-learning; authenticity and motivation; anonymity and confidence; enhanced self-esteem. Challenges included the following subcategories: teacher multi-tasking and student moderators; poor sound quality, time lags, audio tutorials and direct messaging; momentum, dead space and activity tutorials; technical support and capacity building; grouping; scheduling. Solutions included the following subcategories: use of student moderators; audio tutorials and direct messaging; activity tutorials; capacity building. Quotes from the various data sources illustrate and provide evidence for the categories and subcategories.

Benefits

Independence and peer learning

The synchronous conferencing took place in the back of each classroom, typically with four students at one time communicating with another four students in another classroom. While their conferencing was taking place, the teachers in each class were expected to continue with regular classroom instruction. The set-up of activities required therefore that students work independently. The first activity was designed to parallel the IF curriculum theme under study in each class which was *Tout Sur Moi* or *All About Me*. We titled the activity *Qui suis-je?* or *Who am I?* Students were instructed in advance that they had six minutes to go into the breakout room within the online synchronous environment with their partner and gather as much information as possible about each other. Students took turns at three-minute intervals at which time the partner needed to ask the questions to get information about the other student. After six minutes, students returned to the main online room

where each was required to ask one question to the member of their own class about the student in the breakout room. The second activity designed by teachers with the research team was "objet mystere" or mystery object which required students to ask questions of their peers in order to guess what object they had in mind.

Students' familiarity with the Internet and with technology in general made it easier for them to work on their own. They learned very quickly how to use E*Live* "without a teacher's help." As one student commented, "I don't really think you need a teacher if you know the way around the Internet." Students demonstrated an ability to rely on both print and digital resources to find their own answers to questions as this student's comment reveals: "the teacher would be nice sometimes if I don't understand a question but I could always use a dictionary so I don't think I would need that much assistance." One teacher explained how, normally, she is "always there to kind of interfere when they don't understand." However, with the online activities, she could not be directly involved "so they had to work out their own ways of trying to figure out what the others were saying and they depended on each other for that as well."

The activities also provided students with opportunities to learn from other students as illustrated by the following comment: "If you have a word you don't know, you could always send a message using the keyboard … and they would respond and … that way you won't have to ask your teacher." Students also learned by being exposed to vocabulary from their peers. One teacher explained:

> Also, their oral skills, I found really improved. They would hear different things that the other students would say that I might not have said in my classroom but that another teacher was saying or a different expression.

Authenticity and motivation

One teacher observed regarding the positive reaction of students: "They absolutely love it. They love it, and they really like to see that they actually can converse with another student in some sort of an authentic situation." Another noted that communicating online through the project was "so much fun to them," more natural and relaxed as she explained:

> They're not thinking that ok, 'miss is here evaluating me and anything like that,' … they are in a real, authentic situation, as authentic that you could get for the classroom because they are going to speak a lot differently with a child their own age than they will with me.

Motivation resulted, not only from the novelty of using a computer and engaging in new classroom activities, but in having the opportunity to make new friends, as one student explained:

> When [name of teacher] says …. 'tomorrow we are going to have a class of Elluminate live', I'll make sure that there's an extra effort that I am going to school the next day because I find it so fun because … with Elluminate Live you get to like meet people … you would probably never meet because they don't live in your area.

Anonymity and confidence

The interaction with other students proved beneficial because of the anonymity afforded by working in an environment where they did not know each other in advance. One child's comments illustrated the role of anonymity: "It's easier to speak online because they don't know you as well. In class they know if you are good at French or not but online they don't. If you fool up [sic], it doesn't really matter." The fact that students could not see each other added a further level of anonymity that also played a role in students' confidence and willingness to speak French without the worry of making mistakes as the following comment illustrates: "It helps you interact with people who you can't see so you aren't so shy because you don't know them … if you make a mistake in front of your friends you might be embarrassed."

Enhanced self-esteem

The experience of communicating online appeared to be of particular value to students who might typically be weaker in French as one teacher's comments illustrate: "Everyone felt equal, so to speak, and I really found it helped my weaker kids take risks and their self-esteem improved and I could see that play over into the classroom."

Challenges and solutions

Teacher multi-tasking and student moderators

The project's goal was to design online student communication activities that could take place in a classroom in parallel with other classroom activities. Therefore, students needed to be able to log on, complete sound testing, and deal with technical difficulties on their own. However, initially, students automatically called on their teachers to help them whenever they encountered a problem. As a result, teachers' attention had to be divided between the group of students engaged in the online communication and "the rest of the class". One teacher described the challenges related to this multi-tasking:

> These sessions took place during Math class. I have students who require a great deal of one-on-one assistance in Math, and I found it difficult to attend to all of the students' needs. This was compounded by the fact that there were several technical difficulties.

Our solution to this challenge was to give more responsibility to the online students. This responsibility involved assigning a select number of volunteers as student moderators. Student moderators were responsible for technical troubleshooting, helping with audio testing, and making sure students understood the activity. The following comments illustrate the importance of their role:

> I felt that the student moderators were definitely a really, really good decision in this project…. one of my student moderators ... was extremely helpful to the other moderators after her. After she had her turn, she was able to give really constructive advice to the others as they were doing it. They came to depend on her more for that than me, which I thought was great; it was just putting more control into the hands of the students.

Poor sound quality, time lags, audio tutorials and direct messaging

In the initial sessions, the focus on communication and language was overshadowed by poor audio quality with communication that was "choppy and intermittent, like a cell phone with a poor signal." In addition, students were shouting into their microphones "which was disruptive to the regular classroom instruction."

To overcome some of the problems with sound quality, we created an online tutorial (in French). The tutorial consisted of a slideshow with audio, text and images. Part of the tutorial encouraged students to hold the microphones closer to the mouth to avoid the uptake of surrounding voices and to eliminate the need for students to shout. The tutorial also reminded students to turn on the microphones before they began their session and directed students to rely on the audio wizard within E*Live* itself. This strategy proved effective as one student's comments illustrate: "It showed us which way to push it and then you could playback your microphone so you could actually hear how loud you were being. …The sound was really good after that."

Another solution to the poor sound quality was to make use of E*Live*'s direct (instant) messaging tool. This tool allowed students to communicate with each other using text as opposed to voice. Students' reaction to the use of text to communicate in French was overwhelmingly positive as the following comment indicated: "Students LOVE using DM. ... These instant messaging media are a form of socializing, and when presented with the option of using DM in E*Live*, the students embraced the opportunity."

Momentum, dead space and activity tutorials

An additional challenge was that of “dead space - moments of silence in which nobody is speaking.” Some teachers commented that “the activity is going on for too long and too slowly. There is not enough action for all students to be engaged at all times.” To overcome this problem, we created a slideshow outlining the activity and which we made available to the classes. One teacher’s comments highlighted the success of the solution as follows: “I really noticed a difference with my students this time. They made more of an effort to complete the activity when they could see the time that was remaining.”

Technical problems and capacity building

Technical problems included lack of equipment, not knowing from where to obtain it, downed servers, occasional lack of Internet connection, missing or corrupt files in the operating system, and computer viruses. To ensure sustainability of the project, it was important that the technical aid not be provided by the project. We did supply the initial equipment through an in-kind contribution but it was necessary to build capacity within the system – i.e., the teachers and the schools. Initially, participants contacted the research assistant or posted messages in the discussion forum to report problems. On each occasion, the participants were encouraged to identify resources or people in their school or broader school community who could address the technical issues. Eventually, the participants did succeed in solving these problems without the support of the research personnel. One teacher’s comments illustrate this accomplishment:

> I would let our technician know that I had some computers down and he would then let [name of technician] know that we had some computers down and he would be in and have them fixed almost right away.

Grouping

Challenges related to grouping involved making decisions about whether to group based on ability or according to whether a child was typically silent or more extroverted. One teacher explained how some of her students felt “intimidated” when the other student knew more French. One teacher explained how he grouped students “based on interest level” while another decided on “random picking of their names.” Another teacher used “alphabetical order” while another described the results of putting together “a strong and a weak” as" follows: |the kids who weren’t so much risk takers had someone who was a risk taker there to help and I could see them encouraging them on.”

Scheduling

Scheduling presented one of the most difficult challenges faced in terms of participation by organizationally and geographically diverse classrooms. A teacher might decide that participation in activities might work best on, for example, Monday, Wednesday and Friday mornings, during periods x, y, z. Yet, it was not always easy to find another classroom that might be available at the same times. Gym and music classes, which take students out of their classroom, interfered with participation as did special events such as guest speakers, heritage fairs, ski trips, parent-teacher interviews, assemblies, photo week, professional-development days, closures due to snow storms, etc. Teachers could not easily change subjects to accommodate another class as one individual explained: “.I am very locked into my schedule and I don’t have the flexibility to change any subject at any particular time.” Scheduling challenges were difficult to resolve. The best solution that we could derive was to encourage teachers to be as flexible as possible in terms of allowing students to use the computers.

Discussion

The following three subcategories relate to a larger theme of positive affect: authenticity and motivation; anonymity and confidence; enhanced self-esteem. Teacher multi-tasking and use of student

moderators, independent and peer learning were grouped into the theme of student-centered learning. The theme of student-centered learning also includes the challenge of poor sound quality, time lags and audio tutorials because that challenge led to the development of audio tutorials designed to help students build capacity to independently solve technical problems. Momentum and dead space are also related to building capacity and student-centeredness because, as a solution to that challenge, we created tutorials to facilitate students' progression through the activity. The challenge of grouping is related to the theme of student-centered learning because it involves making decisions about how to organize student-to-student interactions and communication. Scheduling stands on its own as own as a challenge to synchronous activities in organizationally diverse contexts. It will therefore be discussed separately and not within the other two themes.

Positive affect

The role of affect in second and foreign language acquisition has been addressed by Krashen's (1988) theory of second-language acquisition, more specifically the theory's fifth hypothesis, The Affective Filter Hypothesis. According to Krashen, high motivation, self-confidence, a good self-image, and a low level of anxiety play a facilitative role in second-language acquisition. Low motivation, low self-esteem, and anxiety raise the affective filter thus hindering second-language acquisition. In a review of the literature on influences on language learning success, Ehrman and Oxford (1995) highlighted factors such as self-esteem, motivation and risk-taking. The students' participation in the online synchronous activities provided an opportunity to lower the affective filter, reduce anxiety and to promote positive self-esteem, motivation and risk-taking. The anonymity of the communication and the fact that students did not know each other made them less inhibited and more willing to communicate in their second-language. It made them less afraid of being made fun of if they made a mistake.

The students' references to being made fun of and being embarrassed because of a mistake remind us of how high the affective filter is normally for these sixth grade 12-year-old children. In general, the negative role played by anxiety in second and foreign language learning is well documented (see Macintyre, 1995 for a review). Macintyre argued that language anxiety can play a causal role in individual differences in language learning. However, the anonymity associated with online synchronous second-language communication provided a means to avoid the anxiety that might be associated with communicating in the language.

At the post-secondary level, Kissau, McCullough and Pyke (2010) investigated online FSL instruction and found that the online environment reduced anxiety and helped students increase perceptions of their competency in the language. Findings reported on in this paper for students at the elementary level are congruent with these findings of Kissau, McCullough and Pyke. Liontas (2002) explained that computer assisted language learning (CALL) may lower students' affective filter because they may experience less stress learning the language online than in a face-to-face context in which the potential for embarrassment is greater.

Student-centered learning

The online activities provided opportunities for independent and peer learning that could take place without the intervention of the teacher. Teachers' initial adjustment to students working on their own on the computer resulted in concerns of multi-tasking and an inability to address the needs of students doing different activities within the one classroom. In this sense, the technology disrupted certain traditional practices of teacher-centeredness. However, by appointing students as moderators who actually took on some of the duties of the teacher, we were able to take some of the instructional burden off of teachers. Guidance was also provided to students by learning objects in the form of tutorials in sideshow format. Those objects helped students build capacity. They helped deal with issues of poor audio quality and momentum and dead space. They provided students with directions on how to work more effectively when using synchronous communication tools.

In terms of the challenge of grouping, no one solution or approach emerged. In general, the

approaches teachers relied on for grouping in the regular classroom (not online) were not necessarily the most effective in online communication. For this reason, teachers experimented with what worked best in their context. Based on our experiences in this study, it would appear that grouping in synchronous communication for second-language learning may require a different set of protocols and strategies than does face-to-face communication and would merit further investigation.

The subcategory of technical problems is also related to student-centered learning. The audio tutorial helped build a degree of capacity in students to solve technical problems. In addition, a core group of students could be given larger responsibilities by the teacher to deal with more complex problems. Protocols could be put in place for when the student would need to contact the teacher who would then need to contact technical support. Students can be made aware of and become used to the time lag which, as Blake (2005) observed, is a feature of online oral communication and which can be confusing. Kenning (2010) also noted the effects of lags on communication: "Like silences in telephone conversations, time lags prompt participants to undertake channel checks in order to ascertain whether their interlocutors are still there (e.g., can you hear me?), and interfere with the flow of the conversation" (p. 8).

Scheduling

Murphy (2005) found in a study of online synchronous communication using music as a vehicle for collaboration and communication at the high-school level that "temporal barriers may hinder interaction and communication across time zones and are not eliminated as easily as are spatial barriers" (p. 335). Likewise, the greatest challenge observed in this study were those related to temporal barriers. One solution to this challenge might be to restrict communication to within the timetable of one school. That arrangement would work if there were more than one participating classroom within the school. It would not, however, allow for the degree of anonymity afforded by having students from different schools communicate with each other. Asynchronous voice communication whereby students record their voices so that their interlocutors can listen and respond later in their own time (e.g., VoiceThread™) might also be a solution although it would lack the spontaneity of real-time communication.

Conclusion

The study reported on in this paper linked online synchronous communication in FSL learning with the promotion of independence and student-centeredness as well the promotion of positive affect including motivation, confidence and self-esteem. The study was limited to interviews with participants and some observations of online sessions. A larger cohort and different context or grade may have yielded different results. There were no measures taken of linguistic gains beyond anecdotal reports from teachers and students. We do not know if students' speaking skills improved. What we did find was an improvement in factors that facilitate improved linguistic outcomes i.e., positive affect and student-centeredness. Findings of this study also suggest that the anonymity afforded by the computer played a facilitative role in students' learning because it had a positive effect on their attitudes, confidence and motivation.

In terms of implications, there has been an emphasis in some of the CALL literature (see for example, White, 2009) on the need to better prepare second and foreign language teachers to integrate computers and technology into their teaching. Ariza and Hancock (2003) argued that teachers need both technological and pedagogical training in CALL. The teachers in the present study did not reference any specific need for better preparation in this area. It was more so, the disruption in their traditional classroom management practices with which they needed help. They needed to learn strategies for managing more than one activity in the classroom at one time and techniques for helping students become moderators and for integrating the online activities with classroom activities by organizing pre-and post-online communication activities. One important finding was the effectiveness of using students as moderators as a means of promoting student-centeredness but, also, for

sustainability of this sort of project to contexts in which use of adult moderators may not be feasible.

Pedagogical training might help teachers design scaffolds to support students' linguistic progress using the activities. Such scaffolds could involve links to visual dictionaries or specialized vocabularies related to the theme students were studying. The scaffolds might make it easier for students to effectively participate without the help of a teacher. The scaffolds could be designed and presented as various learning objects from which students could select. These objects could be available within the online communication environment (in this case within *ELive*.) Alternatively, students might make use of a different online environment than what was offered by E*Live* (e.g., Skype™). Students' interest in communicating and interacting socially in French with their peers suggests that the online learning environment might ideally be designed to mimic a social-networking site except it would be in French. McBride (2009) identified social networking as a tool that could potentially support language practice while at the same time engage students' interest, suit their communication style, and help them develop learner autonomy.

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