Breaking down borders to multiliteracy: writing in a second language with technology.

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Abstract

In his book entitle Technopoly: *The Surrender of Culture to Technology*, Postman (1992) raised serious concerns regarding the invading power of computer technology and rightly argued that we should seriously consider "what other humans skills and traditions are being lost by immersion in a computer culture" (122). Here I would like to take an opposing point of view and consider the beneficial power that computers may have in the particular case of learning to write in a second language. My assumption is based on my experience as an educator and as a parent, and my simple desire to facilitate learning and cognition without abolishing traditional educational methods, such as pen and paper in the case of writing. In this article I will review recent research in CALL technologies for L2 writing and discuss the opportunity of combining them with concepts of multiliteracy as well as curriculum design.

Introduction

The development of computer networks, computer mediated communication (CMC), social networking and other forms of on-line communication, has had a direct effect on language pedagogy as many recent research projects can testify (e.g. Warschauer, 2004; Murray and Hourigan, 2006; Schwienhorst and Borgia, 2006; Hegelheimer and Fisher, 2006). In and out of the classroom, course management systems (referred to in this article as CMS) such as *WebCT, Blackboard,* or *Moodle* have helped instructors introduce new pedagogical concepts (such as the use of electronic resources or, in the case of *Moodle,* collaborative writing of a wiki) and develop new networked language practices. Researchers generally agree on at least on one key-role played by computer-mediated communication (CMC): it helps students become more active participants in the learning process and facilitate their engagement and interaction with the course content (Bonk and King 1998, Harasim et al., 1997, Kelm 1992, Warshauer 1996, Kern, 1996, Bonk and Cunningham, 1998).

While computer supported collaborative learning (CSCL) can develop learners capacity to interact, it also promotes the integration of learning theories such as the Vygotsky's socio-constructivist theory (Bonk and King , 1998). CMS such as *Moodle,* which is actually guided by the pedagogical principles of "constructionism", "constructivism" and "social construction" of knowledge (http://www.eurocall2006.com/videos.htm), facilitate the inclusion of activities that reflect "real social practices" (Chanier, 2000, 83). Indeed, CMC facilitates the development of learning communities, therefore, translating learning into a social activity through which students discover the power of virtual connection and learn to work collaboratively on projects.

When considering writing as a social practice, other aspects of learning must be considered such as the impact of CMC on affective and cognitive levels. Research has shown that, by reducing inhibitions and increasing social interactions, as well as engagement and motivation to learn, CMC creates an environment of trust (Harasim, 1990; Pennigton, 1996). In a previous study (Caws, 2005) the author classified students activities performed in a CMC environment using Oxford's classifications and measured learners' degree of motivation. Findings showed that the motivational aspect of learning addressed both affective and cognitive facets of the learner. Likewise, studies by Kenning & Kenning (1990), Kelm (1996), Warshauer (1996), or Harasim et al. (1997) support the belief that synchronous and asynchronous electronic collaborative writing environments constitute an effective pedagogical practice to motivate students: they offer a non-threatening learning environment where the most reserved students can participate equally to discussions.

From a cognitive standpoint, CMC presents also numerous charac-

teristics. Research carried out by Jamieson and Chapelle (1987), Meunier (2000) and Duquette and Dionne (2000) concluded that computer assisted language learning (CALL) helped learners use metacognitive learning strategies such as problem resolution or auto-evaluation. In addition, CMC is seen to enhance peer evaluation, encourage students to manage their assignments and education resources and increase their writing practices. Other studies have also shown that peer-to-peer collaboration facilitates the learning process either in terms of linguistic development and accuracy, or transferable skills development such as negotiation of meaning (e.g. Kelm, 1996; Pellettieri, 2000; Perez, 2003; Polisca, 2006; Jones, 2006). Still addressing cognitive and meta-cognitive aspects of learning, Lehrer (1993) discovered that that the infusion of a computer-based hypercomposition tool enhanced students' learning by placing more responsibility into their hands and leading them "to plan, transform and translate, evaluate and revise documents" (202). As a result, Lehrer commented, "the most striking finding was the degree of student involvement and engagement" (1993, 209).

Technology, however, is not and should not be the answer to all our pedagogical dilemmas. As Felix (1999) already observed, research and practices are moving towards a focus on the student and on assessing what learners can do well with technology or what technology can bring to the student. Kern, Ware and Warschauer (2004) also agree that studies should focus more on "how well the learners can use all their available linguistic, cognitive and social resources to negotiate the linguistic, interactional and cultural demands of online discourse"(254). In addition Kern (2006) reminds us that assessing language learning effectiveness through empirical studies has not produced very significant results and concludes that studies should be more concerned with trying to "understand effectiveness in terms of the specifics of what people do with computers, how they do it, and what it means to them" (189). Bates (2000) adopts a similar view when declaring that "good technology does not save bad teaching" (200) and that, as a consequence, research should focus more on the relationship between learning outcomes, learning strategies and technology. For instance, studies need to assess the factors that seem most likely to affect students positively, or the learning outcomes that appear to be more easily achieved with technology (Bates, 2000). In the case of writing in a L2, my study revealed that technology facilitated and encouraged students' editing skills (Caws, 2006) but did not necessarily promoted positive collaboration amongst students.

Now that we have recognized the benefits of learning environment such as CMC and CSCL for writing, I would like to concentrate on two specific aspects that are starting to appear in more recent

On developing multiliteracy through writing

research and that, in my view, may hold the keys to the pedagogical success of adapting technology to teaching and learning to write in a L2: the development of multiple literacies and the design of an integrative curriculum.

Literacy, in education, is generally associated with the basic skills of reading and writing. Interestingly enough though, writing was ignored for a long time by traditional linguistic theories and research, and linguists such as Saussure or Bloomfield implicitly concentrated on studying speech, hence marginalizing writing. In today's society however, where most of our students belong to the Net-generation and have been raised in and out of digital communicative practices, from emailing to text-messaging, blogs, forums or web-based social spaces, we cannot deny that writing has indeed become a prime communication and connection modality. In second language acquisition (SLA) research, writing has gained more and more value in the last decade and thus it has helped us understand how students may learn specific communicative skills through writing in a L2. Harklau (2002) argues that "a consideration of literacy as a language learning mode [...] highlights variability in how target language proficiency is defined in different contexts and necessitates the recognition of a range of possible outcomes for adult L1 and L2 language acquisition"(338).

As modes of digital communication are literally exploding in all directions, the term literacy is slowly being replaced in research by *multiliteracy*. Canagarajah (in Matsuda *et al.*, 2003) explains that "the term *multiliteracies* is becoming important in popular discourse in the context of post-modern cultural developments, the decentered workspace, and cyber-communication" (156). She adds that, while still referring to reading and writing, the term also takes into account all the various modalities and symbols that writing can encompass. Indeed, it is essential nowadays to add complexity and new modalities to the traditional definition of literacy especially when it comes to writing in a multimedia environment where the author is presented with functions or codes (such as hypertext or wikis) that go beyond simple words on a page. For this reason Conglewski and Dubravac (2006) extends the notion of multiliteracy as follows: "Multiliteracy is characterized by an ability to communicate in a multimedia environment with all the additional, complex factors and functionalities that such a diversely cross-cultural and highly social context brings to bear" (45).

This notion of multiliteracy is having an impact on curriculum and in general on the way that we have looked at language program thus far. In *Remapping the Foreign Language Curriculum, Swaffar and Arens* (2005) argue that literacy is what partly defines the mission carried out by foreign language programs and consequently, the

authors also give a much larger definition to the word. According to them, "literacy describes what empowers individuals to enter societies; to derive, generate, communicate, and validate knowledge and experience; to exercise expressive capacities to engage others in shared cognitive, social, and moral projects; and to exercise such agency with an identity that is recognized by others in the community" (2). This large definition makes interesting links to learning aspects mentioned earlier (such as *communities, shared cognitive experience, communicate, ...*) and in my view, they sum up some outcomes that writing through CMC have helped foster. When more and more individuals use web-enhanced systems to communicate in writing, the very act of putting words together to form a message has implications on the development of abilities that go far beyond a mere focus on linguistic accuracy. When learning how to interact on-line in a L2, students must also acquire such skills as socio-cultural modalities in order to understand, accept or decline others' point of view and understand the "culture" in which their arguments are rooted. Learning to interact on-line must also facilitate the development of cognitive and meta-cognitive skills so that students can sort out information, critique findings, assess or edit peers' writing as well as their own. In this regard writing in a L2 via CMC has become an ability that engages not just one literacy, or skill, but multiple literacies.

In my experience as researcher and instructor of French writing online, I have noticed the development of three specific literacies: critical literacy, electronic literacy and socio-cultural literacy. These skills have appeared in various fashions depending on the interface used in the course (LAN or WAN, asynchronous VS synchronous, etc) and depending on the instructional strategy used to introduce the task. As shown in other studies, technology itself will not bring new literacies. The social context and the educational focus created by the instructor create changes and transformations (Warshauer, 2003; Swaffar and Arens, 2005).

Critical literacy

Students' ability to assess critically either their own writing or their peers' has been a learning outcome that I have always valued because it is directly transferable to other disciplines. Developing a critical mind through writing is done naturally by focusing the writing activity on subjects that provoke a wide diversity of opinions and where students are "encouraged" to find good arguments to make their case.

It is true that the critical literacy component does not need the technology to flourish. In the case of teaching writing in a L2 however, technology can foster the nourishment of critical thinking by transforming the activity into an authentic discourse whereby, for instance, L2 students are paired with native students to exchange opinions in a *blog*, or in *MSN*. Subsequent to this exchange, the discourse can be analyzed in class and specific linguistic items can be

discussed to show in particular the power that a word can have over another. The critical literacy here plays on two levels. On a cognitive level, the exchanges with native speakers motivate students to express their opinion in order to convince their readers (i.e. they need to choose appropriate words). On a meta-cognitive level, students are asked to assess their own writing and compare it to their peers', who may be native speakers. This important assessment aspect of the activity can also happen on-line and can become an exchange among native and non-native speakers where participants discuss the issues of meta-language. Many studies have documented similar activities, and as expressed by Hyland (in Matsduda et al., 2003) "by providing information about differences between learners and native speakers, analysis of student texts provides insights for more effective teaching, helping teachers to target students' more frequent and intractable errors"(166).

Using technology to encourage the development of critical literacy motivates students to look beyond their classroom environment, hence taking risks to expose their opinions to the outside world and receive criticism or feedback, which they are encouraged to turn into learning by way of assessment. Canagarajah (in Matsuda et al., 2003) argues that aspects as "ability to take risks, positive feelings towards one's local/native discourses or humility to learn through trial-and-error" (161) all constitute strategies that a multiliterate writer should possess. Warschauer (2004) further explains that readers online must make constant decisions because of the nature of multimedia (containing many modes, pages, links, etc) and that in consequence a critical judgment will have to apply to all forms of online literacy. While this statement helps us make the connection between critical literacy, multiple literacy and cyber-communication, it also reminds us, instructors, of our role in encouraging and mediating the development of critical judgment rather than imposing our standards and uniformed text modalities.

Electronic literacy

Given the explosion of computer mediated communication in today's society, it is hard to conceive a program in higher education that would not include some forms of electronic communication in their courses or learning outcomes. Nowadays most students and faculty communicate regularly via e-mail and an increasing number of instructors post their courses on websites or CMS such as *WebCT* or *Moodle*. Unfortunately, these two modalities are not enough to make our students electronically literate and to discuss with them the real meaning and modes of writing in a L2. Kern (2006) argues that the traditional meaning of literacy has evolved from simple reading and writing to such skills as electronic literacy because of the complex nature of communicating online that "requires a complexified view of literacy that goes beyond the skills of encoding and decoding texts" (195).

Electronic literacy can easily be included as of a specific outcome in any language course. In the particular case of a course where the emphasis is on writing, electronic literacy can revolve around tools for CMC. To start, we can remind our students that reading and writing go together and encourage them to base their arguments on prior research that they have found via the Internet. Learning to be critical while sifting through websites is a skill that combines well with the development of critical judgment about the type, depth and understanding the various methods of presenting information on the Internet. Information found on Wikipedia might hold different value that facts found on a personal website or even a blog or a wiki. Assessing a medium critically will not happen unless students understand all the intricacies and modalities that are specific to each electronic environment. Once learners understand the technicalities, functions and possibilities that define each medium, they will be in a better position to create their own content and eventually publish it.

Teaching life learning skills to our students is another reason to include electronic literacy as an outcome of a language course. In an ethnographic study where Warschauer (2000) looked at what actually happened while learning on-line, he explained that throughout the courses students felt that they were developing important skills that combined both technology and language. In defining the conditions that failed to classify a course as containing strong-purpose electronic literacy activities (52), he mentions for example that whenever students did not find the electronic medium appropriate or had limited understanding of the activity, they became demotivated, made minimal effort to learn and consequently did not gain valuable electronic literacy (52). In this study Warschauer reminds us of the need for electronic literacy and further states that the Internet provides potential for "purposeful, powerful use of on-line communication in language and writing class" (57) if we, instructors can actually make it happen. In other words, as many other studies have shown, the secret does not reside in the technology itself but rather in the application of this technology to learning through careful pedagogy.

Socio-cultural literacy

The relationship between critical literacy, electronic literacy and socio-cultural literacy is gaining educational magnitude whenever we (instructors) create learning environments that provide students a space for exploring their own identity within a global cyber-community. In other words, if we concentrate here on writing courses, CMC will provide students with an opportunity to present their ideas, beliefs and arguments to other learners or to native speakers and receive feedbacks, hence engaging into an authentic process of creating and editing, revising and re-submitting written materials. If applied carefully and methodologically, technology can facilitate

students' engagement in an active community of learners where they gain, through their interactions, the necessary socio-cultural literacy to negotiate their own identity and accept others.

Many studies have looked at the importance of socialization or cultural awareness within electronic communication environments. Kern (2006) argues that "identity construction and socialization are inherently intertwined with language "(198) and explains that, in the case of reading and writing via the Internet, social conventions of communications are as important as linguistic ones. In their review of multiliteracy and CALL, Conglewski and Dubravac (2006) also mention that learners should "continuously consider the cultural layers and their meaning potentiality"(50) because conventions of electronic communications can vary a lot from one culture to another. The authors add that allowing students to express their own socio-cultural beliefs and values through electronic forums, blogs or wikis and read about others while interacting with native speakers is a way to facilitate and foster multiliteracy. Exploring new currents in SLA writing research, Warschauer (in Matsuda *et al.*, 2003) also makes a correlation between cultural literacy and writing when he explains that "due to its highly public and multi-modal nature, the Web is an ideal writing medium for students to explore and develop their evolving relationship to their community, culture, and world "(164).

Case studies based on classroom writing through CMC provide ample examples of interactions where participants engage in meaningful social interactions. In one of my first applications of synchronous writing in a French advanced language course, our data showed that the highest contributors in the group provided the most social and cognitive feedback to their peers while we did not find a strong correlation between amount of writing and second language skills development (Heift and Caws, 2000). However collaborative web-based activities give an opportunity to students to reflect on the influence that socio-cultural factors may have on their writing skills and development. In addition, by providing opportunities to students to interact in meaningful, authentic situations with other native or non-native writers/speakers we support the belief that writing is a highly social form of communication whereby a message automatically issued by a person is expected to be received or read by another. Consequently writing for the sole purpose of having your instructor read your essay is diminishing the wonderful power that writing can have. Instead exploring writing as a socio-cultural activity fosters discussion of issues of readership, text constructions and modalities, differences in point of views and, in the particular case of writing on-line or publishing on the Web, issues of authorship, copyright, or netiquette.

The concept of social learning in CMC gives us an opportunity to ground our teaching practices in the Vygotskian sociocultural theo-

ry of learning. This is essential because SLA research has shown that the primary goal of learning a L2 is to be able to adapt to the social and cultural environment related to that language (e.g. Zuengler and Miller, 2006). In the case of writing in a L2, there are specific codes and modalities that learners need to understand in order to ensure that their texts will have the desired impact on their readers. The technology can enhance the integration of these socio-cultural modalities by facilitating the creation of a learning community where students write, receive and share feedbacks on-line while interacting with their peers, their instructors or with native speakers. As pointed out by Thorne (2005), "Internet technologies proposes a compelling shift in second (L2) and foreign language (FL) education, one that ideally moves learners from simulated classroom-based contexts toward actual interaction with expert speakers of the language they are studying" (3).

CMC, writing and curriculum design: moving from best practices to program articulation

Curriculum design has been the focus of several specific and recent research projects (e.g. Barrette and Paesani, 2004; Swaffar and Arens, 2005). Likewise aspects of best practices in higher education are gaining more and more recognition as a necessary research agenda (Ramsden, 2003; Biggs, 2003; Bates and Poole, 2003). In the particular case of foreign or second language curriculum, one major issue has revolved around articulating language courses within the program and realizing that the traditional division between language, literature, culture and/or linguistics courses has to be re-evaluated. With the notion of multiliteracy becoming more prominent in the SLA literature, the case for remapping the foreign/second languages curriculum makes sense. Indeed, if a course on writing is introducing other literacy than pure linguistic skills, we should also be looking at other courses in the program to define their specific outcomes and assess their impact within a system.

From planning one activity at a time, to mapping a complete course and articulating a program, we are slowly moving from particular outcomes to a broad-spectrum pedagogical picture where students are not engaging only with their peers and instructor(s) within a course, but rather where learning becomes part of a communal effort to foster negotiation of meaning across cultural boundaries and encourage the sharing of ideas. Warschauer (2005) reiterates the strong correlation between the institutional context, teachers' beliefs and the technology used in a writing course by showing that as instructors' pedagogy moves away from focusing on pure linguistic structure (reinforced pedagogically by activities such as grammar exercises or peer-editing focusing on linguistic structures) to consider writing as a communicative and social modality, the use of CMC discussion increases. This transformation is due to the teachers' beliefs that they need to facilitate the production of authentic and

practical written pieces. Focusing on these authentic tasks does not need to take us away from discussing and reflecting upon linguistics issues; in fact, it is the integration of all components within one course or one program that increase the value of linguistic modalities.

In a longitudinal study where I looked at the integration of CMC into an advanced French writing class, I adapted a research design methodology to feed the results of my data analysis directly back into the course design (Caws, 2006). Each new iteration of the course was monitored with the help of each students' set of questionnaires and their online activity log. I assessed the students' degree of engagement with the course by looking at their online writing materials, and I gathered their feedback on specific activities weighed using Likert scales and open-ended questions. In addition, the first two iterations of the course were compared to another section of the same course where the instructional strategies, materials and learning outcomes had remained identical to the one used in previous years. In general, students felt that the traditional offering of the course put to much focus on memorization and thus increased the degree of competitiveness in the class instead of encouraging a sense of collaboration and social interaction (Caws, 2005).

As recommended by Ramsden (2003), students were consulted on nearly all aspects of the course. The surveys were meant to discover how students perceived their own success within the course, whether their goals for success were in line with the course goals, and whether the learning outcomes were clear and achievable. Another focus of these evaluations was to identify areas where some degree of improvement was necessary. For instance, during the first iteration of the course (using online writing activities), students were grouped and each week a group member was named moderator and was responsible for gathering his/her partners' contributions in order to analyze them and produce a compiled version for the group to be posted in the forum. This final writing piece was then evaluated by the instructor who looked for linguistic and stylistic accuracy, and organizational and editing skills. Although each member of the group could benefit from the feedback that was provided, students felt that there were not receiving enough individual feedback. Consequently, during the subsequent iterations of the course, I provided weekly feedback by interspacing my comments in their work using editing tools in Word (see appendix A) and provided a summary of the common errors to the group. This improvement was well received by the students who felt that the visual cues helped them identify and understand their mistakes better. In addition, the weekly summary provided a welcome support to all students and gave them a feeling of security by showing them that many linguistic or stylistic inaccuracies were common to nearly all

class participants. Although this change had proved beneficial to students' inner motivation, I soon realized that too much weight was carried by the instructor in terms of meta-cognitive skills. To solve this dilemma, I introduced a peer-editing activity during the last iteration of the course. As a result students learnedt to edit their own paper by having to provide specific feedbacks to their peers online. This activity was also done in class on longer papers that students would have to share and was discussed as a grouptogether during what we called the "editing session".

By constantly asking students to reflect on their own practices and then analyzing their comments with my own perspective of the course, I have been modifying the curriculum to come closer to a course where students will feel highly motivated to practice their writing skills. Focusing on issues of literacy, the various iterations of the course can be illustrated in the following table:

Table 1: progression of a course design to integrate effective technology and multiliteracy

Original course	Writing and technology Iteration 1, 2 and 3	Writing and technology Future course (Jan 07)
Written exercises in vocabulary, grammar, translation and compositions.	Written exercises in vocabulary, grammar, translation and composition.	Communications with students via email to gather learners' goals in the course.
Students write (essays and translations) for instructors.	Essays are written for instructors.	Publications of essays on-line after peer editing and instructor editing.
Teacher-centered environment.	Collaborative translation in class including peer editing.	Wikis to encourage collaborative writing projects on subjects selected by authors (i.e. students)
Editing is done by teacher.	Weekly collaborative writing where students express their ideas on a topic related to magazine content.	
Magazine subscription to provide "authentic" material.		Magazine (*L'Actualité*) to provide socio-cultural perspectives.
	Magazine (*L'Actualité*) to provide socio-cultural perspectives for the collaborative on-line written exercises.	Extra electronic reading to extend students socio-cultural perspectives.
	Editing is shared by teacher and peers.	Tandem learning with a Francophone studentss to work on and enhance socio-cultural literacy.
	Student-centered environment to provide more classroom student engagement.	Student-centered environment to provide more classroom student engagement.
		Literacy: critical (reading and writing).
		Literacy: critical (reading, writing, peer-editing), electronic literacy (forum, e-mail, shared documents on-line, on-line grammar exercises, etc), socio-cultural (group writing, on-line discussion and peer-editing)
Literacy: reading and writing.	**Literacy:** multiple (critical, electronic, socio-cultural)	**Literacy:** critical (same), electronic (same + blogs, wikis), socio-cultural (group writing, discussion with native speakers)
Skills: focus on cognitive skills.	**Skills:** cognitive and meta-cognitive.	**Skills:** cognitive and meta-cognitive.
	CMS: WebCT	**CMS:** WebCTCMS: Moodle
		Regular course assessment by students.

This table shows that as the course evolved, students' opportunity for engagement increased. The original course had been designed with the goal to teach students how to write good argumentative essays and to understand basic stylistic differences between French and English. Consequently the course was based on a grammar translation approach. In the Fall of 2003, I started re-designing one of the sections of the course by introducing collaborative on-line writings and extra electronic resources in order to enhance students' engagement within the course and transform the class into a more student-centered environment. *WebCT* was selected as the CMS because the University of Victoria offered a good support team and because many students had already used this platform in other courses. Hence it helped reduced inhibitions. However students' first reaction towards using on-line collaborative exercises were somewhat negative and students who were not at ease with computers feared that they would be at a disadvantage compared to technophiles. After explaining the reasons for introducing a new medium in the course, students quickly warmed up to the idea and in fact those students who were the most reluctant at first, admitted that their learning curves in terms of electronic literacies had gone up very fast and they were starting to actually enjoy the concept11 For detailed evaluation of the course concepts and design, please refer to my previous articles (Caws 2005 and Caws 2006).

Changes that occurred between iterations 1, 2 and 3 were based on the data gathered throughout the semester. As explained earlier the main transformation in the course design concerned the organization of the group work on-line (see appendix B for an example of activity) going from teacher's editing of the moderator's work each week to introducing individual instructor and peer-editing. In addition more electronic resources were included in WebCT to allow students to do extra exercises on-line.

During the class, students worked in groups on translating authentic texts and further comparing their work with original translations. Also, once a week we met in the computer laboratory where students worked individually and/or in pairs on writing and peer-editing exercises. Care was taken to increase students' feeling of autonomy and to encourage them to research materials and consult their peers in order to solve their problems. My role was to moderate their contributions and ensure that they were working in the right direction by challenging their choices of words or syntactical structures for instance or by asking them to critically assess their peers' essays.

Data gathered during the three iterations of the course using CMS to moderate on-line writing activities were encouraging. Students reported a feeling of engagement and autonomy towards their own

abilities to write in French. They particularly liked having access to extra materials in the CMS and learning to edit their paper both for linguistic accuracy and for content.

The next offering of the course will be using *Moodle* instead of WebCT to facilitate students' collaboration work and allow them to easily co-create content using wikis or blogs. In addition, we will try to increase socio-cultural literacy by connecting students to Francophone students and have them create their own space to critically assess writings (see appendix B). Considering the importance of electronic publications in today's society we will extend the learning outcomes of the course to help students develop a working understanding of electronic media such as blogs and wikis, and to encourage them to learn proper techniques of electronic negotiation and communication in French including proper social conventions.

The pedagogical approach used in this course is meant to introduce socio-cultural, cognitive and constructivist theories of learning and apply results of research in higher education that support the need to engage students in active learning and in the co-construction of knowledge. In addition, inquiry based approach to learning has been shown to develop critical thinking skills and help students acquire complex concepts more effectively (Kuh *et al,* 2005; Biggs, 2003). Interestingly enough, this concept of learning through research is not new. This is exactly what Bruner (1966) promoted in *Toward a theory of instruction* when he claimed for example that "if information is to be used effectively, it must be translated into the learner's way of attempting to solve a problem"(53). Finally, in assessing a course or program such as the one presented above, we follow the premise that "good teaching is open to change; it involves constantly trying to find out what the effects of instruction are on learning, and modifying that instruction in the light of the evidence collected" (Ramsden 2003, 98).

Introducing CMC to a course or a program must be the result of sound pedagogical planning. As Bates (2000) rightly observes, strategic planning is the key to successful implementation of technology in education. Changes in a course or program should be based upon a clear vision that defines exactly the reason why technology is introduced, what outcomes it is meant to help achieve, what institutional support is needed to make the changes happen, and what instructional strategies will best foster the new learning environment. But most importantly, procedures must be put in place to assess the efficiency of these changes. It is often wiser to ease students into changes and evaluate one change at a time before planning a full program articulation. In addition, students often prefer conventional forms of teaching and need to be slowly and clearly introduced to pedagogical and educational changes so that their

motivation to take risk slowly increases (Bates, 2000). This can only be done through sound curriculum design that takes into account all the elements mentioned above.

Conclusion

Current research in CALL technologies for L2 writing supports the integration of CMC inside and outside of the classroom as a way to promote multiliteracy and the infusion of learner-centered, collaborative, and socio-cultural principles. However, while this aspect is well understood by instructors involved in SLA and technology research, many practising educators may feel overwhelmed by the urge to embed technology enhanced teaching practises. Bonk and Cunningham (1998) explain that in the case of collaborative learning for instance, teachers must be trained on how to embed grouping strategies in CSCL tools. Likewise Bates (2000) reminds us that when planning to implant technology into a course or program, clear strategic and inclusive planning is needed so that every faculty member understands the issues, goals and promises held by technology. Curriculum, instruction and learners are the three essential components of any pedagogical design or redesign and the introduction of technology into a course should be assessed in relation to these three entities.

Writing in French via CMC holds more promises than challenges. I believe that the challenges that still may lurk in the background can be resolved by careful assessment of our practices and by constant reflection and exchange with our students. The promise held by CMC is clear: to allow students to write for a purpose and to engage in personally meaningful activities. I believe that it is a goal that is worth the risks we may take to engage them on the virtual path to knowledge.

Aspects of multiliteracy, in particular the development of critical thinking, electronic literacy and socio-cultural literacy, are all aspects of learning that need to be carefully embedded in our courses. Their importance is closely related to the world we live in, to the elimination of borders, to the explosion of cyber-communication and social networking and the rapid development of a knowledge-based economy. Teaching multiliteracy will ensure that we prepare our students to be active participants in tomorrow's economy and society. Multiliteracy promises to foster life-long learning skills.

References

Barrette, C. M. and Paesani, K. (Ed.) 2004. *Language Program Articulation: Developing a Theoretical Foundation.* Boston: Thomson Higher Education.

Bates, T. 2000. *Managing Technological Change: Strategies for College and University Leaders.* San Francisco: Jossey-Bass Publishers.

Bates, A.W. and Poole, G. 2003. *Effective teaching with technology in higher education: foundations for success.* San Francisco: Jossey-Bass.

Biggs, J. 2003. *Teaching for quality learning at university.* Second edition. New York: Open University Press.

Bonk C.J., and Cunnigham, D. 1998. "Searching for learner-centered, constructivist, and sociocultural components of collaborative educational learning tools". In *Electronic collaborators: learner-centered technologies for literacy, apprenticeship, and discourse,* ed. C. J. Bonk & K. King, 25-50. Mahwah: Lawrence Erlbaum Associates.

Bonk, C. J., and King. K. (Ed.). 1998. *Electronic collaborators: learner-centered technologies for literacy, apprenticeship, and discourse.* Mahwah: Lawrence Erlbaum Associates.

Bruner, J. S. 1966. *Toward a Theory of Instruction.* 5th edition. London: Oxford University Press.

Caws, C. 2005. "Application de principes cognitivistes et constructivistes àà l'enseignement de l'écrit assisté par ordinateur: perceptions des étudiants". *ALSIC: Apprentissage des Langues et Systèèmes d'Information et de Communication* 8, 147-166.

Caws, C. 2006. "Assessing group interactions on-line: Students' perspectives". *Journal of Learning Design* 1(3), 19-28. http://www.jld.qut.edu.au/

Chanier, T. 2000. "Hypermédia, interaction et apprentissage dans des systèèmes d'information et de communication: résultats et agenda de recherche". In *Apprendre une langue dans un environnement multimédi,* ed. L. Duquette, & M. Laurier, 179-210. Outremont: Les Editions Logiques.

Duquette, L. and Dionne, J.P. 2000. "La résolution de problèème dans les exercices lacunaires en L2 et l'environnement multimédia". *In Apprendre une langue dans un environnement multimédia,* ed. L. Duquette & M. Laurier, 179-210. Outremont: Les Editions Logiques.

Felix, U. 1999. "Web-based language learning: A window to the authentic world". http://www-personal.monash.edu.au/~felix/Wcfinal.htm

Gonglwski, M. and DuBravac, S. 2006. "Mutiliteracy: Second language literacy in the multimedia environment". In *Calling on CALL: from Theory and Research to New Directions in Foreign Language Teaching*, eds. L. Ducate & N. Arnold, 43-68. San Marcos: CALICO.

Harasim, L. 1990. "Online education: an environment for collaboration and intellectual amplification". In *Online education: perspectives on a new environment*, ed. Harasim, L., 39-64. New York: Praeger.

Harasim, L., Hiltz, S.R., Teles, L. and Turoff, M. 1997. *Learning networks: A field guide to teaching and learning online.* Cambridge: MIT Press.

Heift, T. and Caws, C. 2000. "Peer feedback in synchronous writing environment: A case study in French". *Educational Technology and Society* 3(3), 208-214.

Hegelheimer, V. and Fisher, D. "Grammar, writing, and technology: A Sample technology-supported approach to teaching grammar and improving writing for ESL learners". *CALICO Journal* 23(2), 257-279.

Jamieson, J. and Chapelle, C. 1987. "Working styles on computers as evidence of second language learning strategies". *Language Learning* 37(4), 523-544.

Jones, L. "Effects of collaboration and multimedia annotations on vocabulary learning and listening comprehension". *CALICO Journal* 24(1), 33-58.

Kelm, O. 1992. "The use of synchronous computer networks in second language instruction: A preliminary report". *Foreign Language Annals* 25(5), 441-454.

Kelm, O. 1996. "The Application of computer networking in foreign language education: Focusing on principles of second language acquisition". In *Telecollaboration in foreign language learning : Proceedings of the Hawaii symposium*, ed. M. Warschauer, 19-29. Honolulu: Hawaii Second Language Teaching & Curriculum Center.

Kenning M-M. and Kenning, M.J. 1990. *Computers and language learning: Current theory and practice.* New York: Ellis Hordwood.

Kern, R. 1996. "Computer-mediated communication: Using E-Mail exchanges to explore personal histories in two cultures". In *Telecollaboration in foreign language learning : Proceedings of the Hawaii symposium*, ed. M. Warschauer, 105-121. Honolulu: Hawaii Second Language Teaching & Curriculum Center.

Kern, R., Ware, P., and Warschauer. M. 2004. "Crossing frontiers: New directions in on-line pedagogy and research". *Annual Review of Applied Linguistics* 24, 243-260.

Kern, R. 2006. "Perspectives on technology in learning an teaching languages". TESOL Quaterly40(1), 183-210.

Kuh, G. D., Kinzie, J., Schuh, J. H. Whitt, E. J., and Associates. 2005. *Student Success in College: Creating Conditions That Matter.* San Francisco: Jossey Bass.

Lehrer, R. 1993. "Authors of knowledge: Patterns of hypermedia design". *Computer as cognitive tools*, in ed. S.P. Lajoie & S.J. Derry, 197-227. Hillsdale, NJ: Lawrence Erlbaum Associates.

Matsuda, P.K., Canagarajah, A. S., Harklau, L., Hyland, K., & Warschauer, M. 2003. "Changing currents in second language writing research: A colloquium". *Journal of Second Language Writing* 12, 151-179.

Meunier, L. 2000. "La typologie des intelligences humaine et artificielle: complexité pédagogique de l'enseignement des langues étrangèeres dans un environnement multimédia". In *Apprendre une langue dans un environnement multimédia*, ed. L. Duquette & M. Laurier, 179-210. Outremont: Les Editions Logiques.

Murray, L. and Hourigan, T. 2006. "Using micropublishing to facilitate writing in the foreign language". In *Calling on CALL: from Theory and Research to New Directions in Foreign Language Teaching*, ed. L. Ducate & N. Arnold, 149-179. San Marcos: CALICO.

Pellettieri, J. 2000. "Negotiation in cyberspace: The role of *chatting* in the development of grammatical competence". In *Network-based Language Teaching*, ed. M. Warschauer & R. Kern, 59-86. Cambridge: Cambridge University Press.

Pennigton, M. 1996. *The Power of CALL.* Houston: Athelstan Publications.

Pérez, L. 2003. "Foreign language productivity in synchronous versus asynchronous computer-mediated communication". *CALICO Journal* 21(1), 89-104.

Polisca, E. 2006. "Facilitating the learning process: An Evaluation of the use and benefits of a virtual learning environment (VLE)-enhanced independent language-learning program (ILLP)". *CALICO Journal* 23(3), 499-515.

Postman, N. 1992. Technopoly: the Surrender of *Culture to Technology.* New York: Random House.

Ramsden, P. 2003. *Learning to teach in higher education.* London: Rutledge Falmer.

Thorne, S. 2005. "Pedagogical and praxiological lessons from Internet-mediated intercultural foreign language education research". In *Internet-Mediated Intercultural Foreign Language Education*, ed. J. Belz & S. Thorne, 3-30. Boston: Thomson Higher Education.

Schwienhorst, K. and Borgia, A. 2005. "Monitoring bilingualism: Pedagogical implications of the bilingual tandem analyser". *CALICO Journal*, 23(2), 349-362.

Swaffar, J. and Arens, K. 2005. *Remapping the Foreign Language Curriculum: An Approach through Multiple Literacies*. New York: The Modern Language Association of America.

Warschauer, M. 1996. "Motivational aspects of using computers for writing and communication". In *Telecollaboration in foreign language learning: Proceedings of the Hawaii symposium*, ed. M.

Warshauer, 29-46. Honolulu: Hawaii Second Language Teaching & Curriculum Center.

Warschauer, M. 2000. "On-line learning in second language classrooms: An ethnographic study". In Network-based Language Teaching, ed. M. Warschauer and R. Kern, 41-58. Cambridge: Cambridge University Press.

Warschauer, M. 2004. Technological changes and the future of CALL. New Perspectives on CALL for Second and Foreign Language Classrooms, ed. Fotos, S. and Brown, C., 15-25. Mahwah, NJ: Lawrence Erlbaum Associates.

Warschauer, M. 2005. "Sociocultural perspectives on CALL". In *CALL Research Perspectives*, eds. J. Egbert and G.M. Petrie, 41-51. Mahwah, NJ: Lawrence Earlbaum.

Zuengler, J. and Miller, E. 2006. "Cognitive and sociocultural perspectives: Two parallel SLS worlds?" *TESOL Quaterly* 40(1), 35-58.

For detailed evaluation of the course concepts and design, please refer to my previous articles (Caws 2005 and Caws 2006).

APPENDIX A: EXAMPLE OF ASSESSMENT BY INSTRUCTORS USING WORD
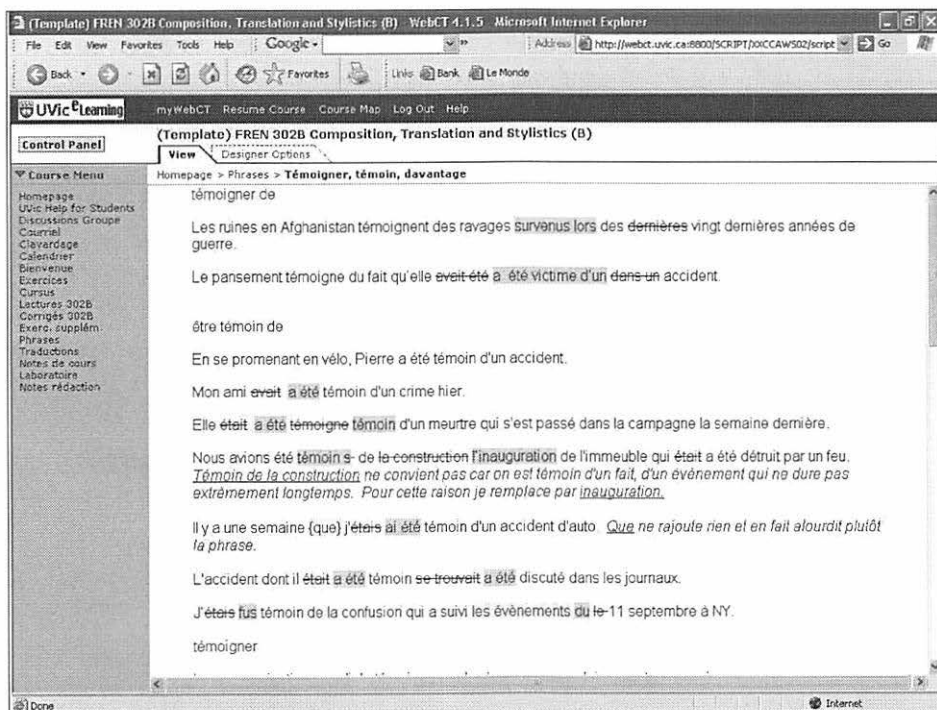
APPENDIX B: ON-LINE WRITING ACTIVITIES IN CURRENT COURSE AND FUTURE COURSE (JAN 2007)

Level of course: intermediate to advanced

Concept: reading and writing on controversial subjects to practice argumentative writing in French

Description of activity: Each student write a 200 words paragraph on a pre-selected topic and submit it to their group*. Each student reads others' postings and select one to critique according to criteria discussed in class. Once paragraph is assessed by peer, its author must edit it and respond to critique to either refute or accept assessors' suggestions. Last copy of each paragraph (including editing comments) is assessed by instructor.

	Current offering using *WebCT*	Future offering using *Moodle*
Description of Activity	See above. Activity is posted in a group forum.	See above. Additional editing and critique is provided by Francophone student. Author must select suggestions and explain choices for final copy of paragraph to be posted. Activity is posted in a blog originally created by each group to reflect topics specific to each group.
Learning outcomes	a. organize a paragraph methodically; b. edit a paragraph for linguistic and stylistic accuracy; c. evaluate ideas in peer's paragraph; d. defend own point of views ; e. master the CMS.	Same as before in addition to: a. create a virtual space to post argumentative paragraph; b. reflect on design issues;
Learning strategies	a. cognitive (critique, assess, weigh out arguments, synthesize, ...) b. meta-cognitive (self and peer assessment and editing, ...) c. affective (collaborate with peers, accept critique and offer constructive feedbacks, ...) d. procedural (on-line navigation, on-line posting and reading, ...)	Same as before. Please note that we expect to see more influence from affective strategies as students learn to publish and share their writings with Francophone students.
Assessments	• Instructor's review of individual postings • Peer-evaluation • Self-evaluation • Instructor's review of student's peer-evaluation	Same plus assessment provided by Francophone students. At the end of the session, a cumulative assessment of writings is provided by instructor to each students. Assessment focuses on both linguistic and stylistic progress as well as individual's participation in the virtual knowledge/writing community.

* Groups are formed at the beginning of the semester and students work within their group during the entire session in order to increase social bonding between members of the group.

APPENDIC C: EXAMPLE OF WEEKLY COLLABORATIVE WRITING ACTIVITY

EXERCICES D'APPLICATION POUR LE MODULE 4

Ces exercices sont toujours liés au chapitre 9 et à l'argumentation.

(Alignment of this activity with the class work)

Pour vous aider, nous vous encourageons à:

a. relire les notes sur le paragraphe dans "Le plan et le paragraphe" (disponibles dans la section Composition de WebCT);

b. vous référer à la page 204 de VBE (Le paragraphe)

OBJECTIFS:

(Goal of the activity)

Travail 1: rédiger un paragraphe argumentatif de 200 mots et s'auto-analyser.

Travail 2: évaluer le texte d'un camarade.

TRAVAIL 1: Vous rédigerez un paragraphe argumentatif dans lequel vous exprimerez clairement votre opinion et dans lequel vous montrerez de façon explicite les différentes parties de votre paragraphe (auto-analyse):

a. soit en développant l'autre idée principale de votre plan (module 2)

(Description of writing activity)

b. soit en commentant l'un des propos suivants:

1. *Pour réussir dans la vie, il faut savoir prendre des risques;*

2. *Il faut travailler pour vivre et non vivre pour le travail;*

(Special additional notes to relate activity to class work)

3. *Le raisonnement freine l'imagination*

N.B. Vous soulignerez les expressions qui vous sont inspirées de VBE. Pour l'auto-analyse, vous montrerez [entre crochets] les différentes parties qui constitue la structure de votre paragraphe (par exemple: idée principale, explication, illustration, concession, etc....). Pour cela, vous vous inspirerez du chapitre 9 et de la page 204 dans VBE.

N'oubliez pas de poster votre travail dans votre GROUPE. :) 200 mots environ.

(Where to post the work)

TRAVAIL 2: Choisissez le texte d'un (1) de vos camarades de groupe et lisez-le attentivement. Vous devez choisir le texte d'une personne qui n'a pas encore été évaluée. (Quand vous postez votre évaluation, dans SUBJECT, écrivez: évaluation *Nom de l'auteur(e) (Par exemple: Evaluation Catherine, etc...)*

a. Répondez-lui en expliquant les raisons de votre accord ou de votre désaccord. Pensez à varier les expressions. 100 mots environ.

b. Faites une évaluation du paragraphe en suivant le modèle suivant. LA FICHE D'ÉVALUATION EST DISPONIBLE DANS LA SECTION *COMPOSITION* DE WEBCT.

EVALUATION DU PARAGRAPHE

(Description of activity 2 with editing scheme provided below.)

• La structure du paragraphe vous semble logique	Oui Non Plus ou moins
• L'idée prinncipale est bien énoncée au début du paragraphe	Oui Non Plus ou moins
• L'idée principale est bien développée (avec explication, ou illustration, mise en parallèle, etc)	Oui Non Plus ou moins
• Le paragraphe est convaincant	Oui Non Plus ou moins
• Le paragraphe est argumentatif (exprime clairement une opinion)	Oui Non Plus ou moins
• L'opinion de l'auteur(e) est justifiée	Oui Non Plus ou moins
• Le lexique est précis (vérifier chose/ gens/ faire/ avoir/ il y a)	Oui Non Plus ou moins
• Le texte contient une bonne variété d'adjectifs et d'adverbes	Oui Non Plus ou moins
• Le texte ne contient pas de banalités (clichés, stéréotypes,...)	Oui Non Plus ou moins
• Toutes les idées contenues dans le texte sont en rapport direct avec le sujet	Oui Non Plus ou moins
• Les idées s'enchaînent au moyen de mots charnières précis et variés	Oui Non Plus ou moins

Bonne lecture et bonne écriture!