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Language Choice and Global Learning Networks: The Pitfall of *Lingua Franca* Approaches to Classroom Telecomputing

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Abstract:

How can other languages be used in conjunction with English to further intercultural and multilingual learning when teachers and students participate in computer-based global learning networks? Two portraits are presented of multilingual activities in the *Orillas* and I*EARN learning networks, and are discussed as examples of the principal modalities of communication employed in networking projects between distant classes. Next, an important historical precedent --the social controversy which accompanied the introduction of telephone technology at the end of the last century-- is examined in terms of its implications for language choice in contemporary classroom telecomputing projects. Finally, recommendations are offered to guide decision making concerning the role of language choice in promoting collaborative critical inquiry.

1. Introduction

The question of which language (or what mix of languages) to employ as the "coin of the realm" when teachers and students participate in computer-based global learning networks is too often answered, without hesitation or reflection, with a single alternative: English. After all, is not English the pre-eminent world language and, moreover, the foremost language of science and technology in today's world? How could other languages, alone or jointly, possibly offer as broad a range of learning possibilities as does English? This article will explore some principles --drawn from actual networking experiences-- upon which educators can make more informed

decisions as to whether the learning and language acquisition goals of their students are best served by choosing English as the sole medium of communication for computer networking. It seeks to answer the question: Under what conditions can other languages be used in conjunction with English in an effort to further intercultural and multilingual learning?

I will begin by offering two portraits of classrooms involved in computer-based global learning networks. The first short portrait is set within the context of the *Orillas* multilingual "team-teaching" network project while the second, longer portrait describes activities coordinated by I*EARN and other confederated networks belonging to the Association of Progressive Computing.

De Orilla a Orilla (Spanish for "from Shore to Shore") is an international teacher-researcher project that has concentrated on documenting --through serious research involving teachers-- promising practices for intercultural learning over global learning networks. Since 1985, *Orillas* has been an international clearinghouse for establishing long-distance team-teaching partnerships between pairs or groups of teachers separated by distance. *Orillas* team-teaching partnerships are multilingual (in French, Haitian, English, Japanese, Portuguese, and Spanish) and multinational (with schools in Puerto Rico, Quebec, and the United States, but also in English-speaking Canada, Costa Rica, France, Japan, and Mexico).

The collaborating teachers make use of electronic mail and computer-based conferencing to plan and implement comparative learning projects between their distant partner classes. Such parallel projects include dual community surveys, joint math and science investigations, contrastive geography projects, and comparative oral history and folklore studies (Figueroa, Sayers & Brown, 1990; Sayers, 1993). Often teachers in *Orillas* electronically publish their students' collaborative work over the Internet.

Research on *Orillas* has focused on those networking activities which effect social change, validating traditional forms of knowledge in the schools, anti-racist education, and linguistic human rights, while allowing teachers to explore the classroom practicalities of teaching based on collaborative critical inquiry (Cummins & Sayers, in press). For example, this research has studied projects (using both qualitative and quantitative research designs) that have raised self-esteem among Puerto Rican students in the U.S. involved in partner class activities with schools in Puerto Rico (Sayers, 1991 & 1994), as well as projects that promote intergenerational literacy learning and parental involvement in global learning networks (Sayers & Brown, 1994). DeVillar and Faltis in *Computers and Cultural Diversity* judged *Orillas* "certainly one of the more, if not the most, innovative and pedagogically complete computer-supported writing projects involving students across distances" (1991, p. 116).

I*EARN stands for the International Education and Resource Network, and is a member of The Association for Progressive Computing (APC), a confederation of computer networks concerned with peace, environmental, conflict resolution, health and public interest issues. According to its founder Peter Copen, "the most fundamental purpose of I*EARN is to have the students learn that they can make a difference in the world" (personal communication, January 31, 1995). I*EARN now includes hundreds of schools in over 20 countries, including: Argentina, Australia, Brazil, Britain, Canada, China, Costa Rica, Finland, Indonesia, Hungary, Israel, Japan, Jordan, Kenya, Korea, Mexico, Netherlands, New Zealand, Spain, the United States, and the newly-independent states of the former USSR and the former Yugoslavia.

Like *Orillas*, I*EARN attempts to maintain a balance of schools inside and outside North America in order to insure intercultural diversity in its networking activities. Both projects are among the few major global learning networks that have an official "language policy" encouraging participants to write in languages other than English -- based on the assumption that when schools receive communications in other languages, it will serve as a stimulus for exploring local linguistic and cultural resources to assist in translation and in understanding other cultural realities. Perhaps the most important factor in the success of the communities of

intercultural learning created by these two networks is their insistence on a process of democratic, decentralized decision-making in both day-to-day work and long-term planning. Both networks recognize that far too often in the past educational technology has been dominated by a patronizing "we know best" attitude by some North Americans when working with educators from other nations [\(1\)](#).

In the pages that follow I will offer two portraits of multilingual networking activities with occurred in the *Orillas* and I*EARN learning networks. These portraits are then discussed as examples of the principal modalities of communication employed in computer networking projects. Next, an overview is provided of an important historical precedent --the introduction of telephone technology at the end of the last century-- with implications for contemporary networking technology and global learning networks. Finally, recommendations are offered to guide policy makers' and teachers' decision making regarding the role of language choice in attaining learning goals.

2. A portrait of a partnership between classes in Maine and Quebec City[\(2\)](#)

In the 1992-93 school year, two classrooms --one in northern Maine, close to the border between the United States and Canada, and the other in the capital of Canada's Quebec Province, Quebec City-- were among over a hundred classes that participated in "partner class projects" through their involvement with the *Orillas* multilingual computer network. Both classes were composed of upper elementary grade school children, and neither group had used computer learning networks previously. Here the similarities between the classes ended. The class in northern Maine was composed of students from francophone background whose teacher was interested in her pupils recovering the cultural and linguistic heritage of their parents and grandparents through contact with speakers of French in Quebec. The teacher of the class in Quebec City, on the other hand, was pleased at the opportunity to sharpen her students' English skills by working on curricular projects with native speakers in the United States.

With these language learning goals in mind, the two teachers proposed a bilingual language policy to guide their interschool exchanges: the Maine class would attempt to use French whenever possible, but could always resort to English to express complex ideas, while the Quebecois would employ French for most of their written exchanges, practicing their English whenever they felt comfortable doing so. With this language policy in place, the classes began their work on parallel learning projects in a way that encouraged the acquisition of a new language in both settings.

For their first joint activity, neither group of students knew the exact identities of their distant counterparts; the classes exchanged "mystery cultural packages" containing soil samples, photos and examples of local flora and fauna, individual and class photographs without identifying information, and other clues by means of which the partner class might deduce the location of their faraway colleagues. This informal "ice-breaking" activity was followed by a more formal joint student journalism project which resulted in a student magazine at year's end that both classes had worked hard to make fully bilingual --writing, critiquing, revising and translating -- in French and English for each and every student author.

Unlike many classes in the *Orillas* global learning network, these classes in two different countries had the advantage of being located relatively close to each other -- a mere three hour school bus ride apart, in an area of the world where such distances seem trivial. Thus, at the end of the school year, the teachers made the travel arrangements for the Maine class to visit Quebec City as a culminating activity. Imagine the experience of the American students as they met their partner class for the first time face-to-face. They learned first hand that the distant classmates with whom they had collaborated in French and in English for nearly a year, and upon whom they looked as competent and highly-proficient models for learning French as a second language,

were deaf. Indeed, their first language was LSQ (*Langue de Signe Quebecois*" or French Canadian Sign Language) and their second language --a language these profoundly deaf students had never heard-- was French.

3. Contact with the Veli Joze Refugee Camp in Savudrija, Croatia [\(3\)](#)

In January of 1993, a group of volunteer relief workers from Catalonia belonging to a pacifist organization called MOC (Moviment d'Objectors de Consciencia), were set to travel to Veli Joze, a refugee camp located in Savudrija, Croatia that had been set up by the Croatian military to house Bosnian refugees. Before they left, Narcis Vives, an educator from Barcelona, heard of their trip and contacted Miquel Colomer of the MOC. Vives asked if the Catalan volunteers would be interested in taking a donated computer and a modem to Croatia to install in one of the makeshift "schools" the Croats permitted to operate, with little material or human support, for the 500 children living inside Veli Joze. Colomer agreed and set up a computer station in the refugee camp. There, a boy named Sanel Cekik wrote a message about the impact of the war on himself and his family, and sent it out over the modem to schools around the world.

The challenge of translating Sanel's message, which was written in Bosanski (a dialect of Serbo-Croatian) to a world language more familiar to others --and thus translatable to other languages-- was resolved quickly by educators in Barcelona. They conjectured that by sending out a call for a translator of Bosanski over a number of networks where students were using global telecommunications that some student somewhere would come from an immigrant family background where this dialect was still spoken at home.

They had guessed correctly. A student from Cold Spring Harbor Public High School in New York, Tanya Lehmann, was taking part in several projects through the I*EARN global learning network, and she and her family understood Bosanski. She wrote back to the educators in Barcelona on February 22, 1993:

I was involved in translating Sanel's letter because I am working on a project dealing with the abuses of human rights occurring around the world. ... We are very interested in the events taking place in the former Yugoslavia, we are very excited that we were of some help to you. I will be very happy to translate your letter to Sanel. I will send a copy of the translation to you and Narcis.

-Tanya Lehmann (in Vives, personal communication, September 9, 1994).

Here is the translation of Sanel Cekik's letter that Tanya sent to Narcis Vives in Barcelona:

The war slowly but surely came to our city. After some time, it happened; the Serbs took over the city and as everywhere they started with their terrible torture. My incident is next. One night in my apartment where unfortunately was my father, came four Serb soldiers. First they beat him. (My father is 60 yrs old). Then they made horrible wounds on his back, on his forehead, his hands with razor blades. The next day when I came and saw him in this condition, I was very shaken. This picture is going to forever stay in my mind as the pictures of many other people and children who were killed by the Serbs. A message to the whole world from me and all the children, my friends, and from all other refugees. Thank you for all the help. Stop this damned war!!

-Sanel Cekik (in Vives, personal communication, September 9, 1994).

The English translation of Sanel's letter reached hundreds of schools around the world because

Narcis posted it on a variety of global computer learning networks, including the APC networks, FrEdMail, and the European Schools Project (ESP), where it was translated into many other languages. The reaction was overwhelming. Students everywhere began sending electronic mail messages to the refugee camp. Here are some of their reactions in English, though "e-mail" was sent in many other languages as well:

Dear Sanel,

I am an Australian girl, shocked and repulsed by the present state you and your family have been put in. The brutality and lack of mercy shown by the Serbian soldiers has sickened and disturbed us. Most people my age know little of the tragedies you face but we would like to broaden the international knowledge of the war. Personally I don't know the whole story behind the war and I can't honestly say I can relate to what's happening but I do sympathize and would like to do all in my power to help. I think the world should be more aware of the atrocities others face. As an Australian I can write to the government to increase public awareness, and perhaps the United Nations. We (our class) just want to tell you that people do know what's happening, you are not alone ...

Dear Sanel,

I am 13 years old. I live in Duluth, Minnesota. ... I am really sorry that this war is going on and I hope it gets over soon. I am not just writing this because my teacher told me to, I am writing because I want to. Some people say that this war is just going to go away, but I don't think that it is going to. In my thoughts I think that this war is wrong. People who want to fight don't need guns or knives, what they need to learn is how to fight with words.

Dear Sanel,

I come from Australia. Our class read your letter and I felt upset on how the Serbian soldiers could do something so horrible. Our class is writing to the Australian Government to try to end the war. My dad was in the Vietnam war and he got wounded and my dad doesn't talk about it much but you were there when the Serbian soldiers attacked your dad so you're in a different situation ... (in Vives, personal communication, September 9, 1994).

With the flood of international concern pouring into his camp, the Croatian Army director decided to pull the plug on the computer the children had been using to communicate with youth around the world.

But the Catalan teachers and volunteers knew that the awareness that Sanel's letter had brought to so many could not be allowed to vanish. They tried to come up with creative ways to perpetuate the interest and commitment which had been mobilized in classrooms in so many countries. Narcis Vives posted this electronic message to students and teachers:

Now the camp's director doesn't allow telecommunications being used there because he loses control about the information leaving the camp. Anyway, we will try to use other ways. Every twenty days some volunteers leave Barcelona, Catalonia, Spain to Veli Joze, Croatia with a lot of messages and drawings. The Bosnian children also send us hand-written messages and drawings which we will share with you if you are interested (personal communication, September 9, 1994).

Though electronic mail was no longer possible, Vives was offering to serve as a conduit for the concern which Sanel's message had awakened in classrooms around the world. Mail --electronic and otherwise-- began pouring in, including drawings, photographs, videotapes, class projects, and school materials.

Then the whole team of Catalan volunteers and teachers organized yet another way to harness technology to amplify the interest that Sanel's letter had generated. They called for an International Day of Solidarity with Veli Joze on February 26, 1994, the highlight of which would be a simultaneous videophone conference call to include children at Veli Joze with students from two cities in New York and 8 schools in Barcelona. Preparations for the Day of Solidarity were complex. In order to expand the number of schools around the world that could participate in the activities, in the weeks before Vives had sent out a request for drawings and messages of solidarity --written in any language-- to be faxed to Barcelona no later than two days before the Day of Solidarity. In the hectic days preceding the activities, Vives wrote:

I have received messages and drawings related to Veli Joze from Australia, Israel, Chile, Russia, Denmark, Germany, Holland, Croatia and different states in the United States: New York, Georgia, Massachusetts, Texas, Minnesota, Washington, Florida, Ohio (personal communication, September 9, 1994).

Two days before, early in the morning of February 24, 1994, two Catalan teachers and a professional clown left Barcelona with a videophone, and all the drawings and messages of solidarity that had arrived from around the world -- and a donated computer to reconnect the refugee camp school to the Internet. Their destination was the Veli Joze Refugee Camp in Savudrija, Croatia. There they would set up an Art Exhibit and prepare the necessary equipment for the videophone conference call and the computer teleconference that would take place on February 26th, the Day of Solidarity.

That day was filled with activities, some of which were technology-mediated, and others simply human. In Veli Joze, the teachers plugged in their videophone --a slow-scan video camera embedded in a standard telephone receiver designed to project photos of speakers and simple texts during phone conversations-- and teachers and students at 10 schools in New York and Barcelona saw and spoke with Sanel Cekic himself for the first time. During this videophone conference, Tanya Lehmann's skills as a fledgling interpreter of Bosanski once again provided the link, in Long Island, between Sanel and students around the world. Other teachers and children at Veli Joze answered questions from their international interlocutors and supporters. After the videophone conference call, the Catalan volunteers used the donated computer and modem to conduct a live computer teleconference in which the Veli Joze students could communicate simultaneously with students in 6 different schools by typing messages that would be read in Catalonia.

But activities of solidarity were not limited to technology-mediated communication. Vives writes:

[In Catalunya, students] could see some slides from Veli Joze and together in the playground of the school we sang Bob Dylan's song "Blowing in the wind" with more than 40 guitars and flutes being played by children from different schools.

In Veli Joze at this same time a Catalan clown called Tortell Poltrona was acting for the children. Later, they could also see an exhibition of drawings and writings ...

Now the solidarity day has gone, but not our solidarity. We will look for the best ways to help. They certainly need money, food... but in my opinion what they need the most is love, a lot of people sending them messages, drawings, asking them to do

things, motivating them. We still don't know if we will have telecommunication facilities (the Catalan teachers are negotiating with the camp authorities this fact). Anyway, every 20 days a group of Catalan volunteers go to and come from Veli Joze. They can send and bring messages (in Vives, personal communication, September 9, 1994).

Vives was correct; the Day of Solidarity would continue to reverberate in the Veli Joze refugee camp. The Catalan Tortell Poltrona, one of the clowns who was at Veli Joze that day, wrote --in Catalan-- of his experience at Veli Joze and its aftermath. There was so much interest in his remarks that they were later translated into several languages by his colleagues in Catalunya. Here is the English translation:

With my performance watched by over 700 people, most of them children, I could determine the value of a clown in such a situation where humour is the medicine and laughter the cure.

In the camps, most of the inhabitants are children, and most of them are orphans. A high rate of psychological and physical tension exists among the people, but the need to laugh never dies, and so, by creating smiles instead of tears, even for only a short period, we can raise the life standard in these depressing camps.

This was not so easy for me, as a performer, since the audience was racked with bitter and tragic memories. But once I had one smile, the laughter followed quickly, as though the sun had broken through the storm.

Today, medicine and science recognize more and more the therapeutic importance of laughter. If laughter is so vital for society under normal conditions, its necessity in conflict situations is obvious.

After this experience we arrived in Barcelona with the decision to organize expeditions of artists to such under-privileged children, not only in war-torn Yugoslavia, but in all situations where children have lost their rights to be children (in Vives, personal communication, January 31, 1995).

In response to the misery engendered by ethnic strife, Poltrona went on to organize a non-profit organization of fine artists and performing artists designed to raise money for refugee camps in war-torn Bosnia-Herzegovina, and to visit the camps regularly. To date there have been twenty-three trips by different performers to dozens of camps; moreover, they have sent contingents to Pakistan, Brazil and several countries in North Africa, and most recently Chiapas in Mexico. The arts and technology-mediated communication have joined common cause. Narcis Vives summed up their impact:

The group of teachers that give support to *Clowns without Borders* and other Non-Governmental Organizations like *Musicians for Peace* who have recently joined the project want to continue giving support to the clowns' and musicians' trips, and would like to try once again sending computers and modems to the refugees camps. In fact, we have identified 32 Bosnian refugee camps in Croatia. Three of them would welcome telecommunication facilities to all the world. We are now trying to raise the money to get these computers and modems (personal communication, September 9, 1994).

Sanel Cekik's electronic mail message unleashed a chain reaction of social action around the

world in response to the violence of ethnic strife in the former Yugoslavia, introducing into the vocabulary of countless nations horrific concepts as repugnant (and as historically resonant) as "ethnic cleansing." Global learning networks brought this new reality home to students and teachers around the world, themselves from many linguistic and cultural backgrounds, providing them opportunities for confronting intolerance.

4. Two common modalities of computer networking

These portraits exemplify networking activities which would have been impossible had a single language been chosen as the *lingua franca* of exchange. They also illustrate the two most common modalities of global learning networks, each of which raises different issues affecting language choice:

- (a) class-to-class partnerships, and
- (b) multi-class networking projects.

Class-to-class partnerships

The partnership between the classes in Maine and Quebec City highlights several important elements of "binary" collaborations and their considerable potential for promoting second language acquisition and intercultural learning. In class-to-class partnerships teachers have more occasions to shape the exchange in ways which suit the particular learning needs of their students. Successful partnerships seek to take full advantage of two key elements of networked collaborations which at first would seem antithetical to language acquisition and intercultural learning: distance and asynchronous communication.

Distance, in the context of binary exchanges, creates the possibility of collaboration with an unknown but knowable audience, principally through written communication. The inevitable cultural differences which exist between distant groups require clarity of written communication in disclosing local realities. Distance also provides multiple occasions for receiving questions from distant interlocutors concerning these written communications, as well as for querying their culturally-bound, "home-grown" versions of reality. In the Maine/Quebec City partnership, geographic and cultural distances stimulated a vigorous year-long communication that focused on diverse local realities. Even though the students shared a common francophone heritage, it was nevertheless true that for one group this heritage was a living reality while for the other it was a cultural and linguistic tradition in danger of fading into another kind of distance, that of a distant memory. In a sense, communication over geographic and cultural distance had created a context for cultural rescue work (for other examples of "cross-cultural" communication between students from the same culture, see Sayers 1991, 1994).

Although an electronic message may arrive on the other side of the globe seconds after it is sent, "e-mail" is asynchronous. Asynchronicity --communication that does not occur in "real time"-- introduces a time lag that permits language learners to reflect on their responses, rarely possible in face-to-face communication. They can take advantage of the calm of "offline" composition to refine their electronic mail responses. Since partner classes are working on parallel learning projects, both lexicon and the language structures in which vocabulary items appear are constantly being recycled, creating a helpful redundancy that in turn promotes the kind of "comprehensible input" (Krashen, 1982) which must precede "comprehensible output" (Swain, 1986) for learners of a new language.

Asynchronicity allows second language learners the extra time they need to elaborate and polish written texts --all the while based on "models" of native speakers of the target language--

constantly seeking (and relying heavily) upon assistance from their local language and cultural resources who may be teachers, peers, and community members (Sayers, 1986).

In the Maine/Quebec City exchange, the deaf students took perhaps the fullest imaginable advantage of the "extra time" provided by asynchronicity to compose and refine their written communications to their U.S. counterparts with extensive assistance from their local language and cultural "experts," that is, their hearing teachers, parents and the community in which they lived. Indeed, they --as language learners-- in turn became the models for "native-speaker" input for their distant classmates in Maine. It is this potential for engagement with local human and material resources that is especially relevant for overcoming the language barriers to successful global networking, since often there are bilingual and even bicultural collaborators close to home who can become partners in intercultural learning.

Multi-class networking projects

World-wide telecommunications also permits another modality of collaboration that can facilitate second language acquisition and intercultural learning in multilingual contexts: multi-class networking projects. Where class-to-class partnerships encourage language learners to tap into their local linguistic and cultural resources, multi-class networking projects seek to cast as wide a net as possible over the information network in its search for expert informants. In this modality, it is assumed that any cultural and linguistic expertise which cannot be found locally --yet which is essential for successfully pursuing a given learning activity-- will surely be available somewhere over the Internet, and therefore can be shared with every one of the many participating classes.

Multi-class learning projects seek to confront the challenges posed for effective multilingual/intercultural learning by invoking an extensive breadth of available human resources; class-to-class partnerships, on the other hand, engage these challenges differently, relying instead on the intensive depth of locally available expertise. The Veli Joze Refugee Camp project exemplifies the focus on world-wide access to a broad range of human linguistic and cultural resources which is typical of multi-class networking projects. In an "English only" networking project, Sanel Cekik's message would have been lost. A clear voice expressing the human toll of ethnic strife not only would have gone unheard but would never have generated the chain reaction of events that led to the Day of Solidarity and beyond.

5. Fear of telephones: The social controversy surrounding the earliest interactive "proto-network"

North American educators have, for the most part, treated pedagogical innovations ahistorically, as though each "new" approach represented a revolutionary and clean break with past practices, rather than standing in an evolutionary relationship to the achievements (and missteps) of previous generations of educators. Nowhere is this tendency more apparent than in the area of educational technology, documented amply in Larry Cuban's excellent historical survey of educational technology, *Teachers and machines: The classroom use of technology since 1920* (1986). The following section seeks to augment this countervailing perspective by considering an important historical precedent --the social controversy surrounding the introduction of telephonic communication at the turn of the last century-- a subject relevant to our discussion of language choice in the context of global learning networks.

Indeed, as we prepare to enter a new century in an era of new communications technologies, perhaps the most revealing lessons provided by history are those surrounding the appearance of the telephone and the shock waves it occasioned in the social order at the end of the nineteenth century. For of all earlier communications technologies, telephony was the first to

introduce into *fin de siecle* homes and businesses the potential of instantaneous two-way communications. Not surprisingly, today's computer networking, made possible by the linking of two widely available technologies --personal computers and the world-wide infrastructure of telephone communications-- raises similar issues a hundred years later. And these are issues that have to do not only with mere technology but with the perception that this technology could pose a challenge to the political and economic status quo.

During the last quarter of the nineteenth century, the rate of technological change relating to language and communication became truly vertiginous, paralleling today's explosion of computing and networking technologies. In quick succession, a string of what Carolyn Marvin, in her excellent study *When Old Technologies were New* (1990), has termed "proto-mass media" were introduced: the telephone, phonographic recording, the radio and the cinema. Each of these technologies would later play a major role in the development of mass communications in the twentieth century. Marvin examines in exhaustive detail the writings which appeared in the popular press and in professional journals on these nascent mass media forms. Not surprisingly, her portrait of the spirit of those times is startlingly parallel to our own.

One hundred years ago, the telephone was an invention that inspired both admiration and fear. On the one hand, it was cheered as ushering in a new era of world unity in which everyone --anywhere-- would be connected through voice signals. On the other hand, telephony seemed to many a frighteningly too-new medium for two-way communication, and one which generated discomfiting confusion among responsible citizenry interested in safeguarding cherished traditions of "Western Civilization." As Marvin notes, "the early history of electric media is less the evolution of technical efficiencies in communication than a series of arenas for negotiating issues crucial to the conduct of social life; among them, who is inside and outside, who may speak, who may not, and who has authority and may be believed" (p. 4).

Telephone technology held the promise --and the threat-- of permitting two-way communication between people from different cultures located anywhere on the planet, and on a basis dangerously approaching equal terms. Marvin details the concern and confusion which greeted the introduction of telephones, and in terms which evoke the partisan debates of our own times on the place of multiculturalism in schools:

Chaotic and creative experiments ... attempted to reduce and simplify a world of expanding cultural variety to something more familiar and less threatening. That impulse fixed on one-way communication from familiar cultural, social, and geographic perimeters as a preferred strategy to two-way exchange, with its greater presumption of equality and risks of unpredictable confrontation. ... New kinds of encounters collided with old ways of determining trust and reliability, and with old notions about the world and one's place in it: about the relation of men and women, rich and poor, black and white, European and non-European, experts and publics (pp. 5-6).

Indeed, Marvin notes, "the prospect of media that made senders and receivers proximate and seemed to eliminate many of the barriers that kept them safely separated excited profound xenophobic anxiety" (pp. 200-201).

According to Marvin, the utopian technologists of that time --like today's-- trumpeted in the popular press the dawning of an epoch with enormous potential for cross-cultural understanding and world peace in organs of the popular press. However, a less sanguine view was evident in professional journals. If barriers to international communication were to come tumbling down in the face of telephone technology, Marvin documented the widespread concern that the new terms of intercultural discourse should be negotiated in ways which favored a particular monocultural world view.

And this world view was seen as decidedly monolingual. Marvin comments,

"instantaneous communication augured a universal language, usually thought to be English, and ... this distinctly Anglophile solution reflected a conviction that the provincialism of English-speaking peoples was the sensibility of the world" (p. 193). Marvin summarizes her critical review of nineteenth century popular and professional literature on the impact of the telephone with this chilling passage:

The capacity to reach out to the Other seemed rarely to involve any obligation to behave as a guest in the Other's domain, to learn or appreciate the Other's customs, to speak his [or her] language, to share his [or her] victories and disappointments, or to change as a result of any encounter with him [or her]. For their part, peripheral Others were expected to do all these things, to communicate on terms provided by the center, and to converse with representatives of European civilization without saying much back in the course of the conversation about their own unique cultures (p. 195).

Thus, the early history of telephone technology is particularly relevant to our discussion here in light of recent developments in computer networking that repeat many features of the ideological skirmishes which accompanied the introduction of the telephone at the turn of the twentieth century. Among modern computer learning networks (as noted above), *Orillas* and I*EARN are the among the few educational projects that have explicit "language policies" which encourage other than English-language participation in all their worldwide learning projects. Indeed, some other learning networks have explicitly banned the use of languages other than English as the medium of exchange, and this in spite of the obvious potential of global learning networks to promote genuine intercultural learning and multilingual skills.

In this sense, little appears to have changed between the turn of the last century and the coming of the next as societies confront what seem to them as threatening changes, provoked by potential dialogues between cultures and across differences. Given the bureaucratic, Taylorist mindset which has prevailed in schools from the latter part of the nineteenth century to the present, it is hardly surprising that schools should mirror the larger society in their fright over "two-way" or interactive communications technologies, giving preference to "one-way" media such as broadcasting or closed-circuit radio and television and film, and more recently, computers, whose interactivity --far from being harnessed to encourage intercultural learning-- has too often been restricted to that of a "surrogate teachers" which dispense pre-packaged lessons.

6. Policy implications for language choice in educational networking

There can be no doubt that monolingual participation in computer networking activities will continue to play an important role in global learning networks. Single-language involvement in networking activities (whether in English or any other language) offers the obvious benefit of intensive input in the target language, focused on a specific shared curricular project. However, the purpose of this concluding section is to offer policy makers and educators a series of principles which can guide decision-making concerning language choice so that multilingual networking activities are not overlooked as contexts for target language development and for increased intercultural awareness.

Establish team-teaching partnerships locally with colleagues in bilingual education and foreign language education that enhance your distance learning partnerships

The best resource available for bilingual networking may be found right down the hall or just across town in a local bilingual education or foreign language classroom. Of course, the

learning objectives that you, the subject-area educator or content-based ESL teacher, have outlined for your class will differ from your colleagues who are teachers in bilingual and foreign language education. The goal of any Spanish/English bilingual teacher, for example, is to use her students' mother tongue as a springboard for acquiring English fluency. A Spanish teacher would seek to develop his students' foreign language proficiency. Yet in the context of a bilingual networking activity, your learning goals can be complemented by those of your colleagues whose responsibility is language development. Bilingual and foreign language teachers can assist subject-area educators in unlocking a door to a world of learning activities that native English-speaking students could never explore on their own.

Another group of educators represent a largely untapped resource for this type of team-teaching: teachers in private after-school language classes sponsored by local communities for the children of recent immigrants. These classes are often given under the auspices and in the facilities of mosques, temples and churches.

Rely on human interaction rather than technological "quick fixes" such as translation software

Often educators assume that the most straightforward approach to multilingual networking is the utilization of "translation software." A more realistic assessment of the state-of-the-art in translation programs is less optimistic. All the considerable resources of the Central Intelligence Agency and the Department of Defense over a period of twenty years resulted in the decision to abandon machine translation in the late 1980's. The memory and processing speed of desktop computers has not advanced sufficiently in the intervening years to permit reasonably accurate translation in any but the most restricted and specialized subject-matter contexts.

Even if effective translation software were available, we as educators would still need to ask ourselves whether and under what conditions machine translation should be employed to advance particular language learning goals. For there will always be some aspects of intercultural learning that are better accomplished through human interaction --which of course in the future will be increasingly supported and amplified by computer-based prosthetics-- rather than by relying on computing machines to automate multilingual exchanges. Among the alternatives to automatic translation which we have previously discussed are tapping into local language and cultural resources (especially parents and students, but also community organizations) and developing partnerships with local foreign language teachers. Another key option available to teachers is the cautious use of today's admittedly imperfect translation software which can be employed to generate a rough idea of an electronic message's content, with a view toward isolating key passages for fuller examination through the good offices of local community members who are both bilingual and bicultural.

Keep content-area learning goals foremost when deciding on language choice

Content-based language learning has attracted considerable research attention in second language acquisition circles (see, for example, Mohan 1986, 1990). This approach to language learning assumes that students acquire a language not by studying its structure but rather through employing the new language in rigorous, sophisticated ways with a view toward learning a specific content-area. Teachers must balance subject-matter learning requirements with sound second language development.

Often, global learning networks offer a richly motivating context for content-area learning; yet this content may be communicated in another language. If teachers' content-area learning goals are concerned with environmental issues, then especially attractive networking projects would include schools where, for example, endangered species and threatened rain forests are a daily reality -- even if those contacts require reliance on languages other than

English. Similarly, there are many countries where science instruction is far advanced as compared with similar curricula offered in North America.

Subject-area teachers as well as teachers of content-based ESL would do well to explore local linguistic and cultural resources in order to benefit from contact with teachers and students from other countries where subject-matter instruction outpaces curricular norms in this hemisphere. By tapping into local language and cultural resources in the school and community, teachers may take fuller advantage of the Internet as a nexus for classroom activity which promotes content-area learning while enhancing language development in any language.

Take advantage of asynchronicity to allow language learners to assume "expert" roles

The deaf students from Quebec City --themselves learners of French as a second language-- could assume the role of "native-language" informants for the students in Maine, owing to the asynchronicity of telecomputing and the greater time available for reflection, revision and capitalizing on assistance from local speakers of French. We, as teachers, need to rethink our assumptions concerning language learners in the context of emerging global learning networks. Obviously, novice language learners --regardless of their second language fluency in face-to-face situations-- can and should become involved in sophisticated telecommunications projects with distant native speakers of the target language.

Taking this logic a strategic step further, it follows, for example, that English language learners in a second language learning situation (that is, within an English-speaking country) can serve as "native speaker" models for English language learners in a foreign language setting. Because the ESL students have greater access to native speakers of English --and since asynchronous telecomputing permits them the luxury of enough time to benefit from this assistance and improve the writings they send via electronic mail-- even novice ESL students can provide high-quality English language input in their long-distance collaborations with other students, while themselves benefiting by assuming high-status "expert" roles.

Consider mixed-media to supplement written text exchanges over networks

Comprehensible input (Krashen, 1982) and comprehensible output (Swain 1985) are as key to intercultural learning as they are to second language acquisition. The exchange of meaningful and purposeful context-embedded communications can only work to promote both second language acquisition and intercultural learning. At present, computer-based learning activities rely heavily on the exchange of written messages, an extremely context-reduced medium which severely restricts the contextual clues (gestures, facial expressions, situational cues, and so on) upon which language learners depend to comprehend complex linguistic input.

One important way of compensating for this deficiency in contextual clues is to incorporate a variety of audiovisual media as integral parts of distance learning activities. For example, a joint learning activity with a distant partner class might involve the exchange of student-produced "slide/tape shows." Using electronic mail to coordinate their work, students at two distant sites plan and shoot a sequence of slides that depict key community sites and cultural activities. Local students then author, ideally in pairs or small groups, a brief narration that describes each slide; authors then record on audiotape their narrations, following each reading with a signal beep of some sort. The numbered slides, audiotape and a written transcript can then be sent to the partner class via national postal services. Electronic mail can then be utilized by both classes to discuss and compare their slide/tape shows. Video clips, audiotape recording and photography --especially when accessible universally through WorldWideWeb graphical browsers on the Internet-- can all enrich the mix of contextual clues available for multilingual intercultural learning.

Conclusion

Parents, students, educators and policy-makers must learn how to cultivate linguistic and cultural resources both locally and globally. If a specific class-to-class networking project makes sense for students --yet the language of exchange is other than English-- it is worthwhile exploring all available human and material resources before ruling out participation in the project. Sometimes, especially in the case of world languages such as Chinese, French and Spanish, students and their parents will be --and should be-- the first resources to investigate for intercultural learning projects. Many communities have cultural societies and organizations which would be pleased to refer teachers to linguistic "experts" and cultural "advisors" for global learning activities.

Moreover, with the growing interest in educational telecomputing, there are literally hundreds of fascinating multi-class networking projects being announced every month on the Internet by teachers all over the globe. Before eliminating those projects which employ a mix of languages, teachers may consider contacting the project's organizer to determine whether or not translation can be arranged by contacting bilingual participants in the project. Often the global reach of a networking project can supplement the surprisingly rich local resources which are available for intercultural, multilingual learning and critical collaborative inquiry.

Endnotes

1. Both I*EARN and *Orillas* take advantage of computer networking to spread day-to-day decision-making responsibilities far and wide around the world. Yet the two networks recognize the value of face-to-face contacts in solidifying their communities of learning. The three co-founders of *Orillas*, Enid Figueroa of the University of Puerto Rico, Kristin Brown of the University of San Francisco, and Dennis Sayers of the Department of Teaching and Learning of New York University have worked together for over a decade to assure that every country and culture participating in *Orillas* has a voice in shaping the direction of this multilingual network. *Orillas* has organized numerous two-week Summer Institutes where teachers are invited to Puerto Rico to work with colleagues in designing and testing collaborative networking projects. Similarly, I*EARN is governed by the I*EARN Assembly composed of one representative from each of its Centers around the world, which in turn elects a 5-person Executive Committee that serves as I*EARN's Board of Directors. Each of the members of the Executive Committee is from a different country, thus assuring that one cultural perspective never dominates decision-making. Contact information for these networks:

(a) International Education and Resource Network (I*EARN) 345 Kear Street Yorktown Heights, NY 10598 Phone: 914/962-5864 Email:

(b) *Orillas: De Orilla a Orilla* (Spanish for "From Shore to Shore"). Email the Co-Directors: Kristin Brown , Enid Figueroa , or Dennis Sayers .

Other networks that promote plurilingual learning are:

(c) European School Projects, at risc@esp.educ.uva.nl. ESP has sites on the WorldWideWeb at the URL <http://www.educ.uva.nl/ESP> and on gopher at the URL <gopher://gopher.educ.uva.nl>.

(d) Intercultural Email Classroom Connections Lists: "IECC" is intended for teachers seeking partner classrooms for international and cross-cultural electronic mail exchanges.

This clearinghouse LISTSERV is not for discussion or for people seeking individual penpals.

Subscriptions: iecc-request@stolaf.edu E-mail these words: subscribe iecc yourfirstname yourlastname Participation: iecc@stolaf.edu

Once you have subscribed, IECC welcomes requests for a K-12 partner classroom. In your message of introduction, use a descriptive subject, for example:

"Seeking Spanish-speaking 9th-grade classroom" or "Looking for 12 6th-grade students in Pakistan"

In the body of your message, be sure to include information about your classroom and preferences for a partner classroom, including:

- who you are, where you are
- how many students you have
- how many students you would like to connect with
- when you would like to connect
- other special interests
- desired country/culture (area within a country if appropriate)
- desired language

The IECC Gopher (updated daily and searchable) can be reached at gopher://gopher.stolaf.edu and its World Wide Web address is <http://www.stolaf.edu/network/iecc.html>.

(e) Global SchoolNet Foundation offers an entire range of networking activities and continues to define the philosophy, design, culture and content of educational networking on the Internet. Its goals include "the development of a low cost, community-based, distributed electronic data communications network owned by public agencies such as schools, libraries, cities, and other community service organizations, with the goal of providing all citizens equal and free or low- cost access to the basic tools of information access, retrieval, and transmission that are so important in our age of information." Global SchoolNet Foundation has collected important data on the effective use of translation software for intercultural learning. For more information, contact .

2. The following portraits are drawn from research conducted for the forthcoming volume by Jim Cummins and Dennis Sayers, *Brave new schools: Challenging cultural illiteracy through global learning networks* from St. Martin's Press.
3. The events outlined in this portrait are depicted in the videotape "A Global Gateway for Kids," produced by the Southwest Educational Development Laboratory under a contract with the Office of Educational Research and Improvement of the US Department of Education. Ordering information available from SEDL, 211 East 7th Street, Austin, Texas 78701, USA.

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