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The World Wide Web in Education: Issues Related to Cross-Cultural Communication and Interaction

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Introduction: Does the Web Bring Cross-Cultural Communication and Interaction to Education?

The universality of the World Wide Web as a platform for communication and interaction relates certainly to its technical aspects and apparently to many characteristics of its available functionalities. Throughout the world, educationally oriented World Wide Web sites have been created, and traffic among these sites includes persons from countries around the globe. Does this mean, however, that the communication and interaction supported by those sites will have the same meaning and level of appropriateness to persons from different cultures and backgrounds? Will the World Wide Web make possible a breakthrough in cross-cultural communication and interaction in learning settings?

In this chapter we will briefly identify some of the key issues that have confronted the cross-cultural portability of educational software and the adaptation of courses for trans-border delivery, and suggest implications from these issues with respect to the cross-cultural use of a World Wide Web site for educational communication and interaction. We will present considerations that we feel to be especially important, briefly reflect upon these, and offer some preliminary suggestions for guidelines for World Wide Web sites to increase their potential for cross-cultural communication and interaction. We will conclude with a set of choices for the cross-cultural application of World Wide Web environments, each of which gives a different answer to the question: *Will the World Wide Web bring a new level of cross-cultural communication and interaction to education?*

World Wide Web Sites and Cross-Cultural Use: Some Basic Categories

In order to draw lessons for the World Wide Web from earlier experiences with the cross-cultural portability of education software and trans-border courses, we first need some definitions and categories. "Culture" can be defined in many ways (see, for example, Roblyer, Dozier-Henry, & Burnette, 1996); for our purposes we take it to mean the language, behaviors, and norms that characterize a group. "Language" includes not only its most obvious meaning, but also the usage variations within a language that set one group apart from another. Such variations relate to level and choice of vocabulary, and also to more subtle variations in tone and

style of language use. Behaviors and norms relate to the sorts of interactions that are expected in a given group, as well as those which would make group members uncomfortable. Thus, "cross-cultural use of educational World Wide Web sites" is not only a phenomenon relating to political borders, language groups, and geographical distances; there can be different cultures in a state or district or even in an institution which can also block communication and interaction among those within them.

With regard to educational World Wide Web sites, we can define two basic categories relevant to cross-cultural applications:

- *Category 1.* Sites made for one context and its culture, but visited by those from other contexts and cultures.
- *Category 2.* Sites made specifically for cross-cultural participation.

Many educational sites on the World Wide Web are in the first of these categories; sites put up by a school, a department, a regional support center, for example, which are targeted for local use but, because of the nature of the World Wide Web and the pervasiveness of its search engines, are found and visited by many outside of the target group. The second category also has many exemplars, including sites representing educational network services which focus on cross-cultural (or cross-national) pairings of schools; sites for institutions serving students in widespread locations; and (particularly in Europe) sites representing multi-national educational partnerships and programs. Such sites may vary widely in the extent to which they reflect cross-cultural differences in their design and maintenance.

Lessons from Experience

Categories 1 and 2 have their parallels in terms of educational software and courses for trans-border student populations. Educational software portability has been studied for more than two decades, generally in the context of increasing the chance that a software product made for one context and culture will be used in others. In 1987 and 1988, for example, the Commission of the European Communities brought together educational software experts from throughout Europe to find paths towards more-portable educational software and the creation of a common market for these adaptable programs. Among the barriers confronting these goals were:

- Problems of human language and vocabulary.
- Problems of differences in educational cultures and environments.
- Teaching-style differences.
- Problems relating to the ergonomics of different human languages in terms of their display and handling by computers.
- Technical problems relating to platforms, operating systems, and the lack of standard interfaces and module libraries. (Ballini & Poly, 1988)

In the ensuing years, problems relating to technical standardization and to the technical handling of some aspects of language translation have been substantially reduced, but problems relating to pedagogical and cultural issues, as well as distribution bottlenecks, continue, resulting in relatively little development of a cross-cultural market for educational software made originally for a particular local context, analogous to Category 1 World Wide Web sites (Collis, 1996). The cost and complexity of bringing multi-national educational software develop-

ment teams together and sustaining their cooperation has been a natural limit on Category 2 software development. Only a handful of (English-language) software development companies, with multi-national distribution networks, have succeeded in marketing CD-ROMs of multimedia resource materials on a trans-border basis, with titles of a generic nature (famous paintings, famous composers, etc.).

Based on various analyses of factors affecting the cross-cultural portability of educational software (see, for example, Aston & Dolden, 1994), guidelines have emerged not only for software design but also for course design for cross-cultural participation via communication technologies. In Europe, for example, the "TeleScopia Project" has focused on the adaptation of courses for trans-European delivery, including via World Wide Web sites, and generated guidelines such as the following:

- ***Communication and interaction.*** In cross-cultural contexts, do not assume that more communication and interaction is better than less, especially when such activities cause burdens for the participants.
- ***Language.*** When communication and interaction are used, be particularly sensitive to cultural differences in terms of communication styles (i.e., who should initiate comments or questions, who should moderate, the extent to which disagreement or debate is expected, who should decide to terminate a line of communication, the level of formality considered appropriate in interaction between instructor and students, etc.).
- ***Content.*** Choose course content where the cross-cultural aspects are either of minimal relevance (thus highly specialized professional courses or courses relating to a common trans-border phenomenon such as learning to use the Internet) or courses where the cross-cultural aspects are integral to the content (i.e., learning a foreign language, international business issues, etc.).
- ***Representation form.*** Consider the use of visualizations to replace or supplement text, but be alert to cultural differences in the acceptability and interpretability of various aspects of visualization.

  (For a longer list of guidelines, and a discussion, see Collis, Parisi, & Ligorio, 1996.)

These experiences have direct relevance to the consideration of educational World Wide Web sites and their cross-cultural potential.

Implications for Educational World Wide Web Sites

The World Wide Web has profoundly expanded the opportunities for cross-cultural communication and interaction through its remarkable trans-border range and acceptance. Now, through a single, standardized user interface, locally developed learning resources not only can be made more conveniently accessible to their target audiences, but at the same time available to anyone else who can access the World Wide Web. Thus, in theory, all Category 1 resources on the World Wide Web are candidates for cross-cultural use. Similarly, more and more educational sites will be made with cross-cultural participants in mind from the start, partly because the World Wide Web now makes widespread access feasible, and partly because the World Wide Web is itself stimulating cross-cultural exchanges through its worldwide attractiveness. Thus, both educational and commercial motivations are accelerating the appearance of "Category 2" World Wide Web sites.

Given this potential, what are important implications for World Wide Web sites in terms of their cross-cultural use? Based on the previous experience with educational software and

trans-border courses, and our own current work (see the Notes at the end of this chapter), we offer the following ideas:

Interaction and Communication

We must be alert to the fact that there are substantial cross-cultural differences in interaction and communication beyond the actual words being said. Any organizational setting develops its own culture, with norms and expectations relating to aspects such as the degree of formalism and centrality in communication patterns (Woolliams & Gee, 1992). A hyperlinked environment emphasizing user choice may not be consistent with a hierarchically oriented culture. Hyperlinking may also not be optimal for persons with certain learning styles or needs, such as field-dependent persons and those with strong task-orientations. Such characteristics are partially a function of the individual him- or herself, but are also influenced by the broader cultural setting (Sellin & Winters, 1996). However, there appears to be little specific research done on instructional design for hyperlinked learning environments for cross-cultural use. Cross-cultural teams of instructional design theorists are not much known. Perhaps the World Wide Web will stimulate this.

Preliminary guidelines for World Wide Web sites? For Category 1 sites, it seems best to try to fit local norms for tone and style of communication and interaction. Those who "visit" the sites from outside should be respectful of these local norms, and as much as possible try to understand and work within them. Appropriateness in terms of how people address and ask requests of each other is interpreted differently in different cultures; we must not assume that our own interpretation should be appreciated elsewhere.

For Category 2 sites, a careful analysis must be done from the start as to the degree, type and extent of communication and interaction that is most appropriate for the participants. Well-structured communication, moderated by someone with appropriate standing for all participants, may be best for those who for cultural as well as other reasons do not wish to participate in wide-ranging or informal discussions. Also, the increasing accessibility of audio and video real-time communication via the World Wide Web may not be of benefit to cross-cultural sites because of tone-and-style discrepancies in communication norms, as much as because of time-zone differences.

Language

Language is a critical issue. Should we recommend that Category 1 World Wide Web sites remain in their local languages and Category 2 World Wide Web sites be in a globally accepted common language? For Category 1, would this mean that only those who speak the local language can benefit from the local resources? Automatic language translation is becoming available for World Wide Web sites (for a limited set of languages) but will not be more than automatic in terms of the richer and more-subtle aspects of language and thus not likely to satisfy educational requirements. For Category 2 sites, what should the common language be? English? Chinese? Because English is now, for socio-economic reasons, the dominant language on the World Wide Web does not mean that this should be taken for granted, or even that it will remain the case a decade from now. Will the World Wide Web in time accelerate English as the international *lingua franca*, or will it force monolingual English speakers to finally have to work in a second language; for example, Chinese?

Preliminary guidelines for World Wide Web sites? We suggest for Category 1 sites to perhaps have two levels of access, the major one for local use, making full and rich use of local language and situations; and a second, summary level for cross-cultural use, where language impact is reduced as much as possible to facilitate translation, and where a subset of links is selected that leads to materials with possible cross-cultural interest. For Category 2 sites, we

suggest working with partners where a common agreement on language can be established or for whom multiple-language versions of at least some parts of the World Wide Web site can be supported. Do not make the assumption that an English-language site will be adequate for all those who can read English. It might be best if those who write World Wide Web sites in English for cross-cultural access are multilingual themselves, as they are likely to be more sensitive to sentence construction and word order and choice than monolingual native-English speakers. Sites for cross-cultural use should be pilot-tested on persons with different mother tongues, perhaps being cross-translated at least two times and adapted based on any difficulties in understanding that occur (Itzkan, 1993).

Content and Purpose

For Category 1 sites, content and purpose should be shaped by local needs; if these happen to also be of use to the outside world, the World Wide Web can make it possible for the resources to be shared. However, in the future, it may be wise for local sites to operate as intranets rather than being on the Internet itself, both to reduce some of the overflow of World Wide Web use, but also to remove the need to be concerned about outside visitors, if these are not particularly wanted (as may be the case in terms of a site to support a particular course, where admission to the course is not being offered via the Internet). For Category 2 sites, the determination of content and purpose is much more critical. What can and should be done via a cross-cultural site? Perhaps the guidelines from the TeleScopia Project, mentioned earlier with respect to trans-border course participation, are most pertinent: Choose either a focus on "culturally neutral" resources or on resources that make explicit and rich use of the cross-cultural potentiality of the World Wide Web.

Preliminary guidelines for World Wide Web sites? If a local site is unlikely to be of much value to outside visitors, consider mounting the site on an intranet (with links to the Internet World Wide Web), so that in time, educational materials on the World Wide Web itself are predominantly oriented toward at least cross-cultural sharing. Or, alternatively, make only a "sampler" available for cross-cultural visitors. For Category 2 sites developed with cross-cultural uses as a goal, choose, as much as possible, focuses that either transcend or exploit cross-cultural differences. Topics that transcend cultures include those that are (relatively) culturally neutral (such as elementary electric circuits) and also those that develop a built-in culture of their own (such as the Internet and the World Wide Web, reflecting what might be called "technology's built-in cultural bias," Roblyer, Dozier-Henry, & Burnette, 1996). In addition, topics that exploit cross-cultural differences should reflect this exploitation in the design and conduct of the World Wide Web site, to avoid the site being dominated by the language or worldview of any one of the site participants.

Visualizations

To overcome some of the problems of language for cross-culturally oriented World Wide Web sites, the use of visualizations seems a good response. As World Wide Web sites continually improve in their multimedia capabilities (and as local network access slowly catches up to these improvements), it may seem a self-evident guideline that sites become more and more visual. Bradsher (1996), for example, tells how Japanese students got around language problems in getting to know students in other lands by creating World Wide Web pages showing photos of food choices for a balanced meal in their country. The evolution of graphic user interfaces, the worldwide acceptance of the icons used in the Windows environment and now in World Wide Web browsers, suggests that visualizations will become part of an international *lingua franca* for educational World Wide Web sites. But, as usual, such solutions are never as simple as they might appear. We know that the design of user interfaces for international use

requires the same cultural sensitivity as the design of communication and interaction, (Nielsen, 1990), and that the interpretability and acceptability of visualizations, as well as the use of visualizations themselves in learning settings, is subject to considerable cross-cultural variation.

Preliminary guidelines for World Wide Web sites? For sites in Category 1, specific links to a carefully selected subset of visual resources may be a strategy for offering accessibility to outside visitors, an excellent way to share some local experiences and settings without dealing directly with the language issue. For Category 2 sites, however, visuals should be carefully chosen to fit the common culture of the site participants, even if this results in a site that looks "boring" to those outside of the partnership or perhaps one that makes little use of visuals at all, the reverse.

Three Answers: Is the World Wide Web Leading to an Increase in Cross-Cultural Communication and Interaction?

On one hand, the answer to this question appears to be an unqualified "yes." The World Wide Web is vibrant with cross-cultural activity (although mainly in the Category 1 context rather than that of Category 2 because of the extra effort needed to organize cross-cultural partnerships or distribution settings). This would seem to imply that there is no doubt that the World Wide Web is leading to an increase in cross-cultural communication and interaction. On the other hand, looking more closely and reflecting on our past experience with other forms of cross-cultural activities in education, we see three different answers to our question:

Superficial

One answer is that we will be seeing superficial rather than meaningful cross-cultural experiences. Many more Category 1 sites will be available, which visitors may drop into and which may broaden awareness of cross-cultural differences for those who visit. However, such awareness is likely to be superficial, especially with language and curriculum differences serving as barriers to any deep understanding of the resources and persons available. Similarly, Category 2 sites made "for the world" will be mounted, especially by those wishing to sell their presence internationally, but without careful analysis of cross-cultural needs and differences. The World Wide Web equivalent of the international superficiality of advertisements for Coca-Cola, Marlboro cigarettes, and Benetton fashions will be the result: A kind of cross-cultural communication, to be sure, but educationally superficial.

Homogeneous

Another answer may be that a sincere effort will be made to offer worthwhile educational opportunities to persons outside of one's own setting, but the homogeneous nature of this home setting will not be questioned. For example, a native-English speaking site author may never question the assumption that his or her site be offered to the world in English. A site produced by an institution or a publisher will not question the norms and approach of the sponsoring organization, but will see the World Wide Web as a way to bring these to a broader market. The motivation in the homogeneous answer is not that of the superficial cola commercial, but of the missionary; through this new channel we can bring our insights and beliefs to those who were not fortunate enough before to be able to take advantage of them. The homogeneous answer, when it occurs as a well-meaning parochialism, is perhaps more dangerous to real cross-cultural understanding than the superficial answer.

Multi-Cultural

Here, an awareness of and respect for the "deep structures" of different cultures (Roblyer, Dozier-Henry, & Burnette, 1996), including of one's own, serves as a base and filter for what a site developer assumes the outside world wants and needs. Given this awareness, the World Wide Web makes possible interaction and communication in ways that can make use of trans-cultural technologies and at the same time try to respect local cultures and institutions. It is here that we feel the most promising "answer" to the contribution of the World Wide Web to cross-cultural understanding can occur. But like all most-promising answers, it is also the most challenging to achieve, requiring both a multicultural worldview and a large dose of wisdom. The four sets of considerations we discussed earlier, with respect to care for culturally different expectations for communication and interaction, for sensitivity with respect to language assumptions, for content that is either culture-transcendent or culture-saturated, and for increased utilization of appropriate visualizations, appear to be both common sensical and reinforced by previous experiences with cross-cultural acceptance of other forms of learning materials.

Thus, of the three possible answers to the question "Will the World Wide Web increase cross-cultural communication and interaction in education?" we suspect that the superficial answer is already the most common and will lead to a dissipation of the potential of the World Wide Web for cross-cultural understanding, while the homogeneous may be the most dangerous, leading to a sort of well-meaning colonization of the World Wide Web around the norms of the culture most favored to dominate access. The multi-cultural is what we hope to contribute to.

For examples associated with our own work, see:

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TechNet (1996). *TechNet Finland WWW-Services.* Dipoli Lifelong Learning Institute. Helsinki, Finland: Helsinki University of Technology (http://www.dipoli.hut.fi/org/TechNet/TNF/telecom/EuroProprog.html); see material related to the EuroPro and ECOLE projects.

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