

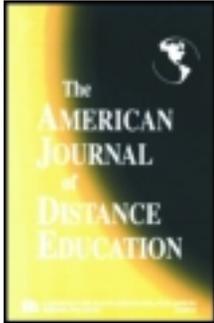
This article was downloaded by: [University of New Mexico]

On: 11 November 2011, At: 15:51

Publisher: Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954

Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



American Journal of Distance Education

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/hajd20>

Synchronous and asynchronous interactions of bilingual Hispanic pre- and in-service teachers in distance learning

Luisa Lara ^a, Richard Howell ^b, Jeronimo Dominguez ^c & José Navarro ^d

^a Doctoral student at The Ohio State University, 121 Ramsayer Hall, 29 W. Woodruff, Columbus, OH, 43210 E-mail: Lara.9@osu.edu

^b Special Assistant to the Vice Provost in The Extended University, The University of New Mexico, 1634 University Boulevard, Albuquerque, NM, 87131 E-mail: rhowell@unm.edu

^c Vice Provost of The Extended University, The University of New Mexico, 1634 University Boulevard, Albuquerque, NM, 87131 E-mail: dominguz@unm.edu

^d Director of the Department of Psychology, University of Cadiz, 11519 Puerto Real, Cadiz, Spain E-mail: jose.navarro@uca.es

Available online: 24 Sep 2009

To cite this article: Luisa Lara, Richard Howell, Jeronimo Dominguez & José Navarro (2001): Synchronous and asynchronous interactions of bilingual Hispanic pre- and in-service teachers in distance learning, *American Journal of Distance Education*, 15:3, 50-67

To link to this article: <http://dx.doi.org/10.1080/08923640109527093>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.tandfonline.com/page/terms-and-conditions>

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae, and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand, or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

Synchronous and Asynchronous Interactions of Bilingual Hispanic Pre- and In-Service Teachers in Distance Learning

Luisa Lara, Richard Howell,
Jeronimo Dominguez, and José Navarro

Abstract

This study investigated differences in online written interactions of bilingual Hispanic pre- and in-service teachers across two types of online discussion groups: synchronous and asynchronous. Participants were exposed to a shortened version of a wholly online special education course and participated in instructional activities as well as synchronous and asynchronous discussion groups over a six-week period. The research used both an alternating treatment design to gather quantitative data, and interviews and questionnaires for qualitative data. The results support the contention that synchronous discussion group interactions are an important feature of successful online courses with Hispanic students.

Introduction

As distance education evolves into a global phenomenon, an important area of interest involves its use by various cultural and linguistic groups. A specific concern is whether instructional-design features exist that should be incorporated into online course designs to accommodate the different learning styles of diverse learners. A primary concern is the use of asynchronous and/or synchronous discussion and chat options for interactions between and among students and faculty. It has been proposed that such interactions entail a number of advantages over traditional classroom interactions including more flexible time arrangements, continuous and automatic archiving, and the ability to reach a more diverse student body (Guri-Rosenblit 1999).

Research in telecommunications suggests that certain social inequalities, including gender, class, and ethnicity, present a challenge to students in traditional classroom interactions. However, the situation may be mediated in part through new forms of networked communication

including e-mail, chat rooms, and Web courses (Cole 1996; Hollenbeck 1998; Vásquez 1993). Vásquez (1993) discussed the difficulties of developing high-level literacy skills within a multicultural society that induce excellence and support the diversity of the US. Through online interactions, her team was able to create a learning environment that reproduced students' cultural and linguistic experiences and encouraged them to perform in a wider arena. She also noted that teachers cannot create such environments in isolation; therefore, global telecommunication projects may be a major help for these teachers.

Fabos and Young (1999) explain, and later dispute, that many authors cite an advantage of telecommunication exchanges as tools for cultural understanding within an "invisible" online environment. In other words, it is possible that the virtual educational environment could be more comfortable and equitable for participants because many of the traditional social cues are covert. Lai (1996) proposes that

In face-to-face interactions such as in a small group discussion it is often difficult for people to have an equal chance to contribute, especially when the interacting persons are of unequal status. However, in online interactions it is more likely that people will pay more attention to the content of the message, thus creating an environment of equal opportunity and reciprocity in roles. (3)

Another aspect of the discourse regarding telecommunication exchanges is the importance of establishing a distant peer community to increase the relevance of writing assignments and projects. The behavior of this audience is apparently different from that found in traditional writing situations. This is significant because these telecommunication audiences can initiate and respond both synchronously and asynchronously. Rather than employing a self-contained, noninteractive text that is finite, e-mail text can be interactive and evoke a more fluid and dynamic conversation. This telecommunication environment may provide a more individualized and yet collaborative learning process (Gonzalez-Bueno 1998; Wang 1994; Baron 1984).

Several authors have expressed concerns regarding the overwhelmingly optimistic predictions of telecommunications applications in public education classrooms (Fabos and Young 1999; Kenway 1998; McCormack 1998; Streibel 1988). Some of the limitations cited in the literature include the lack of advanced hardware and software in rural

communities, the cost of connecting to the Internet by students in impoverished settings, the lack of well-trained teachers, and the potential for cultural hegemony implicit in international exchanges. In summarizing their extensive review of telecommunications research activities, Fabos and Young (1999) state,

...many of these expected benefits are inconclusive, overly optimistic, and even contradictory. Like much scholarship on educational technology, many researchers are quick to enter discussions about skill, social, and economic benefits without considering the scholarly, historical, or industrial context of their claims. (249)

Research on synchronous and asynchronous interactions has provided some guidance regarding optimal conditions for use and some limitations of each communication event. For instance, in a study of the effects of synchronous e-mail use by students learning French as a foreign language, Kern (1995) found that the overall quantity of language produced by the online students was greater than that of a control group. However, he noted that the enhanced communications group also devoted less attention to accuracy in grammar and showed less coherence and continuity in the discussion. A growing body of work on the use of e-mail as a means of asynchronous communication within foreign language education has produced some compelling findings:

- E-mail interactions, compared to paper-and-pencil assignments, produced (a) greater amounts of language, (b) more variety of topics and language functions, (c) higher levels of language accuracy, (d) more similarity with oral language, (e) more student-initiated interactions, and (f) more personal and expressive language use (Gonzalez-Bueno 1998).
- Electronic dialogue journals, when produced using e-mail, elicited (a) more writing per session than did paper-and-pencil groups, (b) more questions, (c) more language functions, and (d) adoption of a more conversational tone in language (Wang 1994).
- One of the possible social effects of computer-mediated communication is a heightened degree of participation over face-to-face communication. In general, e-mail users volunteered more complete and accurate information and showed more creativity and honesty in their interactions (Baron 1984).

Research in the application of synchronous interactions within virtual learning environments is best summed up by Lister et al. (1999), who state that, "In general, we strongly believe that real time, synchronous interaction is of central importance in most distance learning courses and that implementation of the IDL (Interactive Distance Learning) cycle in the development of asynchronous content is the foundation of effective online learning" (5-6). Even though the program that Lister and his colleagues described at the Rensselaer Polytechnic Institute used an 80/20 formula (80% asynchronous content and 20% synchronous interaction), these researchers are advocates of the inseparability of the components as part of a well-designed course. They found that synchronous learning events helped keep students on task and better able to meet deadlines, helped build a sense of community and teamwork, allowed students to receive immediate feedback from their instructors, and improved overall retention rates in the majority of their courses. An interesting study conducted by Olsen, Olsen, and Meader (1995) compared interaction features of distant work groups to face-to-face work groups engaged in a product-development activity. The primary variables manipulated for the distant work groups were an audio-only condition, a video-plus-audio condition, and a control condition with a face-to-face work group. The findings indicated that

[w]ith high quality communication (both audio and video) and a shared workspace tool, distributed groups can produce work that is indistinguishable in quality from face-to-face groups using the same workspace tool. Taking the video away from distributed groups leads to poorer quality designs when compared to face-to-face groups. The audio-only groups were marginally different from the video/audio groups. Thus high quality group intellectual work is possible under distributed conditions, and video appears to add some value. (9)

Extrapolating these findings to the text-based environment, student work group productivity may benefit from combining synchronous written expression with video imagery over the Internet. Therefore, synchronous interaction may be an essential component of course designs intended for use in online educational coursework.

Variations in social and cultural contexts and the diversity found in contemporary classrooms pose challenges for the development of appropriate curriculum and instruction. It is necessary for teachers to be

prepared to analyze situations, solve problems, and make decisions in a thoughtful and reflective manner. McIntyre and Tlusty (1995) posited that many teacher education programs have lacked both the curricular organization and the instructional technology needed to encourage pre-service teachers to be reflective. Their research showed that e-mail was a useful educational strategy for developing reflectivity and for the improvement of the interactions between student teachers, cooperating teachers, and faculty. Another advantage identified in this study was the possibility of having participants interact in a substantive and meaningful way although they were located in various locations far from the university. Another important finding was the relationship between technological literacy and the participants' online interactions. Some participants reported being unfamiliar with the technology, and these feelings became a topic for their interactions. However, this situation changed with the continuous flow of messages, after which the participants started to have more confidence and the sense of confusion decreased considerably, almost disappearing by the end of the study. Tharp and Gallimore (1991) assert that

... for the development of thinking skills—the ability to form, express, and exchange ideas in speech and writing—the critical form of assisting learners is dialogue—the questioning and sharing of ideas and knowledge that happen in conversation. (4)

They refer to this phenomenon as an “instructional conversation,” and believe that classrooms and schools are transformed into a “community of learners” when students and teachers reduce the distance between themselves through construction (and co-construction) of lessons based on a common understanding of participants' ideas and experiences.

Two important factors should be considered by teachers and administrators when designing educational strategies for Hispanic students: (1) Almost 50% of Hispanics do not graduate from high school; and (2) Hispanics, as a group, are very young and will constitute the largest percentage of growth within the school-age population for at least the next decade (De la Rosa and Maw 1991). In fact, Hispanics are now the largest minority group in the United States (US Census 2000). However, relatively low access by minorities to the Internet remains a serious national problem, with the disparity between whites and Latino households six percentage points larger in the final (third) annual study than

those reported in the first annual study of the “digital divide” by the US Department of Commerce (1999). This study found that, overall, Latino households are only about one-third as likely as households of Asian/Pacific Islander descent, and two-fifths as likely as white households, to have Internet access. However, distance education is an online application that actually is being utilized more frequently by minorities than by white Americans, and more so by those living in rural areas than in urban areas. About 37% of white Americans reported taking online courses in 1997; by comparison, 50.3% of Latinos, 47% of American Indians/Eskimos/Aleuts, and 46.3% of African-Americans were learning online. About 45% of Americans living in rural areas reported taking online distance courses compared with 36% from central cities and urban areas.

Consequently, educational institutions should work closely with Hispanics and consider their needs when creating mutual educational agenda. This is especially important since most Hispanics must exist between two cultures, a Hispanic world at home and a European/American world at school or work. Several authors have recommended implementing the following strategies for instructional practices for teachers of Hispanics students (Arreaga-Mayer and Perdomo-Rivera 1996; Jimenez and Gersten 1999). First, it is considered essential to initially establish rapport with the students. Second, teachers should be encouraged to create an atmosphere of trust and respect among students and teachers. Finally, the students need to be encouraged to have a strong sense of involvement and be shown that their achievements matter to their teachers. Foster (1993) explained that, in order to facilitate the educational performance of minority students, it is not essential to share ethnicity, but it is essential to share and respect cultural and social norms. Educators need to find ways to engage the community and parents in the life of the schools. Sayers’ (1995) research in multicultural/multilingual networking projects indicates that the following principles be considered in the design of multicultural and multilingual instructional events (14):

- a. Establish team-teaching partnerships locally with colleagues in bilingual education and foreign language education that enhance distance learning partnerships.
- b. Rely on human interaction rather than technological “quick fixes” such as translation software.

- c. Keep content-area learning goals foremost when deciding on language choice.
- d. Take advantage of asynchronicity to allow language learners to assume “expert” roles.
- e. Consider mixed media to supplement written text exchanges over networks.

This study was conducted to determine whether there were qualitative and quantitative differences in the synchronous and asynchronous interactions of bilingual Hispanic pre- and in-service teachers. It specifically investigated differences in interaction frequency and style, including the preferences that participants expressed regarding the two forms of interaction.

Method

Participants

The participants in this study were a self-selected sample of six US and international pre- or in-service teachers (Table 1) that included students in the field of education. They were recruited through contacts with professors of education and psychology from Spain and Venezuela, and finally with Hispanic-American students from a large midwestern university. All of the participants were of Hispanic background—either they came to the course from a Hispanic country (one teacher was from Spain and two were from Venezuela) or they were originally from a Hispanic minority group and had established permanent residency in the US (three preservice participants were from Puerto Rico). All participants were bilingual, with Spanish as their native language and English their secondary language. The study group consisted of two males and four females.

Table 1. Demographic Table of Participants

Status	Country of Origin		
	United States	Venezuela	Spain
Preservice Teachers	3	-	-
In-Service Teachers	-	2	1

Setting and Researcher

This study took place within the context of a Web-based learning environment, with no physical contact between, or among, instructor and students. The researcher was a student in the special education program and was completing her master's thesis study. She was a native speaker of Spanish from Venezuela and was provided guidance and support during the course of the research by professors from the US and Spain.

Definition of Independent Variables

- The asynchronous discussion group engaged in an ongoing, instructor-moderated online discussion in which the students were given a topic to discuss with an established time period (approximately one week) in which to respond. The students did not meet or respond as a group at the same time; in other words, the response was delayed.
- The synchronous discussion group held a simultaneous, instructor-moderated meeting online on an established day. Students had to respond spontaneously concerning the topic of the lesson for that week; in other words, the response was immediate.

Definition and Measurement of the Dependent Variables

The determination of interactional effects included the following measures:

- a. Interaction frequency was determined by a count of the total number of interactions that took place within each setting/condition.
- b. The length of interactions for each participant was determined by counting the total number of words occurring in an interaction within each condition.
- c. Participants' interaction style and preferences were measured by (1) the impact of nationality, gender, and age in each condition as determined by a count of the frequency and number of words in messages, and the total amount of time online for each variable, and (2) those specific educational topic(s) that evoked a higher frequency of responding and/or resulted in more time spent online by pre- and in-service teachers.

A qualitative analysis was also conducted to determine the participants' attitudes and preferences regarding the use of online instruction as a professional development medium. Formal and informal questionnaires and interviews were used to measure the students' attitudes and preferences relative to the two different types of interactions presented in this study. The social validity of the overall method of information delivery and interactions among participants was determined in this manner.

Research Design

This study used both quantitative and qualitative analysis techniques. An alternating treatments design (Tawney and Gast 1984) was applied in the quantitative analysis because a single-subject design can accurately demonstrate the effects of several independent variables on the interactions of individual participants. In this design, experimental control is demonstrated if different data paths develop for each condition and show no overlap, evidenced by either stable levels or opposing tendencies in the data. The issue of experimental control is important because of the necessity to demonstrate that a treatment condition (the independent variable) is actually responsible for any observable changes in behavior. In the alternating treatment design, two or more treatment conditions are introduced to a target population in a sequential fashion. Visual investigation of the treatments will indicate whether the data paths are divergent or convergent. If they are convergent, or crossing, then there is no confidence that either of the two treatments is exerting control over the interaction behaviors. However, if the data paths are divergent, as evidenced by either stable trends or opposing tendencies, then one can infer that the treatment(s) are indeed responsible for the observed differential effects or changes in interaction behavior.

The order of interactions was alternated between the asynchronous and synchronous conditions over a seven-day period. The interactions began with the asynchronous discussion group condition being initiated after the weekly lesson was made available on the Web page every Sunday. The synchronous discussion group occurred every Saturday of the following week for five consecutive weeks. There were no requirements for posting by participants to either of the two discussion groups during the course of the study.

General Procedure

The online experience in this study consisted of the Web pages designed for a course entitled “Integrating Students with Disabilities into School Settings.” The course was divided into ten lessons, each designed to be an interactive learning event adapted to the differing needs of students in a distance learning course. During the first week of class, the group established the meeting times. There were five 1.5-hour interactions using both types of interaction format—a total of fifteen hours of interactions. At the end of the study, students completed a questionnaire and participated in an interview by e-mail to assess their attitudes and preferences.

Data Collection and Analysis

The data from the two conditions were collected in the following manner: The student responses from each interaction event were posted in the threaded discussion group, were then downloaded into a file, and finally onto two floppy disks. The researcher scored the data, and a second doctoral student rater served as a reliability check over the primary researcher’s ratings of archived interaction data. The researcher and second rater separately rated the data generated during each of the interaction sessions. Each person also independently scored the results with an overall interobserver agreement across both conditions at 100%. The achievement of perfect agreement between the two raters/scorers was possible because of (a) prior agreement on the definitions of what constituted a message, words, or phrase; and (b) the use of archival transcripts for scoring purposes. The use of written transcripts permitted the high rate of agreement, since they are more stable and easily identified than are dynamic interactions within classroom environments.

Results

Significant differences were found in the total number of words generated by subjects in the synchronous and asynchronous settings, with the synchronous condition eliciting an average of 406 words per session, compared to 230 words per session in the asynchronous condition (see Table 2).

A second research question, regarding differences in the frequency of responses as determined by the total number of messages posted by the

Table 2. Average Number of Words per Session in the Asynchronous and Synchronous Discussion by All Subjects

Topics-Interaction	Type of Discussion	
	Synchronous	Asynchronous
Inclusion-Interaction	427	268
Choral Respond-Interaction	409	236
Technology-Interaction	342	223
Tutoring-Interaction	418	140
Social Skills-Interaction	436	282
Total Number of Words	2032	1149
Average Number of Words	406	230

type of teacher (pre- or in-service), reveals significant differences between synchronous and asynchronous groups. The synchronous interactions produced higher rates of message posting than the asynchronous interactions. In addition, the number of messages posted by the veteran in-service teachers was significantly greater than the number posted by the preservice graduate students (see Tables 3 and 4).

Another research question investigated differences in interaction style as evidenced by the participants' characteristics—including gender, nationality, and age—during asynchronous and synchronous discussions. When gender was the critical variable, there were no discernible differences between the response rates or patterns. However, when the nationality of participants was the critical variable, there were noticeable differences between the response rates of non-US and US participants,

Table 3. Average Frequency of Messages Posted in Synchronous Discussion by Teacher Type

Topics-Interaction	Service Status		Average per Topic
	Syn. Teacher (in-service)	Syn. Grad. (preservice)	
Inclusion-Interaction (1-S)	10	8	9
Choral Respond-Interaction (2-S)	13	8	10
Technology-Interaction (3-S)	8	6	6
Tutoring-Interaction (4-S)	10	9	10
Social Skills-Interaction (5-S)	10	7	9
Average per Teacher's Type	10	8	8.8

Table 4. Average Frequency of Messages Posted in Asynchronous Discussion by Teacher Type

Topics-Interaction	Service Status		Average per Topic
	Asyn. Teacher (in-service)	Asyn. Grad. (pre-service)	
Inclusion-Interaction (1-A)	1.66	1	1.33
Choral Respond-Interaction (2-A)	2	1	1.67
Technology-Interaction (3-A)	1.5	1.33	1.4
Tutoring-Interaction (4-A)	1.67	1	1.33
Social Skills-Interaction (5-A)	1.5	1	1.25
Average per Teacher's Type	1.67	1.08	1.4

with the US participants responding at a higher frequency across all but one topic area. The inverse was found true in the asynchronous condition, with non-US participants responding at a minimally higher rate than the US participants (see Table 5).

The final area of interest in determining style differences was the analysis of responses by different age groupings. The group of subjects over 30 years old spent significantly more time online than subjects under 30 years old. In addition, a clear separation between these two groups in the last three interactions is apparent (see Table 6).

The final research question investigated the participants' attitudes and preferences with regard to their engagement in an online special education instructional offering. Responses gathered in a formal survey revealed that 100% of the participants preferred the synchronous interactions to the

Table 5. Average Frequency of Synchronous and Asynchronous Messages by Nationality

Topics-Interaction	Nationality			
	Syn. US	Syn. Non-US	Asyn. US	Asyn. Non-US
Inclusion-Interaction	14	6	1.33	1.33
Choral Respond-Interaction	12	8	1.5	2
Technology-Interaction	5	7	1	1.67
Tutoring-Interaction	14	6	1	1.67
Social Skills-Interaction	13	7	1	1.5

Table 6. Average Length of Time Online—Synchronous Discussion by Age

Topics-Interaction	Age	
	> 30	< 30
Inclusion-Interaction (1-S)	68	68
Choral Respond-Interaction (2-S)	73	67
Technology-Interaction (3-S)	41	138
Tutoring-Interaction (4-S)	49	158
Social Skills-Interaction (5-S)	40	141

asynchronous interactions. Some of their responses included “It is better because you have an immediate feedback;” “The simultaneity condition implied a great motivation;” and “You learn from each other’s feedback and perspective when everyone is together.”

The participants’ attitude at the start of the online experience was generally positive, with only one subject expressing a neutral attitude. Furthermore, the participants expressed enjoyment of the course at the end as it apparently met their initially high expectations. They also expressed satisfaction with their interpersonal interactions during the experience. Each participant indicated that this type of online course experience could be important for his/her training or work as a special education teacher. One reason was that the experience allowed the participants to learn strategies and points of view different from those in a regular class because of the perspectives people brought from different places. The subjects all agreed that it was easier to participate in the online course than in a traditional course, for reasons including flexibility of time and location; ability to meet different people’s needs; ease of self-expression; and the saving of time, energy, and money. Five of the six participants mentioned the importance of having previously learned Internet skills for participation in this type of online course.

Discussion

In general, when engaged in the type of educational activities used in this study, Hispanic pre- and in-service teachers appear to prefer synchronous interactions to asynchronous interactions. This finding is consistent with the literature reviewed, the questionnaire, and interview findings that synchronous interactions appear to fulfill many of the

requirements for a successful group interaction. Creating rapport and having an environment of trust, where Hispanic students feel that they are important to their instructor, are some instructional practices that researchers have recommended when working with Hispanics. Apparently, the synchronous interaction condition facilitates immediate and simultaneous responding that can be used to build an environment of trust that Hispanics need in order to feel secure and be motivated to participate.

There were important findings regarding pre- and in-service teacher preferences and attitudes that merit further discussion. The in-service teachers had a higher frequency of messages and number of words posted per interaction than did the preservice teachers. The findings are consistent with those of Gallagher et al. (1997), wherein participants expressed a need for new and alternative curriculum programs for in-service education activities. It was confirmed that the teachers in this study recognized and appreciated the online experience as an important aspect of their training as educators.

Finally, it was observed that the subjects preferred to write in Spanish when they wanted to express personal comments to another participant or to establish rapport with each other, although they always used English to fulfill the formal expectations of the online class (see Figure 1). Both groups of native and nonnative speakers preferred the synchronous interactions. This result is consistent with aspects of the sociocultural behavior of Hispanics, indicating that they participate more if they feel motivated and believe that their contributions are considered important.

There were several limitations within this study: a small number of participants, a short time length, and a language barrier.

- **Sample size:** It was a difficult process to find Hispanic pre- and in-service teachers who had the time and equipment to participate in an online experience and who were bilingual.
- **Length of the study:** Time limitations allowed for only a five-week study with ten total interactions across the two conditions. In addition, it was not possible to know the length of time that the participants spent online when they were interacting and posting their messages in the asynchronous discussion group interaction.
- **Language barrier:** Most of the interactions were in English, the secondary language of the researcher and the participants. Thus, some instructions may not have been clear to the participants, possibly influencing the amount and quality of interaction.

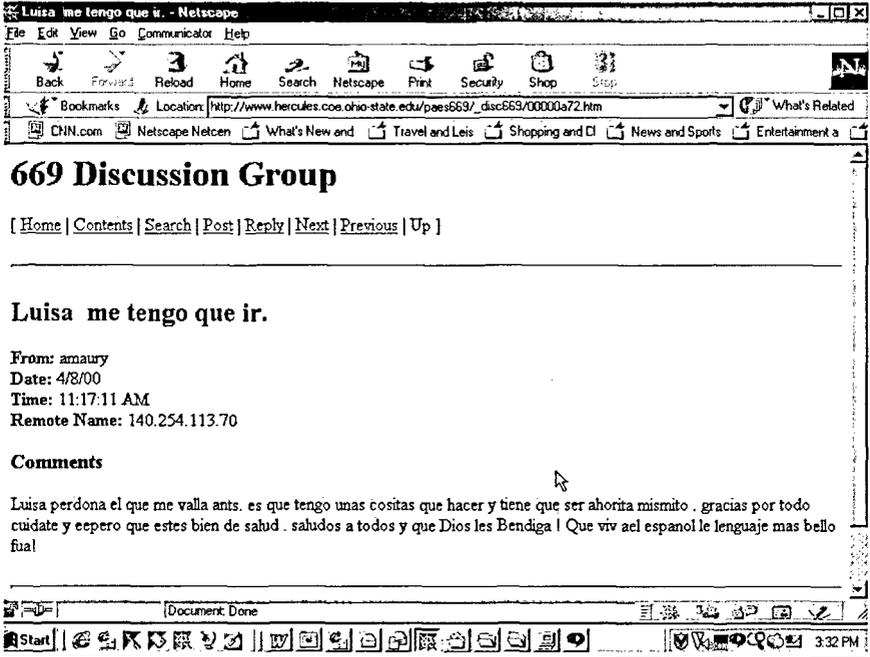


Figure 1. Spanish Language Personal Comments

Regarding the nationality of the participants in this study, the high frequency of messages by the US participants was expected because of the use of English as the primary language for interactions. On the other hand, the non-US participants also preferred the synchronous interactions over the asynchronous. An important finding was that, in the synchronous discussion group, the total number of words across all messages was approximately the same, regardless of nationality. The results of this study support the contention that synchronous discussion group interactions are an important feature of successful online courses with Hispanic students. Web-course developers should take this into consideration when they design the interaction strategies of online courses in order to enrich and engage a wide range of students' attention and participation. In addition, online courses seem to meet the needs of pre- and in-service teachers with regard to their professional development, as well as facilitating the participation of teachers who could not be actively present in a traditional classroom.

Finally, the subjects of this study made it clear that participants in these courses must have basic Internet skills. This indicates that either a prerequisite or an initial lesson module be designed to teach navigation skills that increase students' comfort level for using the Internet in formal learning experiences. It is necessary to conduct research that not only determines the effectiveness of this type of learning, but also defines new course interaction strategies that accommodate different learning styles of minority participants in online courses.

References

- Arreaga-Mayer, C., and C. Perdomo-Rivera. 1996. Ecobehavioral analysis of instruction to language for at risk language minority students. *The Elementary School Journal* 96 (3): 245–58.
- Baron, N. S. 1984. Computer-mediated communication as a force in language change. *Visible Language* 18 (2): 118–41.
- Cole, M. 1996. *Cultural psychology: A once and future discipline*. Cambridge, MA: The Belknap Press of Harvard University Press.
- De la Rosa, D., and C. Maw. 1991. *Hispanic education: A statistical report 1991*. Washington, DC: National Council of La Raza.
- Fabos, B., and M. Young. 1999. Telecommunications in the classroom: Rhetoric versus reality. *Review of Educational Research* 69 (3): 217–59.
- Foster, M. 1993. Educating for competence in community and culture. *Urban Education* 27 (4): 370–94.
- Gallagher, P., D. Malone, M. Cleghorne, and K. Helms. 1997. Perceived inservice training needs for early intervention personnel. *Exceptional Children* 64 (1): 19–30.
- Gonzalez-Bueno, M. The effects of electronic mail on Spanish L2 discourse. *Language Learning and Technology* 1 (2): 55–70.
- Guri-Rosenblit, S. 1999. The agendas of distance teaching universities: Moving from the margins to the center stage of higher education. *Higher Education* 37 (3): 281–93.
- Hollenbeck, J. 1998. Democracy and computer conferencing. *Theory into Practice* 37 (1): 38–45.
- Jimenez, R., and R. Gersten. 1999. Lessons and dilemmas derived from literacy instruction of two Latina/o teachers. *American Educational Research Journal* 36 (2): 265–301.

- Kenway, J. 1998. Pulp fictions? Education, markets, and the information superhighway. In *Power/knowledge/pedagogy: The meaning of democratic education in unsettling times*, ed. D. Carlson and M. W. Apple, 61–91. Boulder, CO: Westview Press.
- Kern, R. G. 1995. Restructuring classroom interaction with networked computers: Effects on quantity and characteristics of language production. *Modern Language Journal* 79: 457–74.
- Lai, K. 1996. *Words have wings: Teaching and learning with computer networks*. Dunedin, NZ: University of Otago Press.
- Lister, B. C., M. M. Danchak, K. A. Scalzo, W. C. Jennings, and J. M. Wilson. 1999. [online]. The Rensselaer 80/20 model for interaction distance education. Proceedings of the Educause '99 Conference. Available at <http://www.educause.edu/ir/library/html/edu9907/edu9907.html>
- McCormack, C. D. 1998. *Building a Web-based education system*. New York: Wiley Computer Publishing.
- McIntyre, S. R., and R. H. Tlusty. 1995. Computer-mediated discourse: Electronic dialogue journaling and reflective practice (Report No. NCRTL-IR-017-243). East Lansing, MI: National Center for Research on Teacher Learning (ERIC ED 385 232).
- National Telecommunications and Information Administration. 2000. [online]. Falling through the Net: Toward digital inclusion. A report on American's access to technology tools. Department of Commerce. Available at <http://www.ntia.doc.gov>
- Olsen, J. S., G. M. Olsen, and D. K. Meader. 1995. [online]. What mix of video and audio is useful for small groups doing remote real-time design work? ACM/SigCHI/Chi'95 Proceedings. Available at http://www.acm.org/sigchi/chi95/Electronic/documnts/papers/jso_bdy.htm
- Sayers, D. 1995. Language choice and global learning networks: The pitfall of Lingua Franca approaches to classroom telephony. *Education Policy Analysis Archives* 3 (10): 1–18.
- Streibel, M. J. 1988. Information technology and physicality in community, place, and presence. *Theory into Practice* 37 (1): 31–7.
- Tawney, J. W., and D. L. Gast. 1984. *Single subject research in special education*. Columbus, OH: Charles E. Merrill Co.
- Tharp, R. G., and R. Gallimore. 1991. [online]. The instructional conversation: Teaching and learning in social activity. Research Report 2. *National Center for Research on Cultural Diversity and Second Language Learning*. Available at <http://www.ncbe.gwu.edu/miscpubs/ncrcd11/tr2.htm>

- United States Census 2000. 2000. [online]. US Census Bureau, US Department of Commerce. Available at <http://www.census.gov>
- United States Department of Commerce. 1999. Falling through the net: Defining the digital divide.
- Vásquez, O. 1993. A look at language as a resource: Lessons from la clase mágica. In *Bilingual education: Politics, practice research*, ed. M. B. Arias and U. Casanova, 199–224. Chicago, IL: The National Society for the Study of Education.
- Wang, Y. M. 1994. E-mail dialogue journaling in an ESL reading and writing classroom. *Dissertation Abstracts International* 54: 3316.

Thirteenth International Conference on College Teaching and Learning

**April 9–13, 2002
The Adam's Mark Hotel
Jacksonville, Florida**

This highly successful international conference on creativity in higher education learning emphasizes research and practice in teaching and learning, with a focus on the uses of innovative learning strategies and advanced technologies.

The conference will feature 350 or more faculty presentations for 1,000 faculty attendees in all academic fields. Keynote speakers are Daniel Goleman, psychologist, journalist, and author of *Emotional Intelligence*, and Christopher Dede, the Timothy E. Wirth Professor of Learning Technologies at Harvard's Graduate School of Education.

Michael Moore, editor of *The American Journal of Distance Education*, will present a workshop entitled "Developing and Teaching Your First Online Course."

Call for Papers

Submission deadline is December 3, 2001. For information, visit:
<http://www.fccj.org/Teaching%26LearningConference/final.html>