

A Case of Computer-Mediated Communication and Multimedia Integration: Breaking Classroom Barriers with More Input and Opportunities to Communicate.

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Abstract

This article describes how a series of web-based computer-mediated communication (CMC) and multimedia tools were integrated into an intermediate Spanish II course at a Historically Black University (HBCU). The tools included a chat room, a bulletin board, an e-mail dialogue journal, audio and video quizzes, and a series of readings about the Afro-Latino experience linked to a vocabulary glossary. The objectives were (1) to provide students with opportunities for meaningful communication in the second language beyond the fifty-minute class, (2) to increase students' exposure to comprehensible input, and (3) to increase student motivation and cultural awareness through readings about the African Diaspora in Latin America and the Caribbean. Assessment data that measured student perceptions of the technology integration showed that the participants' preferred application was the chat room, although they also favored the video and audio quizzes. The least-liked tools were the bulletin board and the dialogue journal. In general, students appreciated having more opportunities to interact in Spanish, especially in real-time via the chat room. Students felt that the additional interaction helped them think in the language and improve their writing skills. The e-mail dialogue journal served as an example of the importance of assessment. Although students felt that it improved their proficiency, many were overwhelmed by the expectations of the activity. Finally, students felt that the electronic medium increased awareness of the target culture including, but not limited to the Afro-Latino experience.

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Introduction

Pica (1994) encourages language teachers to look at second language acquisition (SLA) research findings to answer the questions that arise in the second language (L2) classroom. Following this premise, the present article seeks to use theoretical insights to improve L2 teaching and learning in the context of an HBCU. The language teaching profession has undergone significant theoretical and methodological growth since the birth of SLA as a discipline in the late 1960s to early 1970s (Larsen-Freeman, 1991, 2000). In contrast to traditional approaches that focused on the teaching of grammatical structures or emphasized practice through repetition and drilling, researchers in the late 1970s became aware of the need to look at input as a significant factor of language acquisition (Larsen-Freeman, 1991).

One of the most influential examples of this trend is Stephen Krashen's Monitor Theory (Krashen, 1982). More specifically, the Input Hypothesis in Krashen's model considers comprehensible input the sole cause of language acquisition. Undoubtedly, this claim has received a considerable amount of criticism from SLA researchers. Gregg (1984) questioned its validity as a theory, given the absence of operational definitions for the concepts that it comprises, including that of comprehensible input, and the lack of empirical research to back its claims. The contention with Krashen's model that has been most often mentioned by SLA theorists is its complete disregard for other important factors of acquisition, such as output, focus on form (Larsen-Freeman, 1991; Swain, 1985), interaction, negotiation of meaning (Pica, 1994), as well as other variables such as attention (Gass, 1997), and environmental factors (Long, 1985). However, although they disagree with Krashen about its sufficiency for acquisition, researchers agree that input is essential for language learning (Gregg, 1984; Swain 1985; Pica 1994). In addition, there is also agreement that learners need to comprehend the language that they are exposed to in order for input to become intake (Larsen-Freeman, 1991; Gass, 1997). Therefore, the term 'comprehensible input' will be used in this project not as the sole cause of acquisition, as suggested by Krashen, but as an essential element of the acquisition process, as indicated by most SLA theorists. In that light, it is the premise of this project that L2 instructors must increase students' exposure to comprehensible input in order to facilitate language acquisition.

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Another major breakthrough for SLA in moving away from traditional approaches to language teaching has been the establishment of communicative competence as the goal of our practice (Omaggio Hadley, 2001; Savignon, 1983). This shift has brought about an emphasis on communicative interaction as a major contributor to language acquisition (Pica, 1994; Gass, 1997), and it requires instructors to provide learners with multiple opportunities to interact in the L2.

In most educational institutions, the classroom is the major setting for instruction, and therefore exposure to comprehensible input and opportunities for communicative interaction are provided in this environment. However, and in spite of many instructors' best efforts to move beyond teaching grammar and to use class time to create

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communicative environments, the mere nature of classroom instruction presents time and space limitations that restrict learners' exposure to input and opportunities for interaction. Therefore, while recognizing the unquestionable value of the classroom for essential face-to-face communication, a need exists to create new environments that supplement classroom instruction and remove the time and space barriers of that environment. The growing interest in the integration of instructional technologies in all fields of education, including language teaching and learning, may constitute a vehicle create such environments.

Over the past few decades, the use of multimedia and CMC technologies in L2 courses has increased significantly. These technologies have expanded the communicative reach of the classroom by breaking the time and space barriers inherent in that environment. Nowadays, educators are using multimedia technologies such as hypertext, audio, and video, as well as CMC applications in the form of bulletin boards, chat rooms, e-mail, blogs, and social networks to increase students' exposure to comprehensible input (Chapelle, 1997; Chapelle & Jamieson, 2008), while creating authentic venues to exchange opinions and express emotions in the L2.

The present article describes how a series of web-based CMC and multimedia tools were integrated into an intermediate Spanish course at a small HBCU. The course was taught face-to-face and it included one language laboratory session per week. CMC and multimedia technologies were used as a supplement to regular classroom instruction and most tools were integrated in WebCT, the course management system available at the institution.

Review of Previous Research

Research findings have shown that the use of CMC applications, both synchronous (in real time) and asynchronous (over time) has significant benefits for language learning. These benefits are (1) a reduction of language-related anxiety (Beauvois, 1994, 1996, 1999; Kivela, 1996; Lee, 2004; Meunier, 1998; Skinner & Austin, 1999; Warschauer, 1996), and (2) an equalization of the interaction, in which weaker or introverted students feel empowered to voice their thoughts in the L2, with minimal contributions from the instructor (Beauvois, 1992, 1994, 1999; Blake, 2000; Chun, 1994; Kamhi-Stein, 2000; Kelm, 1992; Kern, 1995; Kronenberg, 1995; Meunier, 1998; Pelletieri, 2000; Sengupta, 2001; Shetzer & Warschauer, 2000; Skinner & Austin, 1999; Toyoda, 2002; Warschauer, 1996; Weasenforth; Biesengach-Lucas & Meloni, 2002).

As far as multimedia software is concerned, the use of video, sound, and hypertext has been identified as a valuable source of L2 input, both written and auditory (Chapelle, 1997; 1998; Chapelle & Jamieson, 2008; Hanson-Smith, 1999). The possibility of exposing L2 learners to different modalities of input through multimedia serves to remove yet another barrier of the classroom setting where the instructor is customarily the sole source of input. In contrast, the use of video, sound, and hypertext exposes learners to a multiplicity of native voices and language varieties, with the added advantage of being accessible anytime anywhere.

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Chapelle (1998) states that the findings of SLA research should serve as guiding principles for the integration of multimedia activities in L2 courses. To this end, she proposes that the goal of these activities should be to provide comprehensible input that facilitates acquisition since, as mentioned earlier, researchers agree on its importance as a condition for acquisition. The two multimedia-based strategies that

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are most commonly used to increase input comprehensibility in such activities are video captioning and vocabulary glosses. Video captioning has been found to aid in the development of listening-comprehension skills (Bird & Williams, 2002; Danan, 2004). Markham (1999) found that captions significantly improved a learner's ability to recognize words on video tapes. Similarly, Shea (2000) reported that captioning helped students with lower Spanish GPAs better understand L2 speech, while increasing overall student motivation. Danan (2004) attributed this improvement in listening-comprehension to the fact that learners visualize the language that they hear, making comprehension easier. Finally, in a recent study, Winkle, Gass, and Sydorenko (2010) found that students who watched captioned videos performed better on follow-up aural vocabulary tests than when they watched non captioned videos.

In spite of its benefits, video-captioning has the potential to inhibit listening comprehension if misused or overused. G. Taylor (2005) found that captions may constitute a source of distraction for the less proficient students, since they need to pay attention to significant amounts of information in multiple modes, namely image, sound, and text. In addition, it is debatable whether captioning benefits listening or reading comprehension (Pujola, 2002). In order to avoid these shortcomings of video captioning, Guillory (1998) recommends using only a few key words and phrases, as opposed to captioning the entire discourse. This strategy minimizes distraction by focusing the learners' attention on the main ideas of the video, while ensuring that listening comprehension skills are being developed.

While captioning helps students better understand the information from video materials, the ability to insert links to vocabulary glosses has been found to facilitate reading-comprehension in the L2 (Lomicka, 1998). In effect, computer-based glosses have been found to be more effective than their paper-based counterparts due to their ease of access and flexibility (A. Taylor, 2005). Concerning the language of the glosses, Yoshii (2006) found no significant difference on L2 vocabulary acquisition between using the students' L1 and the L2 for definition supply.

Technology Integration Objectives

The incorporation of CMC and multimedia tools into the intermediate Spanish course described in the present article was guided by the findings and suggestions of previous research. Consequently, the two major objectives formulated prior to the creation of the technology-based materials were (1) to provide students with opportunities for meaningful communication in the L2 beyond the fifty-minute class, and (2) to increase students' exposure to comprehensible input. In view of the fact that this project was carried out at an HBCU, a third objective was identified:

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to increase student motivation and cultural knowledge through readings about the African Diaspora in Latin America and the Caribbean. The readings were intended to help bridge the cultural gap between African American students and native speakers of Spanish. This third objective originated from the profession's concern about the low numbers of African American graduates with degrees in foreign languages (Brigman & Jacobs, 1981; English, 1996; Farfan-Cobb & Lassiter, 2003; Glynn, 2007; Guillaume, 1994; Hines & Jenkins, 2004; Hubbard, 1980; Huber, 1990; Kubota, Austin & Saito-Abbott, 2003). According to the National Center for Education Statistics (NCES), only 4.1% of the total number of bachelor's degrees in foreign languages from postsecondary institutions was awarded to African Americans in 2005-2006. One of the strategies identified as a way to reverse these gloomy figures has been to incorporate content about the Black experience in Spanish and other language courses (Clark, 1982; Davis, 1991; Farfan-Cobb, I., & Lassiter, L. E., 2003; Moore, 1998).

CMC Tools

In order to provide opportunities for students to interact in real time through the use of a computer, a chat room was built into the WebCT course shell. This synchronous communication tool was used during laboratory hours, since this was the only occasion on which all students could be asked to access a computer at the same time. Chat room interaction was mostly unstructured, and students were allowed to express their thoughts and opinions freely, as long as they did it in Spanish.

In addition to the chat room, a bulletin board for asynchronous communication was added to the WebCT shell. Communication on the bulletin board took place outside of class and lab hours, since the asynchronous nature of the technology did not require all students to access a computer concurrently. First, students were asked to read, summarize, and comment on articles from newspapers and magazines written in Spanish. Links to those sources were included on the web site. The purpose of was twofold. On the one hand, students were exposed to authentic written input from newspapers and magazines, and on the other, they were provided with a low anxiety venue for interaction in the L2. After the initial posting, students were asked to read and reply to each other's comments either agreeing or disagreeing, and supporting their opinions with coherent arguments. The rationale for this two-step design is given by Pelletieri (2000) who indicates that when engaging in asynchronous CMC, students do not read the contributions made by others unless they are required to do so.

A second asynchronous CMC tool, e-mail dialogue journals, was added to the course in order to provide students with an interactive writing tool that allowed them to produce longer contributions and express their feelings and opinions more profoundly. Dialogue journals have been widely used in composition courses both in English and foreign languages, since they allow for corrective feedback to be provided in a low-anxiety fashion. Instead of highlighting mistakes in the writing pieces produced by students, the instructor models the correct structures while prompting for further development of the ideas expressed. E-mail dialogue journals

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have been found to stimulate L2 writing more than paper-based versions, allowing for a greater amount of language and more variety of topics (González-Bueno, 1998). For the present project, students were asked to write 250-word messages to either the instructor or a trained dialogue journal assistant every two weeks.

Multimedia Tools

For the purpose of providing comprehensible oral input beyond the limits of the traditional classroom, the WebCT shell included a series of audio and video files about the topics that were covered in the course. Those topics included work, the environment, the indigenous populations of Latin America, and Mexican muralists. After viewing or listening to each file as many times as they wanted, students completed a self-graded quiz that assessed their comprehension of the main ideas and supporting details. In this manner, they received immediate feedback on their performance, and their progress could be easily monitored by the instructor. Following the recommendations of Guillory (1998), the videos were captioned with key words and phrases in order to make the input comprehensible without distracting students. Additionally, while the audio extracts were scripted, only cues were given to the actors of the videos. The purpose of this strategy was to provide students with semi-authentic native-speaker speech, as opposed to the overly edited language that is often found in L2 video materials.

As far as written input is concerned, the WebCT shell also included a series of readings about the Afro-Latino population of Latin America and the Caribbean. As mentioned earlier, it was believed that the content of the readings would serve to motivate students by bridging the gap between the African American experience and that of the native speakers of Spanish. Just as with the audio and video activities, these readings were followed by self-graded quizzes that tested student comprehension of the content and provided immediate feedback on performance. In order to make the input understandable and therefore more likely to become intake, key words that may have affected comprehensibility of the main ideas were linked to a vocabulary gloss that included definitions in Spanish, as well as English equivalents, based on the findings of Yoshii (2006).

Assessment

Data from student perceptions were used in order to determine how well the integration of the electronic medium had achieved the objectives formulated for the project. Sixteen of the 20 students enrolled in the intermediate Spanish course completed a survey about their perceptions of the CMC and multimedia tools (see the Appendix). The survey was administered at the end of the semester by someone other than the instructor, and it contained a series of open-ended questions, together with a scale for students to rate their level of satisfaction with each of the electronic tools. The scale contained a five-point Likert-type scale ranging from “extremely dislike” to “extremely like.”

Data from the rating scale (see Tables 1 and 2) revealed that the electronic environment was well-liked by students, as indicated by the fact that all technological

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tools received mean ratings above 3.5. The preferred application was the chat room, followed closely by the video and audio quizzes. The least favorite tool was the bulletin board, followed closely by the dialogue journals.

Tool	N	Mean	SD
Afro-Latinos Quizzes	16	3.9	0.8
Audio Quizzes	16	4.1	0.8
Bulletin Board	16	3.6	0.6
Chat	16	4.4	0.7
Dialogue Journals	16	3.8	0.9
Video Quizzes	16	4.3	0.7

Table 1. Mean Student Ratings of the CMC and Multimedia Tools

	Extremely Dislike	Dislike	Neither Like Nor Dislike	Like	Extremely Like
Afro-Latinos Quizzes	0	0	5 (31%)	7 (44%)	4 (25%)
Audio Quizzes	0	0	5 (31%)	7 (44%)	4 (25%)
Bulletin Board	0	0	7 (44%)	8 (50%)	1 (6%)
Chat	0	0	2 (13%)	6 (38%)	8 (50%)
Dialogue Journals	0	1 (6%)	5 (31%)	6 (38%)	4 (25%)
Video Quizzes	0	0	2 (13%)	8 (50%)	6 (38%)

Table 2. Percentages of Respondents for Each Score and CMC/Multimedia Tool

In addition to the quantitative data from the rating scale, the open-ended questions included in the survey provided a significant amount of qualitative data on the students' experience with the CMC and multimedia activities. The data were analyzed and coded to establish themes connecting all the responses. Four major themes emerged during data analysis: (1) perceived improvement in students' writing ability, (2) perceived increased interaction in the L2, (3) perceived increased cultural awareness, and (4) strong opinions about the dialogue journal activity.

As shown by their responses, students felt that the CMC and multimedia tools and activities improved their writing ability in Spanish and helped them think and express themselves in the language. Comments related to this include:

1. "The dialogue journal helped me with my writing (...) It was like I was really having a conversation in which I understood everything that was going on."
2. "(Chat rooms) actually made you think and chat in Spanish."

3. "(Dialogue journal) helped me to think about what I was going to explain in Spanish."
4. "These extra writing assignments allow the students to develop our writing skills."

Equally important to note is that students reported an appreciation for the additional opportunities to interact with other students in the L2. The opinions expressed in examples 1 and 2 above point in that direction. Similarly, in examples 5 and 6 students exhibit a positive attitude towards authentic communication in the chat room:

5. "I loved the chat room because I was learning more and more how to have a real conversation with others in Spanish."
6. "I enjoyed the chat room because you got to converse with your classmates and the teacher."

The third theme that emerged during data analysis was that students felt an improvement in their awareness of the culture of the native speakers of Spanish. The following examples illustrate this theme:

7. "I think it's beneficial for students who want to pursue their international career or students like I [sic] who want to learn more about the Spanish culture and its history."
8. "It allows the students to become familiar with the language and its culture and it could be a way to learn outside of the American culture and expand your knowledge."

Interestingly, no specific mention was made of the inclusion of the Afro-Latino culture in the electronic medium. Similar results were found by Moore (2005). In that study, African American college students did not express a special interest in the languages that related to their African heritage. However, the participants of the present project did appreciate the inclusion of the Black experience in the course, as shown by the fact that 69% of the students liked or extremely-liked the Afro-Latino quizzes. This is an indication that students appreciated the acquisition of cultural knowledge in general including, but not limited to, the history and traditions of the Black speakers of the language.

The last theme that emerged from the survey data refers to the intensity with which students expressed their opinions about the dialogue journal. Students were very forthcoming in both their support and criticism of the activity:

9. "As far as the dialogue journals, I think that they help us get in the flow of writing in Spanish. It helped me to think about what I wanted to write in Spanish, rather than in English. The only part that I didn't like was the fact that we had to e-mail it by a specific time. I usually tend to forget."
10. "It was a lot of work, but it helped also."
11. "The dialogue journal was a bit much. Maybe fewer words, then add more as the semester continues."

These comments indicate that the biweekly 250-word requirement was excessively strenuous for intermediate-level language learners. Although students did perceive

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the potential of the dialogue journals to develop their L2 proficiency, they were overwhelmed by the amount of work that it required. In the following example, a student makes specific mention to this conflicting view:

12. "The e-mail dialogue was a bit harder to adapt to, mostly because the 250-word requirement seems quite daunting initially, but I felt as if it helped me to write in Spanish more conversationally and perhaps improve my Spanish-speaking ability."

In addition to the four themes that were consistently mentioned by students in the survey, there were a few comments that were not mentioned frequently enough to constitute a theme, but that serve to support previous research on the integration of CMC and multimedia into language courses. For example, some students expressed an appreciation for the additional exposure to the L2 in different modalities, namely written and aural.

13. "It's good because it helps us recognize Spanish visually and audibly and also helps us get used to different Spanish accents."
14. "I felt that reading the articles was a good way to learn the language along with the video quizzes and chat rooms."
15. "Audio and video quizzes, it helps with listening comprehension."

These comments, coupled with the high ratings received by audio and video activities, reveal that students did recognize the value of the electronic medium to provide additional input in the L2.

With regard to student feelings about working with technology, the high ratings received by all the electronic activities indicate that students felt comfortable communicating in this medium. In effect, a student reported feeling more comfortable communicating through CMC than in the classroom:

16. "I think you should continue the WebCT activities because students feel more comfortable working in a solitary environment instead of an environment with students. Some students feel intimidated by other students."

This comment reflects previous research on the integration of CMC into language courses. In some instances and for some tasks CMC may constitute a low anxiety environment that empowers some students to communicate in the L2. The result is an interaction in which a multiplicity of voices is heard, as opposed to the classroom environment where peer or instructor pressure may intimidate some students.

Summary and Conclusion

The traditional classroom environment presents invaluable opportunities for L2 learners to interact face-to-face with each other and with their instructor. In addition, the classroom is the primary source of learners' exposure to comprehensible input that contributes to the acquisition of the L2. However, the benefits of this environment are restricted to the 50- to 80-minute class time and to the four walls that delimit classroom space. Moreover, the instructor is in most cases the sole source of comprehensible input in the classroom context. Consequently, instructors need to find environments to provide students with opportunities to communicate beyond the boundaries of

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traditional classroom instruction. Ideally, these environments will not replace, but rather supplement the valuable face-to-face practice taking place in the classroom. CMC and multimedia technologies may constitute a means for instructors to make this possible. A tradition of research in the area of computer assisted language learning (CALL) supports the integration of these technologies in language courses and provides useful guidelines for successful instructional design that will lead to an improvement of students' communicative competence.

The present project consisted of the development and implementation of a series of CMC and multimedia activities in an intermediate Spanish course at a small HBCU. Except for an e-mail dialogue journal activity, all the tools were included in a WebCT shell that was available to all students enrolled in the course. Instructional design in the electronic medium was guided by the findings of SLA and CALL research. Therefore, the first objective of the project was to provide students with opportunities for meaningful communication in the L2 beyond the fifty-minute class. Data from the survey's open-ended questions and rating scale showed that participants appreciated the additional opportunities to interact in Spanish, especially in real-time via the chat room. Students felt that the additional interaction helped them think in the language and improve their writing skills.

The second objective of the present project was to increase students' exposure to comprehensible input. Qualitative data from the students' perspective did not reveal a consistent theme related to the benefits of extended exposure to L2 input. Comments indicated that students favored their ability to produce L2 output over being exposed to comprehensible input. Yet, there were a number of comments that praised the electronic medium on the grounds that it exposed students to the L2 in different modalities.

Since the technology integration took place at an HBCU, a third objective was to increase student motivation and cultural knowledge through readings about the African Diaspora in Latin America and the Caribbean. Although no specific mention was made of the inclusion of the Afro-Latino culture in the electronic medium, the readings ranked received high scores, indicating that students appreciated their inclusion in the course. Additionally, the acquisition of cultural knowledge was identified as a major theme emerging from the data obtained from the open-ended questions of the survey. Therefore, we can conclude that the electronic medium did meet its goal of increasing student motivation and cultural knowledge including, but not limited to, the contributions of the Black speakers of the language.

Finally, and in agreement with CALL research as it relates to the integration of CMC, students felt comfortable in the electronic environment, as shown by the high scores awarded to all activities. Although it did not constitute a major theme emerging from the qualitative data, there was mention of decreased anxiety in the electronic environment compared to the classroom.

All things considered, the integration of CMC and multimedia technologies described in this article was successful at motivating the students to study Spanish and also at breaking classroom barriers with additional exposure to comprehensible input

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and opportunities to communicate. Students felt that these sorts of activities improved their writing and cultural awareness and they believed that they should continue to be used in language courses.

Teaching Implications

The following teaching implications emerged from the design, implementation, and assessment of the present project:

1. Face-to-face communication and exposure to input taking place in the classroom can be supplemented, rather than replaced, with technology-based environments that remove time and space barriers.
2. The integration of technology in L2 courses must follow the premises of SLA and CALL research.
3. Technology integration projects must be assessed in order to improve student satisfaction in future implementations. The case of the dialogue journal in the present project serves as an example of the importance of assessment. Although students felt that the activity improved their proficiency in the L2, many were overwhelmed by the length and frequency of the required e-mail contributions. This may have hindered the benefits of the activity to improve L2 proficiency by raising the students' level of anxiety. Assessment of this project indicated that extensive writing activities, such as the dialogue journal, may be better implemented in an incremental fashion, especially if assigned in combination with a considerable number of other technology-based activities.
4. When integrating CMC into language courses, both synchronous and asynchronous tools should be used. Although the particular group of students featured in this project preferred the chat room, they also valued the benefits of asynchronous tools such as e-mail or bulletin boards to improve their writing proficiency.

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Appendix

Project Assessment Survey

Instructions: This semester, you have completed a series of Internet activities for this class. Think about your experience when completing those activities and complete this questionnaire.

1. What is your general opinion about the use of the WebCT and e-mail activities? Elaborate your response. Feel free to expand on your ideas on the back of this page.
2. What is your opinion about the usefulness of these types of activities in foreign language classes? Elaborate your response. Feel free to expand on your ideas on the back of this page.
3. Rate the WebCT and e-mail activities in terms of how much you liked/disliked them.

Activities	Extremely dislike	Dislike	Neither like nor dislike	Like	Extremely like
Dialogue Journal by E-mail	1	2	3	4	5
Discussion Board (Articles and Responses)	1	2	3	4	5
Chat Room	1	2	3	4	5
Afro-Latinos Quizzes	1	2	3	4	5
Audio Quizzes	1	2	3	4	5
Video Quizzes	1	2	3	4	5

4. Elaborate rating of each activity on question 3. Feel free to write more on the back of this page.
 - a. Dialogue Journal by E-mail:
 - b. Discussion Board (Articles and Responses):

- c. Chat Room:
 - d. Afro-Latino Quizzes:
 - e. Audio Quizzes:
 - f. Video Quizzes:
5. Which of the activities, if any, do you think I should continue to use in my Spanish classes? Justify your response. Feel free to expand on your ideas on the back of this page.
 6. What suggestions do you have for the implementation of these activities in the future? Feel free to expand on your ideas on the back of this page.