Working with Computers and Multimedia Software at the Language Lab to Promote Interaction in EFL

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Effective use of multimedia has not always been an easy task due, partly, to the absence of appropriate knowledge in the exploitation of this technology. This article explains how to make the language laboratory interactive and it discusses the nature of interaction during ten months observation of a group of students using "Discoveries" multimedia teaching–learning software. The study explores to what extent the computer becomes a dominant interactional partner; in addition the research reports the benefits of pair work around the computer. The ultimate goal of this article is to offer another opportunity for English teachers and foreign language programs to achieve objectives focused on technology and education.

Key words: Multimedia, Interaction, Individual Work, Pair Work, Language Laboratory

El uso eficaz de la multimedia no siempre ha sido una tarea fácil debido, en parte, a la ausencia de conocimiento apropiado en el aprovechamiento de esta tecnología. Este artículo explica cómo transformar en interactivo el laboratorio de idiomas y discute la naturaleza de la interacción de un grupo de estudiantes que trabajaron con el software multimedia de enseñanza-aprendizaje "Discoveries" durante diez meses de observación. El estudio explora hasta qué punto el computador se convierte en un interlocutor dominante; sin embargo, la investigación reporta los beneficios del trabajo en parejas alrededor del computador. La meta de este artículo es ofrecer otra alternativa a los profesores de los programas de inglés como lengua extranjera para poder lograr objetivos enfocados en el uso de la tecnología en la educación.

Palabras claves: Multimedia, Interacción, Trabajo Individual, Trabajo en Parejas, Laboratorio de Idiomas

Introduction

Interactivity in learning is "a necessary and fundamental mechanism for knowledge acquisition and the development of both cognitive and physical skills" (Barker, 1994:1). Quality interaction is intrinsic to success, effective instructional practice as well as learning; it permits the development of knowledge acquisition and promotes language use.

The objectives of this study were: First, to identify the nature of interaction in the multimedia lab activities; second, to evaluate the dominant and limited factor of human-computer interactions and third, to identify the benefits of pair work in front of the computer.

Theoretical framework

The implementation of interactivity can be perceived as an art (Sims, 1997) because it requires a comprehensive range of skills, including an understanding of the learner, an appreciation of software engineering capabilities, the importance of rigorous instructional design and the application of appropriate graphical interfaces. Warschauer, and Healey (1998) state that the type of software and the task teachers set for students has a large effect on the type and quality of student interaction with each other when working in pairs or small groups. With the continuing development of technological advances in the areas of communications, information networks, and multimedia and with each new development, the challenge for foreign language teaching goes far beyond current knowledge about effective use of technology.

Multimedia learning software

Cárdenas (2003) states that the introduction of multimedia in computers has had a great impact on education due to the multi-sensory exposure student's benefit from. For the aims of this study, multimedia is the integration of: Audio (speech, sounds, music), Video (text, graphics, pictures, animations, movies) and Input by (keyboard, mouse, microphone).

Interaction

According to Malamah-Thomas (1987), interaction is more than action followed by reaction. It is acting reciprocally, acting upon each other. That is to say, the teacher acts upon the students, but the class reaction subsequently modifies his/her next action and so on. The learners' reaction becomes in itself an action evoking a reaction in the teacher, which influences his/her subsequent action. There is a constant pattern of mutual influence and adjustment.

The new language laboratory

The history of computer-aided language instruction provides a model for re-evaluating the role of the language lab. Like language labs, computers came into the arena as a means of providing programmed instruction. In the early days, computer programs were designed to replace the teacher in the more mundane tasks of drilled exercises. Within a relatively short period of time, new approaches for computer use were developed. Dubbed "computer assisted language learning" (CALL), these programs broke from the programmed instruction approach taken by the earlier computer-assisted instruction (CAI), to take a new, communicative-oriented, teacher-directed, task-based approach to computer use Jones (1986).

One of the reasons why computers were able to make the transition from programmed instruction (CAI) to more interactive approaches (CALL) without the rejection that language labs faced was that computers were not created as an intrinsic component of the audio-lingual approach. Another reason was that computers, unlike language labs, had an infinite range of applications outside the field of language learning. Educators, then, did not have preconceived ideas regarding the limitations of computers (as they had with language labs), but looked forward to their increasingly expanding potential.

To see the language laboratory as a tool in this light is the first step in the re-evaluation process. The next step is to glean ideas from CALL, as well as from other areas, that can be adapted to more appropriate uses in the language lab. Multimedia activities are a means of integrating interactive learning through use of the language lab. These activities look at the language laboratory in the same way that CALL looks at the computer: as a tool that requires teacher direction in creating situations in which the students utilize the target language to attain some objectives. The distinction between the old language lab activities and the new language lab activities is essentially the same as that between CALL and CAI: one focuses on communicative fluency, the other on linguistic accuracy.

Research design

This research is presented as a descriptive study in which the teacher is considered as participant observer. The following question was used to guide this research: What type of computer work fosters interaction? This study was carried out in the Languages Lab of a private university located in the city of Bogotá. It was conducted in the first and second semester of 2002. All the subjects that participated in the research are students from the University Language Center, which offers fifteen different English courses. The aim of the courses during the

first and second semester was to expand students' English oral skills to develop their communicative competence. The teacher and students met for one 1 hour session every week.

Discoveries pedagogical activities designed and carried out in this study

To start familiarizing students with the English Discoveries Program, I gave them a demonstration of it. By doing so, students started becoming acquainted with terminology (mouse, click, microphone, etc.) in English and at the same time I introduced the program itself. After the students had seen the demonstration, I allowed them to explore the program to enable them to become familiar with many of the program's icons and main content areas.

For each lab class and, according to the students' level of proficiency, there are four suggested activities (two for listening and two for speaking). Before students explore the computer activities, there are five minutes of pre-listening activities, which are mainly student predictions about the content of the activities. Just before the end of the class, there are fifteen minutes of post-listening and post-speaking activities, where mainly students act out or role play using the contents that they have just explored through the activities. They adapt the content to their personal contexts and to their inner perception of their social and cultural world.

Data analysis

From the analysis of the data two main computer work Interactions were identified; first, individual-computer and second, pair-computer. Students also interacted with the lab teacher while working either individual-computer or pair-computer. Vygotsky (1986) underlines the importance of peer support for any form of learning determined by guidance or in collaboration with more capable peers. Doing pair work students interact more between each other and perhaps they gain more knowledge. The link between these aspects was examined in detail and they are reported in the next section.

Individual versus pair work analysis

I realized that the analysis of the nature of Interaction in the lab could be identified by carrying out an individual versus pair work analysis. This category describes the frequency of interactions. The nature of interaction was examined by the frequency of human to human or human machine contact. To explore in more detail the link between the frequency of interaction, from the data I collected, I counted 200 interactions; these were 100 student-student-teacher-computer

interactions plus 100 student-teacher-computer interactions. In other words, 100 computer individual work interactions with the teacher and 100 interactions of pair work with the teacher for a total of 200 were tallied. About every 5 seconds, I tallied the interactions; the results are shown in the following table:

Interactions	Student-student	Computer	Teacher	Total
Pairs	39	57	4	100
Individual	3	91	6	100

Table 1. *Teacher-individual-pair interactions.*

The table 1 information shows that both students interacted 39 times among them, 57 times with the computer and 4 times with the professor. This fact evidences that pair work promotes a more balanced kind of interaction. In contrast, the student working individually interacted 91 times with the computer, 6 times with the professor and hardly 3 times with his classmates. This reality shows that individual work facilitates computer dominant interaction. The student who was working individually on just 3 occasions asked questions of the student next to him who was working on a different computer and only in 6 occasions did he interact with the laboratory teacher.

In this study there is also evidence that student-student-computer is more balanced than student-computer. Therefore, student-computer-interaction by nature is more impersonal is stated by one of the students interviewed. The following student reflections during a semi- structured interview support this fact:

> T: *How do you feel during pair work around the computer?*
>
> S2: *Well during pair work one is more in equilibrium than during individual work because you can talk, discuss, agree or disagree with your partner but working individually with the computer, I feel like the computer is in control; it becomes the dominant part and the communication becomes cold and impersonal.*

Students working in pairs at a separate computer seems to be a better learning option than individual work because they can tutor each other. Huang (2000) discovered that when the computer is used for instructional purposes, it becomes dominant and the interaction between student and computer is unbalanced because a feature of the teaching software is to tell the learner what to do or where to go.

However in this study, it was observed a noticeable amount of pair interaction in front of the computer which diminishes the usually dominant computer control that multimedia software exerts over learners.

I believe that computers should be used as tools for helping learners to build knowledge instead of controlling them. By its technical and logical nature the computer is a dominant partner which tells the user which the following action to take is. The computer reacts to the digital instructions that are electrical states zero or one generating dominant limited interactions. When the student wants to start an open dialogue which goes beyond the digital computer yes or no or zero one pattern, the computer does not understand which constitutes a limited interaction computer's feature. Unfortunately, the computer becomes dominant because it ignores the user's varied reactions and questions; on the opposite, the computer obliges the user to follow its pre-programmed instructions becoming extremely dominant.

When students stop interacting with the computer and begin to interact between each other in order to comment about the activities, student-student negotiation of meaning takes place and that leads to group construction of knowledge based on collaborative interaction. Long's (1996) interaction hypothesis claims that the interactional modifications resulting from the negotiation of meaning facilitate acquisition.

The Interaction Hypothesis states that the conditions for SLA are crucially enhanced by having L2 learners negotiate meaning (i.e., resolve their miscommunications) with other speakers, native or otherwise (Long, 1996). Long's theory was confirmed in the present study because I observed that the learner/learner incidental negotiations which commonly occurred in front of the computer as well as the discussions held, especially with respect to their confusions about the tasks, helped them to improve their communication skills and fostered interaction.

Conclusions

This research illustrated that individual work in front of the computer lessens the chances to interact with their classmates and the interaction with the computers is maximum. Working individually in front of the computer results in computer dominant interaction. The interaction between student and computer is unbalanced because a feature of the teaching software is to tell the learner what to do or where to go. Fortunately, in the lab, during pair multimedia work, interaction is naturally enhanced and students can use what they have been learning for communication purposes, in a more formal manner, in the traditional classroom. In consequence, computers should be used as motivating tools and

tutor partners for helping learners to build knowledge instead of controlling them. While working in pairs with multimedia students become dynamic agents of their own learning and active participants of their language development and of their knowledge construction process.

Pedagogical implications

Whatever educational technology promises, it is important to acknowledge some limitations. A computer cannot replace the warm smile of a teacher. Just as technology is essential to learning, so is human interaction. When used creatively, and not solely for drill-and-practice, the computer is a powerful teaching tool. For the students, the integration of a computer into the classroom invites another learning facet. It paves the way to discovery, individualization, and a personal awareness of learning. For teachers, it is critical to understand what makes an application interactive, instructional and effective. The creation of the learning environment is crucial to the success of any lesson and it is much harder with restricted interaction. Teachers should also keep in mind that it is important to develop pedagogy and methodology related to multimedia learning software. With a close-up look at the complex reality of the EFL classroom, I hope that this study will help to educate EFL teachers in a more positive manner showing them a way to design lab activities as well as to promote pair work in front of the computer.

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