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**COMPUTER-ASSISTED WRITING INSTRUCTION: ITS EFFECTS  
ON THE WRITTEN PERFORMANCE OF FRESHMEN  
STUDENTS IN THE ELT PROGRAM AT UNIVERSIDAD  
INDUSTRIAL DE SANTANDER**

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**ESCUELA DE IDIOMAS**

**EDER ARNULFO LEÓN GONZÁLEZ**

**UNIVERSIDAD INDUSTRIAL DE SANTANDER  
FACULTAD DE CIENCIAS HUMANAS  
ESCUELA DE IDIOMAS  
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BUCARAMANGA  
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# ESCUELA DE IDIOMAS

Trabajo de grado elaborado como requisito parcial para optar al título de  
**Licenciado en Inglés**

**EDER ARNULFO LEÓN GONZÁLEZ**

Directora  
**CARMEN CELINA URIBE PICO**  
Magíster en Educación Bilingüe y Multicultural

**UNIVERSIDAD INDUSTRIAL DE SANTANDER  
FACULTAD DE CIENCIAS HUMANAS  
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## RESUMEN

**TÍTULO: COMPUTER-ASSISTED WRITING INSTRUCTION: ITS EFFECTS ON THE WRITTEN PERFORMANCE OF FRESHMEN STUDENTS IN THE ELT PROGRAM AT UNIVERSIDAD INDUSTRIAL DE SANTANDER\***

**AUTOR: EDER ARNULFO LEÓN GONZÁLEZ\*\***

### **PALABRAS CLAVES:**

Instrucción asistida por computador, procesos de escritura, actitudes, Inglés como lengua extranjera, metodología orientada por procesos, UIS.

Este proyecto estudia el impacto que tiene la Instrucción Asistida por Computador en las actitudes de los estudiantes hacia la escritura, así como en su desempeño escrito. Se basa en resultados obtenidos en estudios anteriores y en diversos teóricos en el área de aprendizaje de lenguas. Empleando un enfoque cualitativo, lleva a cabo una investigación de carácter descriptivo con 13 estudiantes matriculados en la materia de Inglés Pre-Intermedio en la UIS durante trece semanas.

Esta muestra es representativa de una población de 50 estudiantes. Así mismo, este estudio emplea varias técnicas de recolección de datos, tales como encuestas, análisis de muestras y cuestionarios, con el fin de descubrir alguna modificación en las actitudes de los participantes o en su desempeño textual a través del proyecto. El proyecto se divide en 3 etapas, siendo las dos primeras las encargadas de ejecutar el proyecto en un laboratorio de cómputo, en donde los estudiantes llevan a cabo dos tareas escritas a lo largo del proyecto.

Con el fin de asegurar un mejor desempeño por parte de los estudiantes, se empleó una metodología orientada hacia los procesos para complementar la instrucción en el aula de clases. Durante estas semanas, los estudiantes usan un procesador de palabras y algunos recursos de Internet para llevar a cabo las tareas de escritura, a la vez que aprenden diferentes estrategias para mejorar su composición de textos. Finalmente, se discuten los resultados y hallazgos del estudio y se plantean algunas sugerencias para futuras iniciativas en el área.

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\* Proyecto de grado

\*\* Facultad de Ciencias Humanas, Escuela de Idiomas. Director: Carmen Celina Uribe Pico

## **ABSTRACT**

**TITLE: COMPUTER-ASSISTED WRITING INSTRUCTION: ITS EFFECTS ON THE WRITTEN PERFORMANCE OF FRESHMEN STUDENTS IN THE ELT PROGRAM AT UNIVERSIDAD INDUSTRIAL DE SANTANDER\***

**AUTHOR: EDER ARNULFO LEÓN GONZÁLEZ<sup>1</sup>**

### **KEYWORDS**

Computer-Assisted Instruction, Writing Process, Attitudes, English as a Foreign Language, Process-oriented methodology, UIS.

This project studies the impact of Computer-Assisted Instruction in students' attitudes and writing performance. It is based on findings and conclusions from previous studies and theoretical foundations from diverse authors. Also, it employs a qualitative approach to conduct a research project with students registered in the English Pre-Intermediate course at Universidad Industrial de Santander, for a duration of thirteen weeks.

The population of this study comprises 50 students, with a sample population of 13 participants. This study makes use of several qualitative data collection instruments, such as surveys, sample analysis, and questionnaires, to gather information aimed at discovering any modification in students' attitudes towards writing or in their writing performance throughout the project. The study is divided into 3 stages, the first 2 dealing with classes at a computer lab where students are presented with 2 writing tasks along the project.

In order to ensure best results for students, a process-oriented methodology is adopted to complement instruction. During these weeks, students use a word processor and Internet resources to fulfill the writing tasks, as well as learn different strategies to improve their text composition. The final one is concerned with the analysis of results. Finally, results and findings from the study are discussed and some suggestions regarding further CAI initiatives are made.

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\* Final project paper.

<sup>1</sup> Faculty of Human Sciences, School of Languages. Supervisor: Carmen Celina Uribe Pico

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## **1. INTRODUCTION**

The English Language Teaching (ELT) Program at Universidad Industrial de Santander (UIS) has established a series of courses as part of the English as a Foreign Language (EFL) component of the program. Each course is currently granted a weekly session at the CENTIC multimedia lab in order to use technological devices to enhance language learning. In turn, the ELT program attempts to develop strong writing skills in its students, as evidenced in the various subjects and written requirements all along the study plan. A problem arises, however, when it is not possible to foster this ability as it should because of time constraints, or simply because it is a commonly disregarded in our context. Writing instruction should be provided since the first stages in the ELT program, but this task is usually delayed until further in their learning process, where students require more effort and determination to fulfill the program requirements. Therefore, it is important to find and suggest ways to promote the writing abilities in students since their very entrance into the ELT program, by making use of the most suitable instruments available to do so. Thus, it is necessary to determine the usefulness of computers and Internet resources existing at CENTIC for developing students' writing skills, within the courses in the EFL component of the ELT program.

## **2. JUSTIFICATION**

Over the past 2 years, computers have become an ineluctable presence in the ELT program at UIS. More and more subjects are constantly integrating new technology into traditional instruction, and teachers are also more aware now of the instructional advantages computers have to offer to second language (L2) teaching and learning. In fact, all courses in the English as a Foreign Language (EFL) component of this study program (English Pre-Intermediate, Intermediate, Upper Intermediate, and Advanced) have started incorporating the use of computers in their lessons. Every group has a two-hour session per week at a computer lab, in which all students can work at their own personal computer (PC).

Nevertheless, all this enthusiasm about computers and Internet has not materialized yet on a really efficient and practical use of computers in the classroom during the EFL component. Every teacher makes a different use of computers in their classes, according to their experience and expertise with them, which is not inappropriate. However, their teaching practices might be enriched should they were aware of the best computer applications for language learning, making their classes at the computer lab truly different from the ones given in the classroom.

It is true that there is excellent material available on the Internet and through computer software for the teaching of the other language skills; even so, the nature of the ELT program, and the greater availability of resources for writing, makes writing the most appropriate skill to teach in a computer-assisted context. Therefore, using some computer and Internet resources available in the teaching of writing, with a particular focus on the writing processes, can help students to develop their written performance.

### **3. OBJECTIVES**

#### **3.1. GENERAL**

- The main aim of this study is to examine the effects of Computer-Assisted Instruction (CAI) on the written performance in (L2) and attitudes towards writing of first semester students in the ELT program at UIS.

#### **3.2. SPECIFIC**

- To study students' attitudes towards writing, technology, and about how these two interact to meet their writing needs.
- To evaluate student writing samples in order to determine the influence of CAI on students' writing processes and sub-processes.
- To recommend basic elements for the implementation of further CAI on writing as part of the EFL component of the ELT program.

## **4. THEORETICAL FRAMEWORK**

In order to provide solid foundation to this study, it is necessary to take into consideration some theories related to the area of inquiry from different perspectives. Thus, this section is divided into three main headings: writing, computer-assisted instruction, and attitudes. These three factors constitute the main basis of this study, and will present the elements required for the understanding of the research results.

### **4.1. WRITING**

It is frequently thought among students and teachers that the written code is a mere representation of the oral language that uses written symbols to convey meaning (Cassany, 1989). However, this is a very narrow and simple definition for such a complex phenomenon. For White and Arndt (1991), it is “a thinking process in its own right” (p. 3), which demands a sustained intellectual effort. Writing is basically a complete new code for the speakers, independent from its oral equivalent. Because it entails the development of certain cognitive abilities, people writing in their native language frequently encounter the same difficulties as L2 writers. Nevertheless, once some conceptual knowledge and skills are consistent in their L1, these transfer easily to their L2 (Roberts, 1994), making L2 writing less traumatic. Whatever language a text is written, it must observe some rules to achieve its communicative goal. Cassany (1989) identifies five textual rules that any writer should meet, and which can also be used to assess the effectiveness and quality of a given text.

1. Adequacy: Any text must select the appropriate language variety and register for its intended readership.
2. Coherence: The information must be selected according to its relevance, and the communicative structure of the text must be properly organized.
3. Cohesion: The different phrases in a text must be connected so that the correct interpretation of each phrase in relation to the others is ensured, as well as the global comprehension of the text.
4. Grammatical accuracy: All grammatical knowledge must be employed to reinforce the communicative success.

5. Text layout: A text must be structured on the paper, in agreement with the social conventions that rule text presentation.

In the mid-sixties, Chomsky developed his most famous linguistic dichotomy. This distinction separates language competence, which is the abstract set of rules about the language that members of a linguistic community share, in contrast to their actual use of these rules to produce utterances, i.e. performance (Chomsky, 1965). Later on, Krashen (1984) adopted this distinction and linked it closely with writing. He distinguishes writing competence, or “the abstract knowledge a proficient writer has about writing”, from writing performance, “the ability to put this knowledge to use in an actual piece of writing” (p. 20). According to this idea, skillful writing lies in the mastery of these two components. Writers must have enough familiarity with the written code, although they are frequently unaware of this fact. Still, they acquire this comprehension in different ways. Flower and Hayes (1980) state that good writers have a significant amount of tacit knowledge about the language that comes from extensive self-motivated reading. Yet creativity, experience, grammar instruction, and memorization also play a role in writing competence.

Although writing competence is an important component of writing proficiency, this study will concentrate on writing performance for two reasons: first, a great deal of writing performance is observable. Second, it is more likely to be affected by instruction than writing competence.

Writing performance is a process composed of a set of strategies that are applied in order to produce a text (Cassany, 1989). It is a recursive, problem-solving task, for which there is not a unique model of representation. Even so, there seems to be a common understanding among scholars about the processes involved. White and Arndt (1991), based on Flower and Hayes’ works, have developed a dynamic model that displays a fluctuating writing process, and constituted the basis of writing instruction in the project. Within this model, subsequent particular steps in the overall process may be fitted. This model comprises the following processes and sub processes:

- **Generating Ideas**
  - Brainstorming
  - Questioning
  - Making Notes
  - Using Visuals
  - Role Play / Simulation
- **Focusing**
  - Discovering Main Ideas
- Considering Purpose
- Considering Audience
- Considering Form
- **Structuring**
  - Ordering Information
  - Experimenting with Arrangements
  - Relating Structure to Focal Idea

- **Drafting**
  - External Drafting
  - Considering effectiveness
- **Evaluating**
  - Assessing the Draft
  - Responding
  - Conferencing
- **Reviewing**
  - Checking the context
  - Checking Connections
  - Checking Divisions
  - Assessing Impact
  - Edition and Marking
  - Taking Final Stock of the Product

For the authors, every step in this process builds upon some other sub-strategies or techniques that help writers to transform their ideas into suitable texts. Using this model does not mean every single writer must apply all sub-strategies in a strict linear order, but rather that it is an inventory from which they may draw upon the most appropriate ones to compose their texts.

The teaching of writing has traditionally been neglected in the language classroom, as there is greater pressure on teachers to focus on the other language skills. Writing is only dealt with at the end of the class, or assigned as homework. Even worse, writing instruction often means students engaged in activities that involve writing, but not composing (Hillocks, 2005). When composition is indeed involved, its training commonly follows a product-oriented approach. Under this premise, any piece of writing is judged for its linguistic value, as a finished creative act, and rarely as an ever-perfectible collection of activities and strategies carried out in order to share ideas, feelings, or attitudes with a reader (White & Arndt, 1989). Conversely, a process-oriented approach focuses on enabling writers' creative thinking to develop the best strategies in order to solve the problems that may arise when they are writing (Flower & Hayes, 1980). According to this, it is necessary to spend a significant amount of classroom time to nurture these skills. Brookes and Grundy (1990), consider that the focus of writing instruction should be "on what is difficult for the learner" (p. 12), because the optimum time to assist writers is when they are struggling to express a particular meaning. Both White and Arndt (1989) and Brookes (1990) suggest that breaking up the composing process into particular tasks, and building a collaborative atmosphere in the classroom may render the most effective results in terms of quality and satisfaction towards writing. Nonetheless, process-oriented activities will just assist learners to develop their composing in accordance with their own level of language proficiency. Therefore, no sudden miracles should be expected (White and Arndt, 1989).

## 4.2. COMPUTER-ASSISTED INSTRUCTION

The use of new technologies in the language classroom has experienced a great increase over the past two decades; although not immediately, computers have established themselves as an important aspect in language teaching. Teachers have gradually become aware of the many ways in which computers can facilitate language instruction and learning. In fact, a dual role for computers is recognized, that as a tool and that as a tutor.

The general view among teachers concerning the use of computers is that they are tools that can improve students' capabilities and provide a wide range of possibilities for language learning (Panourgia, 2000). Ahmad et al. (1985) point out the auxiliary role of computers in education. According to them, they are a medium applied by the teacher to serve him in teaching, but are not meant to replace the teacher in the classroom. Even the most sophisticated computer application does not automatically guarantee good learning results. Likewise, Chen and Cheng (2006) conclude that pedagogical approaches and contextual factors are as important as technology in determining the effectiveness of computers. Accordingly, success or failure of computer use relies heavily on teachers' experience, dexterity, and willingness to work with them. What distinguishes computers as a tool from that as a tutor is that the latter, according to Taylor (1980), can be programmed to evaluate students' responses and thus provide with actions to follow, while the former is not directive by nature. Both uses have been adopted by some instructional approaches, such as Computer-Assisted Instruction (CAI) and Computer-Based Learning (CBL). When analyzed, then both orientations become evident, indicative of the role of computers as an instrument and as a trainer correspondingly.

CAI refers to the use of computers and computer applications for instructional purposes, in which these are used to enhance, complement, or facilitate teacher instruction. This term comprises the use of any software stored in a computer, as well as any resource available from Internet that may possess any instructional value. This approach presents many advantages to language instruction, but particularly to writing instruction. Panourgia (2000) affirms computers promote collaboration among students, and generate cooperative learning, assisted learning, and autonomous learning. Indeed, Warschauer (1995) states that computers "help foster a new teacher-student relationship in which students become more autonomous and the teacher becomes more a facilitator" (p. 93). Therefore, the learning environment turns richer, and roles in the classroom shift to an egalitarian level.

Previous studies indicate that computers and computer applications tend to have beneficial effects on writing length and quality, and to support students' writing process (Patterson, 2006). Research findings show that students have a tendency to write longer pieces of writing and revise them more readily when they compose at a computer (Goldberg, Russell, & Cook, 2003). However, this is true only when students are involved in meaningful writing tasks, and are allowed to make good decisions in the focusing stage (Patterson, 2006). In a 1994 study that examined the effects of word processing on students, Snyder (1994) found that computers foster more student engagement in the composing process. Word processing seems to assist students to generate a more complex text. In a similar vein, Costanzo (1994) points out that computers give inexperienced writers access to alternatives of creating more professional texts, similar to those of their more skillful peers.

Many teachers are now discovering the uses of Internet in their classrooms. Web-based activities allow students to gain on-line access to different sources of information and instruction. According to Alias and Hussin (2002), Internet activities support the composing process by giving students language help, on-line discussion, and information on specific subjects quickly and at a low cost. Internet is a vast source of information, which offers writers authentic target language materials, and a range of communication and collaboration resources (Panourgia, 2000). Concerning the writing strategies, Web-based activities appear to be especially beneficial during the structuring and reviewing stages. Alias and Hussin (2002) found Internet useful in giving writers guidelines in planning content and organizing ideas, as well as in shaping and reshaping their ideas.

As for e-mail and web log (blog) use in the writing class, writers who use these tools tend to be engaged in collaborative work and peer editing. According to Belisle (1996), e-mail discussions promote a non-threatening exchange of ideas among students, lower their anxiety, and allow them to focus on the message themselves, rather than on the form. He adds about this that a teacher advantage of both e-mail and blogs is the more efficient organization and storing of student work. These instruments can group messages and notes by student name, date, topic, and so on. Hence, teachers can assess the individual or group writing process more effectively and thus obtain better results at the end of it (Belisle, 1996). In his article, Huffaker (2004) points out the benefits blogs offer to instruction. For him, blogs allow writers to be more aware of their audience, and to be more reflective about the content of their texts (Belisle, 1996).

Finally, research demonstrates that each of these activities complements one another to contribute in the composing process. Their uses juxtapose each other to form a solid complement to process-oriented writing

instruction. As Osei (2001) puts it, “there are educational merits to integrating CAI with traditional instruction” (p.155). First, CAI raises students’ self-confidence and autonomy. Second, it promotes a sense of collaboration towards their classmates, just like a community. Perhaps the main advantage of CAI is its assistance in different stages in the composing process, and in the course design. Last, but noteworthly, CAI offers new possibilities for a real change of attitudes towards writing, and writing instruction, in students.

### **4.3. ATTITUDES**

The concept of attitude has been widely used to refer to a psychological construct that inheres and characterizes the person with regard to a value (Allport, 1935), or to an association a person establishes between a given object and a given evaluation (Fazio & Zanna, 1978). However, these definitions fail to explain certain important aspects of attitudes. Perloff (2003) define attitudes as “a learned, global evaluation of an object (person, place, or issue) that influences thought and action” (p. 38). Attitudes, therefore, predispose people to think and react in a certain way to any object or situation with which they are related. Attitudes are, according to Ellis (1996), likely to influence and be influenced by the level of L2 proficiency achieved by individual learners. Thus, there is a corelational relationship between L2 proficiency and attitudes. Further, Baker (1988) proposes five main characteristics of attitudes:

1. Attitudes are cognitive and affective.
2. Attitudes are dimensional rather than bipolar.
3. Attitudes predispose a person to some extent to act in a certain way.
4. Attitudes are learnt.
5. Attitudes tend to persist but they may be modified by experience.

The impact of computer writing on attitudes towards writing has been hardly studied over the last years. At the beginning, results were not satisfactory due to the limitations technology offered to researchers at that time (Goldberg et al, 2003). Regardless of these obstacles, syntheses of early research provide some evidence of constructive effects. Important findings emerged from Cochran-Smith (1991), in which students’ attitudes towards writing lowered as they moved from level to level. Despite this trend, students who used word processing for some time had a more sustained interest in writing in the classroom. In a similar vein, findings from Joram, Woodruff, Bryson, and Lindsay (1990) show that, given the right conditions, students feel more positively toward writing and word-processing systems after learning to use them. In a more recent study, Allison (1999) reported

significant improvement in students' attitudes towards writing, together with higher-order thinking skills, when they used computer writing. In sum, attitudes towards writing are likely to modify and/or be modified by meaningful and constructive writing experiences, which in turn may benefit students' writing performance.

Measuring attitudes towards writing is always challenging, since it is important to establish a relationship between motivation, attitudes, and language learning, but it is not always easy to find a reliable procedure to assess this construct. It is important to develop an instrument which allows for simple interpretation of its results and possess reliability and validity derived empirically, apart from being understandable for respondents (Kear, Coffman, McKenna, & Ambrosio, 2000).

## **5. RESEARCH METHODS**

### **5.1. POPULATION AND SAMPLE**

The population of this study consisted of fifty students registered in the English Pre-Intermediate course of the ELT program in the first semester of 2007. This figure included students who were attending the course for the first, second, or third time. In order to verify the validity of findings it was necessary to establish the error margin of the obtained data. Bartlett, Kotrlik, & Higgins (2001) propose a formula to determine the minimum sample size for a given system depending on the nature of the studied variables and a set of standardized statistical parameters. Using this formula it was found that in order to have a relative error margin of 5% the sample size had to be of 17 subjects, and for that margin to be of 10% the number of students selected for the study would have to have been of 11. Since the number of individuals selected for the project was set originally at 15 (13 at the end), it can be concluded that the relative error margin lays in-between 5 and 10 percent.

### **5.2. METHODOLOGICAL DESIGN**

This study conducted a descriptive research for its inquiry, within a qualitative framework in which data collection instruments suggested by Martínez (1994) were employed. Further, the study was carried out in a computer lab assigned to the class group once per week, for a duration of two hours each lesson. The project was divided into three stages, having the completion of two tasks as the boundary among them. The first phase explored the introductory computer and writing skills of students, as well as their initial attitudes towards writing during classroom activities. It also measured participants' speed while typing by means of a short test, as previous studies had shown that poor typing speed may interfere with computer writing and students' attitudes (Joram, et Al., 1990). As for the attitudinal and performance aspects, the following data elicitation techniques were employed to triangulate the results:

- Classroom observations
- Writing Attitudes Survey (WAS)
- Sample Analysis

These instruments provided baseline data to determine initial conditions and students' views of writing, so that it could be contrasted with

subsequent data. The second stage constituted a follow-up to the findings established in the first step of the design. Therefore, more specific information was collected, compared, and contrasted with previous data in order to detect any modification in students' writing performance and/or attitudes. The instruments listed below were utilized:

- Questionnaires
- Structured Observations
- Sample Analysis

The final phase was concerned with the evaluation of the study, and the establishment of conclusions and findings which could be taken into account by further research and/or instructional initiatives.

## **6. IMPLEMENTATION**

Upon entry into the writing program, respondents took an adaptation of the Writing Attitude Survey (WAS). This is a Likert-scale based survey consisting of 28 questions, designed originally for secondary school students. The Writing Attitude Survey was modified from Kear et Al (2000) in the number of questions, 24 in the project version, in order to suit the survey to the research context. Also, the WAS was reorganized in terms of four domains related one of the aims of the study. The first one asked participants about their attitudes towards different writing functions, such as description, persuasion, or clarification. Next, another segment of questions determined the preference subjects have for writing over other activities and a third one revealed attitudes towards writing specifically in English. Finally, the last set of questions related to their writing abilities and their perception on those. The entire WAS is shown in Appendix 1.

In the first class at the computer lab, the subjects were administered the typing speed test, recording the time spent for students to complete typing a paragraph with no spelling mistakes. Similarly, the respondents were required to open an e-mail account with Gmail in order to enable them to gain access to the project blog. When both the WAS and the typing speed tests were done, formal classes began. The course established two terms, each one providing a final written product based on a writing task as a result of two-hour sessions every week. These final texts were accepted to be valid writing exams for the first and second terms of the English Pre-intermediate course. The first task aimed at students learning and using the most suitable means to compose a descriptive text on a general topic derived from the course book, for a duration of six weeks. In turn, the second task intended students to produce a narrative text in their final version, again adopting items from the course syllabus, for the same duration as the first task.

Each lab session was devoted to instructing participants in one specific process along the continuum and some of the subprocesses related to it, as suggested by White and Arndt's model (1991). Classes were conducted mainly by the research designer, with only a subsidiary assistance from the head teacher. Also, each session left a draft of the texts for the monitoring of students' progress and classwork. In order to encourage self assessment in students, they were given a checklist to help them be aware of and make corrections to their texts before submitting them. During the first term, all drafts were sent to an already established e-mail account for their record and storage. From the final text submitted for the first term on, however,

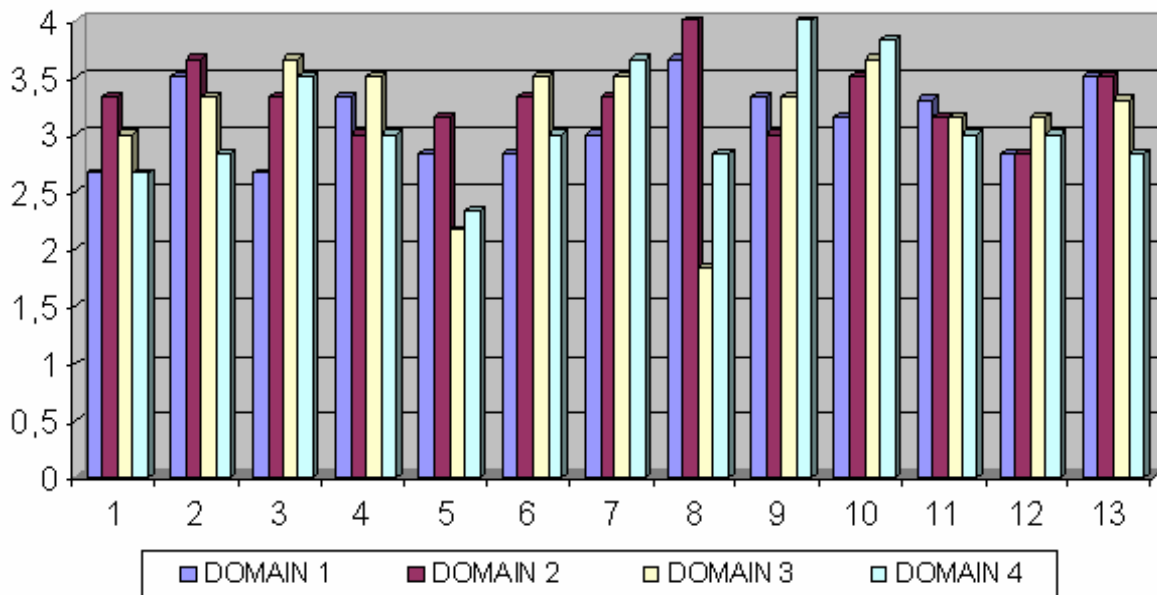
every sketch in the process was posted in a blog exclusive for the group, to which all participants had access. Even though group work was encouraged, activities in the classroom were primarily computer-based or Internet-based, such as searching for information, composing texts, and commenting on their classmates' work, among others.

Towards the end of the project, the subjects were administered an open-ended questionnaire to determine their overall impressions on the course. The questionnaire comprised 4 questions, intended to obtain broad information about participants' final attitudes towards writing and towards computer use in the classroom so that these data could be contrasted with initial results. Finally, another questionnaire was sent to students' e-mail address for them to reply with their answers. This one consisted of 5 items, 4 closed questions and 1 open, whose objective was two-fold: to elicit detailed answers from participants based on their previous responses, and to compare students' views on their writing skills and performance throughout the writing project with previous studies. Both questionnaires, displayed in appendices 2 and 3, were designed considering the most important aspects, i.e. purpose, clarity, simplicity, relevance, and user-friendliness.

## 7. ANALYSIS OF RESULTS

### 7.1. ATTITUDES TOWARDS WRITING

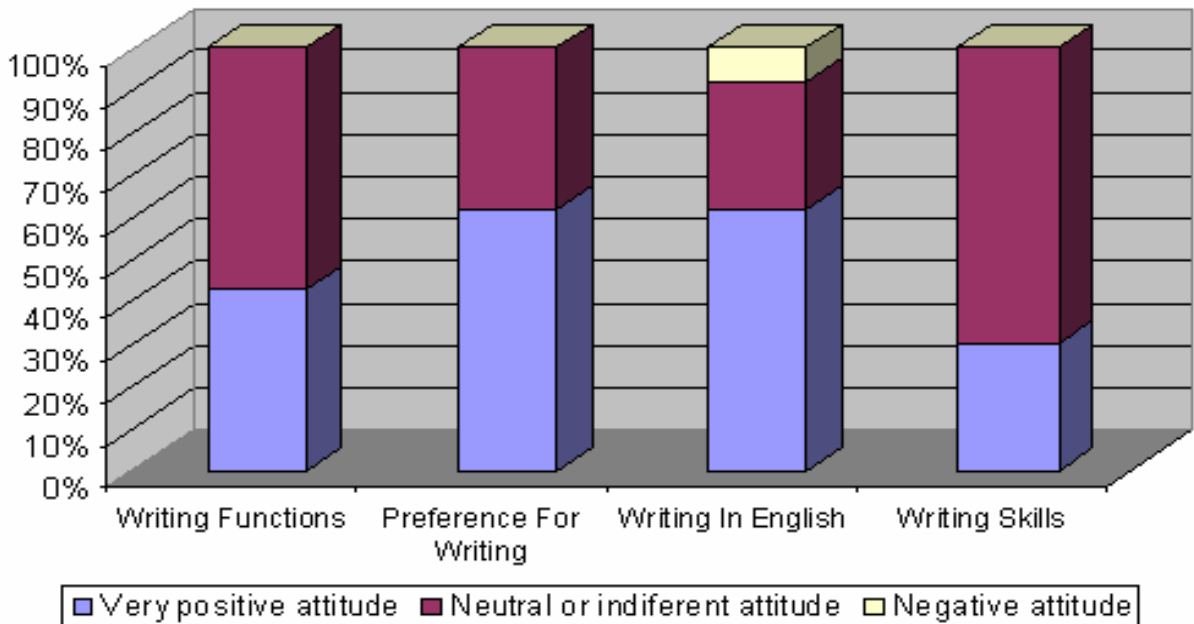
The first glimpse on students' attitudes was obtained through the Writing Attitude Survey. Results from the WAS showed students participating in the project with an overall good motivation towards writing, as indicated by the group's percentile rank mean, 77 out of a maximum of 96 points. 78% of subjects answered positively to more than the 70% of questions in the survey, indicating that students' motivation towards writing may be high as they enter the program and tends to decrease over time, as indicated by Kear et Al. (2000). Table 1.1 illustrates the general results obtained by students.



**Table 1.1 WAS individual results.**

Concerning each specific domain, results were consequently similar. In the first one, writing functions, 43% were ranked as having highly positive attitudes. The other 57% of students showed an indifferent attitude according to their answers in the survey, although no negative response was given. This was evidence that showed students did not react negatively to writing texts with different discursive purposes, whether this was due to lack of knowledge on the writing techniques or simply no acquired predisposition towards this activity as they were new to the program. Looking into the second domain, preference for writing, the results were even more interesting. Students showed affirmative responses towards the

activity of writing for its own sake, and over other related activities, concerning the 62%, as against 38% of subjects with indifferent thoughts. Again, no negative attitude was shown in this domain, indicating that students were familiar with writing any kind of text and/or enjoyed it to some extent. Turning into the third domain, writing in English, 62% of students felt comfortable when asked about writing in English for different purposes, and another 30% manifested a neutral position with respect to the same situation. Only 8% revealed a negative reaction concerning their L2 writing, but the percentage was relatively small and lower than initially expected. This pictured an unusual situation, in which students were not afraid of writing in a foreign language, or at least did not react negatively towards it. Finally, in the fourth domain, students were less confident about their writing skills. Only 30% of the participants felt comfortable with their abilities to write a text, leaving the other 70% to show a cautious attitude when asked to examine their skills on the subject. This domain rendered the highest percentage of indifferent or doubtful attitudes among the participants, letting us know they were not confident about their own abilities to produce a piece of text, or that they had not had enough experience doing so. Table 1.2 summarizes these results:



**Table 1.2 WAS results by domains.**

Findings from the WAS were further validated by class observations made in each session at the computer lab. These observations focused mainly on attendance, class activities, and students' involvement in the activities.

Class observations evidenced that some of the results provided by the WAS were not that positive. At the onset of the project, some students expressed negative feelings and evaluations towards composing a text, providing different reasons for that. This fact was not clearly revealed by the WAS, whose results indicated a more optimistic situation, but it did suggest one of the main reasons why students' felt uncomfortable while composing a text: because they felt they lacked the necessary language and abilities to do so, as suggested in the fourth domain of the WAS. When students learnt that classes on Fridays would be dedicated to writing texts in a computer lab, their reaction was of surprise and curiosity, but this reaction can be explained by the fact that they had not had classes there so far, and because technology itself is appealing to young students. However, this favorable attitude did not change over time in most of the students, revealed by the high attendance and their observable engagement in the activities carried out along the length of the study. Attendance was an important element of analysis in order to determine participants' attitudes. Even though attendance was not reinforced with punitive measures, it was as high as around 85% of students attending classes during more than 90% of the project length. This indicates that students felt really motivated to continue with the project, and that their attitudinal level was very positive concerning writing texts. However, a few people skipped classes in more than three times. As a result, their drafts had important language deficiencies, and their quality had to be promptly improved.

From what could be observed, students' engagement in the program was made possible for two reasons: the access to Internet and word processors, and the process-oriented methodology. Both aided students to see good writing as an attainable task, and hence their resistance to write was reduced, since they found fewer obstacles in their way to their final texts. Internet presented several elements involved with the process of collection, organization, and presentation of information which helped students along the continuum from the early to the final stages, and promoted independent work in and outside the computer lab. In turn, word processor made participants perceive their own texts as changeable and subject to new modifications due to its inherent features, yet not to the degree expected. In fact, students felt their text had to be perfect in the first or second draft, thus putting a greater effort on accuracy rather than on the effectiveness of its ideas. On the other hand, the right appropriate methodology for writing instruction is essential for the success of any writing initiative. The approach followed in this program was recognized by participants to have been one of the most important aspects of the entire project. According to them, they could put into practice several techniques for text composition they never learnt before, such as considering purpose and audience, grouping and relating structure to focal idea, etc. These techniques allowed them to make decisions at many levels of their writing process, and even to

change completely their texts if they were not satisfactory enough. All these ingredients maintained students' interest and positive attitudes towards writing through the project duration.

These perceptions on the attitudinal effect of computers and a suitable method provided by class observations were later confronted with the questionnaires. When asked about their general impression on the course, all participants agreed on the benefits the project offered to their writing skills. Nevertheless, answers varied with regard to the particular stage benefited. The answers were tabulated and categorized in Table 1.3.

| %   | Categories        | Examples  |
|-----|-------------------|---|
| 42% | Structuring texts | <i>Our writing skills have been developed somehow to write correctly and with a suitable structure.<br/>We have learned to organize our writings coherently.</i>                |
| 29% | Focusing          | <i>I could concentrate on one idea when the purpose of my text was clear.<br/>Internet helped us to find a good topic for writing.</i>  |
| 29% | Text edition      | <i>Along these months I have discovered that my capacity to edit texts has improved significantly.<br/>It was easy to correct my mistakes and move paragraphs in the texts.</i> |

**Table 1.3 Examples of responses on perceived benefited processes.**

One of the characteristics of attitudes is that they can be modified by experience. When the subjects were inquired about the changes in their attitudes towards writing, and specifically writing in English, the result was very satisfactory. 75% of students reacted more positively to writing in English than at the beginning of the project; the other 25% admitted having kept a high level of motivation and affirmative opinions about writing throughout the duration of the course. At the moment of pointing the cause(s) for their change or stability of views with respect to writing, there were different answers to those hitherto discussed. Two factors were perceived by participants to be the reason for their shift/persistence of attitudes: the extended practice in writing and teacher's guidance along the process. Among the answers they gave were the following examples: *I have seen a change in my writing, and I think that this is because we have been putting into practice all that the teacher has taught us*, or *This change was due to the used techniques and the advice of the professors; both of them have been good*. Apparently, students favored a facilitator role from a teacher over an innovative approach. Their answers let us infer that what

motivated them indeed was the personal qualities of the instructor, rather than the characteristics of the program, or the use of new technologies. However, if these answers and the previous ones are considered carefully, then it is possible to establish an explanation for this situation. When participants mentioned the extended practice as one of the reasons for their attitudinal change, they were referring to all the features of computer and Internet use (browsers, e-mail, blog, word processors, and translators) which made this writing practice an interesting and motivating activity for them, as they themselves reported in other opportunities. In the same vein, students mentioned the teacher's assistance during the process, unconsciously referring to the set of conditions implemented in the classroom which were part of a process-oriented methodology. This included a new role for the teacher, away from an authoritative figure and closer to a facilitator model, as well as the opportunity for them to make important decisions in several stages in their composing process.

A final point worth mentioning here concerning attitudes is the students' satisfaction towards their own finished texts. Satisfaction relates directly to their views on the overall progress they may have obtained through the project. Responses were also positive in this aspect, since 57% of students admitted their satisfaction with their results and 28% said they were totally satisfied with their final products. Only 15% remained dissatisfied with their work. Some example comments they gave are included in Table 1.4.

| %   | Categories        | Examples   |
|-----|-------------------|--|
| 28% | Totally Satisfied | <i>At the beginning I didn't have any idea of what to write and I was confused, but after working hard in my story I see that I can write a good story in English.</i> |
| 57% | Satisfied         | <i>I am so happy because I have got a progress in this project; I have discovered some mistakes that I didn't know that I had.</i>                                     |
| 15% | Dissatisfied      | <i>If the project continued, I could write more things and my writing could be better.</i>   |

**Table 1.4 Example of students' comments with respect to their satisfaction.**

In their replies, the most frequent reason provided was the noticeable improvement they perceived in their writing skills, as they felt they could compose better and longer pieces of writing than before. In turn, dissatisfaction from some participants derived not with the project *per se*, but rather on their own performance in the course, as they considered they could have shown better results.

## 7.2. WRITING PERFORMANCE

Regarding the typing speed test, ten students sent their results, producing a mean of 14.03 wpm (words per minute), and a median of 13.1 wpm, which is relatively low for typing standards. Nevertheless, this poor speed did not appear to have any effect on the students' performance or attitudes towards writing, as further analysis demonstrated. The sample used for this analysis consisted of four texts, two from the first task and two from the final one. Within each task, the first draft was contrasted with the final version in order to draw conclusions. Samples were assessed adopting four of the five textual rules developed by Cassany (1989): adequacy, coherence, cohesion, and grammatical accuracy. Moreover, text length was also taken into consideration for the analysis. In the first task, 12 students handed in their papers, whereas 8 did it for the final task. Both findings are presented simultaneously.

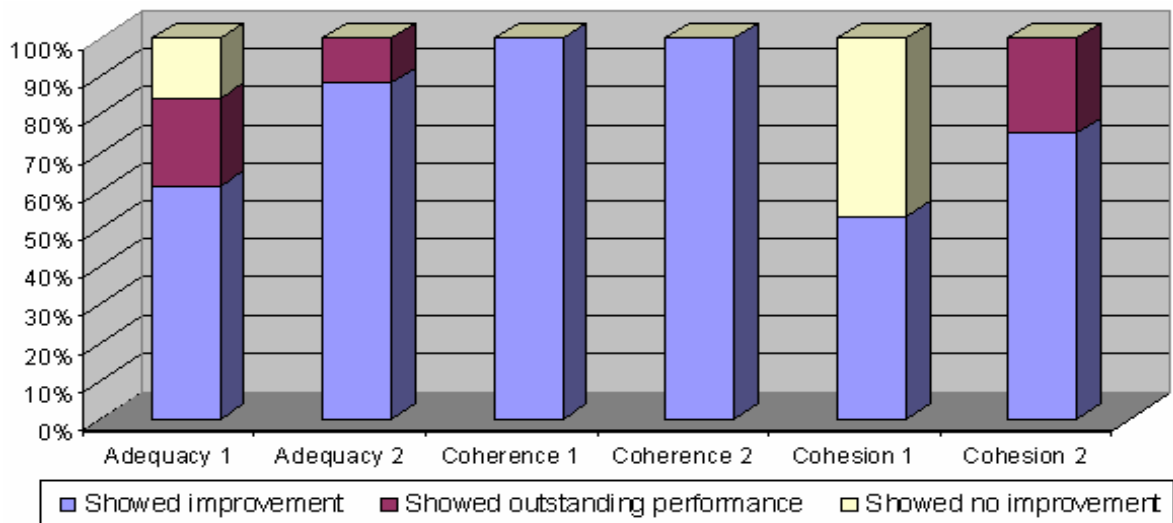
Concerning adequacy, 61% of subjects showed significant progress in their language selection, with a more suitable vocabulary, and an important awareness of their potential audience in their first task. Further, 23% showed an outstanding sense of audience and a careful selection of language since the first drafts, but did not improve in this aspect throughout the various drafts. Finally, 16% (1 student) showed little progress, as his/her use of online translators was excessive, and her/his selection of language items was indiscriminate for moments. As for the second task, text adequacy was comparatively better. Almost all the participants (88%) revealed an improvement in their awareness of audience, due to the fact that, unlike the first ones, their texts were published in the course's blog since the first draft for their classmates to read and comment on them. Only one student (12%), different from the one in the previous case, showed difficulties to select the appropriate ideas to express his/her ideas when compared with his/her previous work.

All students, to a greater or lesser extent, evidenced advances in their texts' coherence in both the first and second tasks. Ideas were more consistent and better structured in their final texts than at the beginning of the course. All participants revealed an improvement in their texts with respect to their relevance with the story being composed. With some natural difficulties, students seemed to have selected their ideas more carefully, as most of their compositions developed thoughts in a logical and suitable order.

Results for text cohesion were to some extent similar to those of coherence. In the first stage, texts from 7 participants (53%) developed ideas and information around a single focal topic or storyline, with little irrelevant information added, and hence their overall comprehension was enhanced.

In contrast, 5 subjects (47%) did not show such close connection among sentences and phrases in their texts, with isolated ideas and sparse information. In the final stage, however, cohesion was considerably improved. Global comprehension of 75% of stories was satisfactory and each piece of information was connected to a greater idea. Furthermore, 2 students (25%) submitted outstanding narrations, with regards to this textual rule. This progress may be attributed to the nature of the second text, in which participants were better prepared to write by previous experiences.

The textual feature which was least benefited from the project was that of grammatical accuracy. To some degree, students identified and corrected their mistakes, but they failed to recognize mistakes they were supposed to have corrected, as indicated by the checklists provided. Even though this situation changed for good in the final text due to interventions and direct corrections, some grammar mistakes common to all students could be detected but not corrected. This can be explained by their condition as pre-intermediate students and the short time assigned to the development of the course. Nevertheless, text spelling was perfect in almost all of the texts, showing the effect of word processors in their composing process. Table 2.1 illustrates results for the first three aspects considered, since their data may be confusing for the reader.

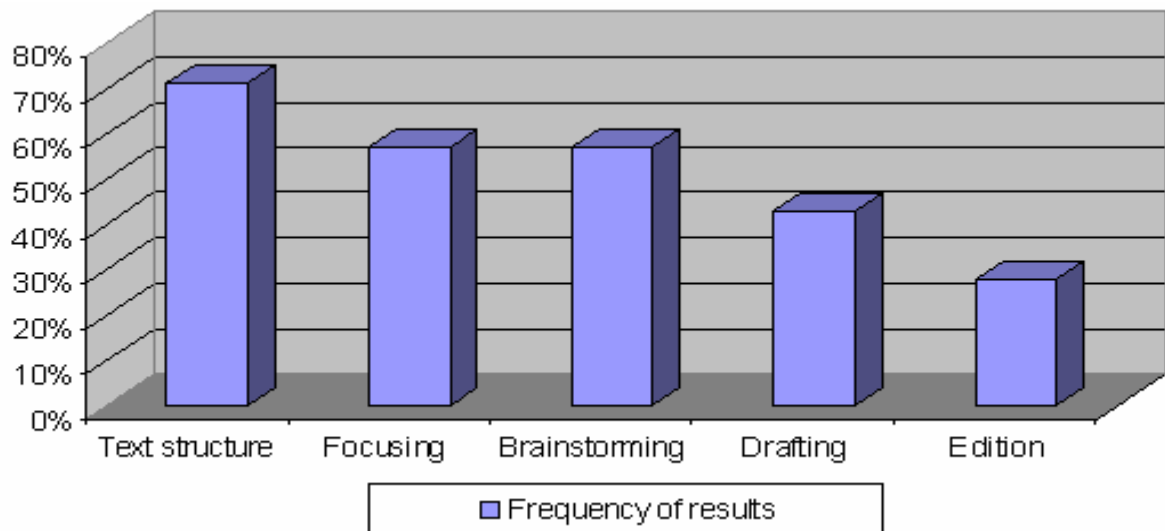


**Table 2.1 Text sample results for adequacy, coherence, and cohesion.**

Finally, text length rendered apparently contradicting results. In the first task, the texts oscillated in length from student to student, yet all of them showed an increase of 20% in average in the number of words written by the subjects. This number was obtained after calculating the percentage of

words that students added in their final texts in comparison with their first ones. On the other hand, 5 students (63%) increased the length of their texts in their second task 14% in average, whereas the other 3 showed a slight reduction in the number of words, equivalent to 12% in average. This trend reveals a subtle disagreement with previous findings, which have found text length to increase over time when students compose at a computer (Goldberg et al, 2003). However, when the deleted texts were examined at a semantic level, most of the ideas were additional or not significant to the principal story being told. In this context, what it is shown is that computer use or process writing does not relate directly to longer pieces of writing, but it may assist better quality writing, since in this particular case students' editing skills worked in a meaning-level as well as in a form-level.

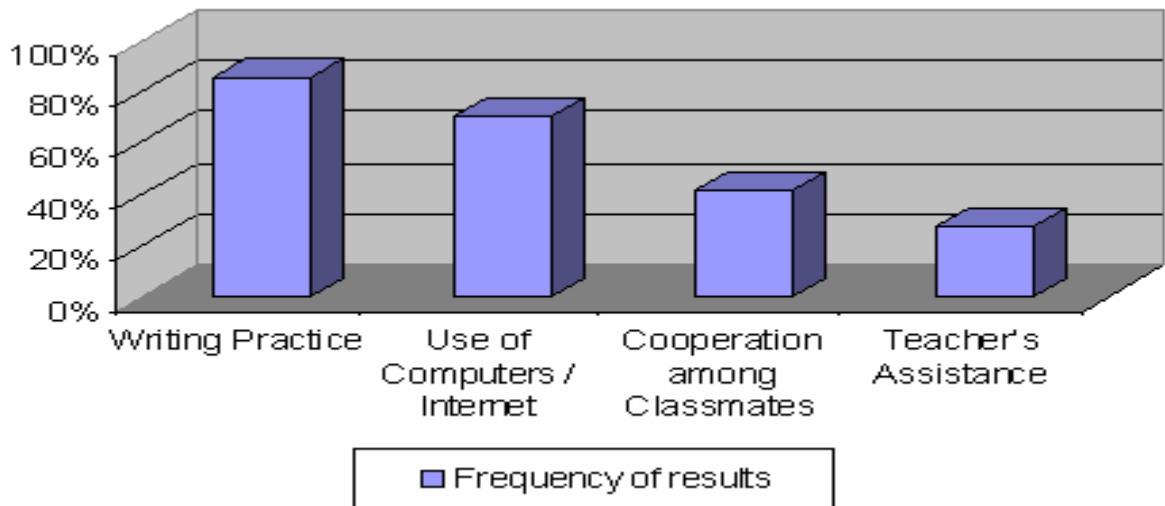
Students were also asked about their perceptions on their writing abilities after the project in the questionnaires, and some answers go in line with findings from the sample analysis. When participants were asked about which particular skills they considered were the most promoted with the project, their answers were similar to the findings above mentioned. In this opportunity, more than one choice was allowed, and Table 2.2 presents the frequency of each value:



**Table 2.2 Frequency results for perceived benefited skills.**

In this perspective, coherence and cohesion, as represented by text structuring, brainstorming, and focusing, were regarded by most participants to have been boosted noticeably due to the project. This is an important finding for this study, for it means the program fostered mainly meaning-oriented processes, supporting higher levels of thinking in their composing. Nonetheless, drafting and editing were also considered, and if

we observe previous analysis, it is clear that editing was difficult for the students in some aspects, yet it dealt generally with semantic relationships instead of syntactic structures or grammar points. At the moment of pointing out their perceived causes for that improvement, constant writing practice obtained a frequency of 86% in subjects' responses. In second place, use of computers and Internet resources was acknowledged by 71% of students, whereas 57% mentioned the focus on processes. Finally, cooperation among classmates and teacher's assistance were not very helpful to students, although they were recognized by 42% and 28% of participants correspondingly. Table 2.3 reviews these results.



**Table 2.3 Frequency results for perceived causes of improvement.**

Surprisingly, subjects did not see teacher's assistance as valuable a factor as they did it with regard to their attitudes, which may suggest independent work was encouraged by the project's methodology, in which students did not require the constant aid from the teacher to solve their doubts and correct or suggest changes in their writing. On the other hand, students favored writing practice as the principal cause for the improvement in their writing skills. A common sense finding, as it is quite evident that students will become skilled after extensive exposure or practice is provided. However, this answer must be considered in connection with the following results if some significant conclusion is wanted. Any kind of instruction will not render the same outcomes, as interpreted from participants' answers. In one of the questions, 83% of subjects asserted the results obtained in their writing would have been inferior if CAI had not been implemented in the classroom, with only 17% affirming the opposite. Students informally highlighted the numerous benefits computers offered to their writing skills, particularly computers' ability to meet their different learning and writing needs along the project.

## **8. LIMITATIONS**

The first obstacle encountered was the number of students who would constitute the sample for the study. Initial calculations had estimated fifteen participants to be the subject of inquiry. However, 2 students withdrew from the study at its onset because they dropped the English Pre-Intermediate course, hence forcing the sample to be diminished to thirteen students. This reduction in the sample increased the margin of error of the study to around 5 - 10%, which is still a very acceptable margin in educational research in qualitative contexts.

After that, a more serious difficulty was met. This time, uproar within the university affected considerably the development of the course. As a matter of fact, the second phase of the project had to be extended for two more weeks as these disturbances prevented students from entering into the university's facilities in two occasions. Furthermore, the decision from the University's Academic Council to call for vacation without having finished the semester interrupted considerably the process of data collection, regarding the final questionnaires. Therefore, only the questionnaires received before vacations were taken into account for the analysis. Yet despite all these negative circumstances, the second phase of the project was completed with no major hindrances.

## **9. CONCLUSIONS**

To begin with, the study showed an improvement in students' confidence and satisfaction towards their own writing abilities, as a direct result of several circumstances. The technological component of the project was determinant to smooth the progress of work inside and outside the classroom, and its particular applications offered specific benefits. Browsers assisted students to gather data required to produce their texts, which made its collection easier and faster. Online translators were also available to solve language needs, even though special attention and training on their use was provided as this tool had been misused at the beginning of the course. E-mail offered another possibility for students to communicate freely using their L2, while it made communication among the group significantly easier. In a similar vein, a significant teacher-advantage e-mail offered was the possibility to monitor and assess students' progress in each session throughout the process of composition, as affirmed in Belisle (1996). In turn, word processor helped participants focus on the ideas being conveyed, and make the necessary changes easier, thus decreasing their resistance to build a meaningful editing work. The methodological approach was another central factor which contributed greatly to these results. Indeed, breaking the writing process into progressive tasks and promoting independent learning among students fostered their engagement in writing a meaningful text which really represented their ideas. In this view, writing became an attainable task for students, and even an enjoyable or at least interesting activity. In sum, CAI and process-oriented methodology enhanced students' motivation and satisfaction towards their writing skills, which in turn made them participate actively in more creative and meaning oriented work in the classroom.

Concerning writing skills and processes, it can be concluded that brainstorming, text structuring and focusing were the most advantaged phases in students' process. As a result, their texts evidenced a noticeable gain in their coherence and cohesion, showing CAI to assist chiefly meaning-focused activities in the classroom, in line with findings from Alas and Hussin (2002) and Snyder (1994). In fact, CAI proved to be of great importance at the moment of selecting, organizing, and shaping ideas, helping students to be more thoughtful about the content of their texts. Text length did not appear to be stimulated greatly by CAI. Even though there were some longer texts at the end of the project, what was actually improved was text quality. These pieces of writing showed more complexity when compared with their previous counterparts, regardless of their length. In a similar fashion, typing speed was found not to be a decisive variable in the quality of their final texts, unlike stated in Joram et Al. (1990). In spite of

their low typing abilities, participants did not show any limitation or constraint related to this skill while composing their texts.

An important conclusion here is that a process-oriented method is a *sine qua non* for technological applications to be effective tools in the classroom. It proved to be as necessary as computer resources for a good writing program as it encouraged higher mental processes in students and adapted easily into new teaching conditions. In short, not only does CAI improve students' attitudes towards writing, but also facilitates students' mental processes when writing, in line with conclusions from Patterson (2006).

These results support the feasibility of implementing this sort of initiatives within the ELT program. Indeed, outcomes from this project demonstrate the effectiveness that a similar program might render, if applied in order to promote writing skills. However, certain conditions must be met for these new programs to show significant results in students. In first place, CAI and a process-oriented methodology must go hand in hand for best results. It was extensively demonstrated in this paper how these two factors interact to assist students' writing needs. Secondly, continuous practice must be provided to students, as this was seen as one of the most important factors determining their improvement in writing texts. Therefore, a minimum of 1 hour per week is suggested to be used to develop this ability, although more time dedicated to this area will consequently render better outcomes. Another important criterion to follow is to appeal to students' interests and likes. This communicative strategy makes students take an interest in expressing their ideas more willingly and with more care than when done in normal contexts. Last, students, and teachers as well, must go through a training period, in which they learn to use the most common applications and commands of computers and Internet. This measure ensures appropriate use of resources from both sides and maximizes the effectiveness of these tools.

In conclusion, new concepts and approaches in the classroom are always difficult to make visible and even more to implement, but it is evidence which makes them worth considering. In teaching writing, we usually find resistance to modify views and beliefs concerning the goals and means of instruction. Therefore, this study intended to suggest advantages and limitations CAI, together with a process-oriented methodology, present to teachers and students involved in a writing program. However, further research may explore the effects of CAI on any other aspect of language learning, which would help determine the best uses of technology in the language classroom.

## **10. GLOSSARY**

- **Computer–Assisted Instruction (CAI):** Teaching process in which a computer is used to enhance the education of a student. In opposition to Computer-Based Learning (CBL), computers are conceived to complement teaching under CAI environments.
- **English as a Foreign Language (EFL):** It refers to the English language teaching-learning process in a non-English speaking country.
- **EFL Component:** This refers to the series of four English courses making part of the ELT program. English Pre-Intermediate is the first in the series, and the target course of this study.
- **English Language Teaching (ELT) Program:** A major in English language teaching offered by the Universidad Industrial de Santander in Bucaramanga, Colombia.
- **First Language (L1):** The mother tongue, or the first language that a person learned.
- **Second Language (L2):** This is any language learned after the first language is acquired.

## 11. APPENDICES

### APPENDIX 1: WRITING ATTITUDE SURVEY AND SCORING SHEET

Instrucciones: Usted encontrará a continuación veinticuatro preguntas relacionadas con la actividad de escribir. En la hoja de respuestas, seleccione la respuesta que mejor refleja su reacción ante éstas.

#### ¿CÓMO SE SENTIRÍA USTED

1. escribiendo una carta al escritor de un libro que usted ha leído?
2. escribiendo sobre algo que usted ha escuchado o visto?
3. escribiendo a alguien para cambiar su opinión?
4. escribiendo por qué algo ha sucedido?
5. escribiendo una carta para expresar su opinión acerca de un tema?
6. escribiendo sobre las cosas que han ocurrido en su vida?
7. escribiendo por gusto?
8. si tuviera un trabajo para un periódico o revista?
9. si se volviera un mejor escritor de lo que ya es?
10. escribiendo un texto en vez de dar un discurso?
11. escribiendo un texto en vez de hacer otra cosa?
12. escribiendo sobre algo que ha hecho en otra materia?
13. escribiendo *en Inglés* acerca de algo que ha hecho en otra materia?
14. si pudiera escribir más *en Inglés* en la universidad?
15. anotando *en Inglés* las cosas importantes que su profesor dice acerca de un tema?
16. escribiendo *en Inglés* una larga historia o un reporte para la universidad?
17. si tuviera que escribir *en Inglés* regularmente?
18. al no tener que escribir mucho *en Inglés* en la universidad?
19. si sus compañeros leyera algo que usted ha escrito?
20. si su profesor le pidiera que cambiara algo de un escrito suyo?
21. si sus compañeros de clase le hablaran (a usted) acerca de hacer mejorar su escritura?
22. escribiendo una revista para la clase de Inglés?
23. escribiendo algo desde el punto de vista de otra persona?
24. revisando sus escritos para asegurarse de que las palabras que ha escrito están correctamente deletreadas ?

## WRITING ATTITUDE SURVEY SCORING SHEET

Student's Name: \_\_\_\_\_ Age: \_\_\_\_\_  
 Date: \_\_\_\_\_ Repeater? Y \_\_\_\_\_ N \_\_\_\_\_

| <b>Scoring guide</b>     |     |
|--------------------------|-----|
| 4 points: Very happy     |     |
| 3 points: Somewhat happy |     |
| 2 points: Somewhat upset |     |
| 1 point: Very upset      |     |
| Item scores:             |     |
| 1.                       | 13. |
| 2.                       | 14. |
| 3.                       | 15. |
| 4.                       | 16. |
| 5.                       | 17. |
| 6.                       | 18. |
| 7.                       | 19. |
| 8.                       | 20. |
| 9.                       | 21. |
| 10.                      | 22. |
| 11.                      | 23. |
| 12.                      | 24. |
|                          |     |
| Full scale raw score:    |     |

**APPENDIX 2: QUESTIONNAIRE 1**  
UNIVERSIDAD INDUSTRIAL DE SANTANDER  
ELT PROGRAM  
CAI PROJECT

QUESTIONNAIRE 1

1. What are your general impressions about the writing process project we have been working on during the last months?
2. Has there been a change in your attitudes towards writing, and particularly writing in English? What do you consider is the cause for that?
3. Do you agree or disagree with the following statement? Explain why:  
  
*The use of word processors and Internet has been important for me to improve my writing skills.*
4. Do you think this course would have been better if we had used paper writing instead of computer writing? Give at least one reason.

**APPENDIX 3: QUESTIONNAIRE 2**

UNIVERSIDAD INDUSTRIAL DE SANTANDER  
ELT PROGRAM  
CAI PROJECT  
FINAL CAI WRITING PROJECT QUESTIONNAIRE

1. a) What is your current degree of satisfaction towards your texts?

- >Totally satisfied \_\_\_\_\_
- >Satisfied \_\_\_\_\_
- >Partially satisfied \_\_\_\_\_
- >Not satisfied at all \_\_\_\_\_

b) Has this degree of satisfaction changed during the process? Explain.

2. a) Did you feel any improvement in your writing skills during the course?  
Here is a list to help you remember (more than one answer is possible):

- >thinking about the initial topic or ideas \_\_\_\_\_
- >focusing on the principal idea or on the plot of a story \_\_\_\_\_
- >structuring your text into paragraphs and sentences \_\_\_\_\_
- >writing your first drafts \_\_\_\_\_
- >revising and editing your texts \_\_\_\_\_
  
- >*I didn't feel any improvement in my writing skills* \_\_\_\_\_

b) If you did, what do you think helped you the most to improve? (more than one answer is possible)

- >the use of computers and Internet resources \_\_\_\_\_
- >the focus on processes and subprocesses \_\_\_\_\_
- >extended practice in text writing \_\_\_\_\_
- >cooperation among classmates \_\_\_\_\_
  
- >*Other* \_\_\_\_\_

3. When you were composing your text, did the fact that your text would be published in a blog, and read by your classmates, influence your writing? If so, in what way?

*Please do not hesitate to write as many details as you want in your answer*

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