

COMPUTERS AND COMMUNICATION IN THE CLASSROOM: LEARNING TO WRITE IN A FOREIGN LANGUAGE:

MIREIA TRENCHS PARERA
Universitat Pompeu Fabra, Barcelona

ABSTRACT. *This study analyses how young beginning language learners produce their first written texts in a foreign language and describes what the resulting texts look like. The present case study focuses on a group of sixth-graders who wrote their first L2 texts in Spanish when corresponding with their language teacher on the electronic mail capability of their school's network. Research data included videotapes of learners writing e-mail, interviews with the writers, and the e-mail written and received by these students. Apart from describing the learners' writing behaviours, the present study describes how they used the technology in this communicative language learning activity.*

KEYWORDS. *Writing, language learning, language teaching, foreign language, computers, communication.*

RESUMEN. *En el presente estudio se analiza cómo un grupo de jóvenes estudiantes de español como lengua extranjera produce sus primeros textos en esta lengua y se describen las características lingüísticas de esos textos. Este estudio de caso se centra en un grupo de estudiantes americanos de sexto grado quienes escriben sus primeros textos en español cuando intercambian correo electrónico con su profesora. Los datos analizados incluyen cintas de vídeo que muestran a los alumnos escribiendo el correo electrónico, entrevistas en las que comentan su proceso de escritura y el correo electrónico que escribieron y recibieron estos estudiantes. Además de describir comportamientos relacionados con el proceso de escritura, el estudio analiza la utilización de la tecnología en esta actividad comunicativa de aprendizaje de lenguas.*

PALABRAS CLAVE. *Escritura, aprendizaje de lenguas, didáctica de lenguas, lengua extranjera, informática, comunicación.*

1. INTRODUCTION

During the last two decades of research on learner strategies there have been many attempts to describe how learners face the challenge of speaking and writing in a foreign language. The first descriptive accounts based on researchers' observations (Naiman *et al.* 1978; Rubin y Thompson 1982) and the subsequent taxonomies that

described the learners' internal processes when producing L2 (Faerch y Kasper 1984; Ellis 1985) have been followed by the integration of learning strategies within a widely accepted cognitive theoretical framework (Rubin 1989; O'Malley y Chamot 1990), especially of those behaviours related to written production (Flower y Hayes 1980; Cumming 1989). These studies have equally led to efforts to account for self-regulatory strategies and social-affective variables in the process of producing both oral and written L2 discourse (Brown y Palincsar 1982; Oxford 1990).

Despite these efforts, a look at the literature in this field still reveals inconsistencies and the need for further research since not all kinds of learners have been equally studied. Within the writing discipline there has been an explosion of research on the way adults write in either their native language (Flower y Hayes 1980; Murray 1993) or in a foreign language (Phinney 1989; Kroll 1990; Victori 1995), and on what type of learning strategies they use in their writing tasks (Oxford 1990; Wenden 1991). The writing process of young writers has also been a frequent target of linguistic and educational research, usually yielding observational accounts of what happens in primary schools (Calkins 1986; Cochran-Smith, Paris y Kahn 1991). Nevertheless, there seems to be a dearth of studies on what children do when for the first time they face the challenge of communicating in writing in a foreign language, a process that is likely to differ from what adult, high school or college writers do.

Taking into account these research gaps, first and foremost, the present study attempted to provide an account of how young beginning language learners produce written texts on their own; additionally, it was meant to add information on a writing medium in schools—computer-mediated communication—that, despite the existing research from the last decade (Riel 1987; Sayers y Brown 1987; Kleifgen 1991; Peyton y Mackinson-Smyth 1989; Reich *et al.* 1991; Warschauer, Turbee y Roberts 1996), still needs to be taken into consideration in a world where children more and more frequently communicate through the computer since their early childhood years.

2. METHODOLOGY

2.1. *Context and Participants*

The present study was conducted at P.S. 125, a public elementary school in the neighbourhood of Harlem, New York City. The learners involved in this study belonged to the experimental Computer School, a "Mini-School" within the regular school. In the Computer School computers connected to a local area network were used as a means of integrating the curriculum and as a means of communication between students, teachers and other members of the community. The curriculum was, therefore, supported by the technology from a fully equipped computer room. A cross-curricular approach to school activities, a personal commitment to comply with this

approach from students, teachers and parents, as well as an emphasis on group work rather than individual tasks were some of the school's distinctive features that distinguished it from other American public elementary schools¹.

The present research focused on a group of thirty-three sixth graders (eleven and twelve years old) who had begun learning Spanish during the school year in which all the data was collected. In February, the time when the data started being collected, all the students could still be considered beginners in terms of their foreign language skills. In order to make up for the little time available for foreign language learning in the Computer School –only two half-hour periods a week–, the students had been encouraged to correspond with their Spanish teacher on the local network off class hours². They had been told that they could write whenever they wanted to and about whatever they felt like writing. Grades were not given for those messages but the teachers had told them that writing e-mail would be good practice for their Spanish. The pedagogical goal of this activity was to get these L2 learners to practice in writing what they had been learning in class (which, at these initial stages, stressed listening and speaking skills), but always within a language learning context that was communicative and fully integrated within a school structured around the latest technology.

2.2. Methodological Approach

The primary concern of the study was to provide a thorough description of how these young writers produced texts in a foreign language class and what the resulting texts looked like. Consequently, the research presented here considered the above-mentioned studies on learner strategies and on the writing process, while keeping a door wide open to any behaviours or text features that could appear in the particular context that was under study. It was for this reason that the research employed qualitative research methods recommended to study language in classrooms (Spindler 1982), instructional uses of computers (Murray 1988; Mehan 1989), language learning contexts (Cook-Gumperz, Corsaro y Streeck 1986; Schieffelin y Ochs 1986) and, more specifically, the writing process (see studies on writing mentioned in the Introduction).

2.3. Data Collection Procedures

Taking the case study approach recommended for such qualitative studies (Erickson 1986), the present research focused on the above-described group of language learners. A variety of ways to collect data were utilised so that the researcher could support her assertions through triangulation and, after recurrent analytic reflections on the data, provide “rich descriptions” of the phenomena observed (Erickson, *ibid.*).

The e-mail written in Spanish by the students (92 messages) and the responses they received from their teachers of Spanish (113 messages) became the written data for the present research. Fourteen out of the fifteen girls wrote one or more e-mail messages while thirteen out of the eighteen boys did. To document their process of writing the texts, sixteen volunteers (nine girls and seven boys) were videotaped and observed while writing one of their e-mail messages at the computer³; notes were taken on the participants' behaviour, on the surroundings and on other events that the video camera, focused on the child and the computer screen, could not record.

Immediately after each videotaping session, open-ended individual interviews were held with the children who had been videotaped in order to obtain the participants' interpretations of their process of writing. The interview was conducted at this point so that the children could remember more easily what they had written and the way they had done so. During the interview, students were asked to provide an oral translation for their message. Information on writing behaviours and on linguistic structures was elicited in accordance with each message and the responses of each participant by asking exploratory questions, such as "What does this mean?", "How did you do that?" or "Why did you do that?", when an issue of interest for the research was noticed.

2.4. Data Analysis Procedures

The videotapes were reviewed several times in order to locate behaviours related to e-mail writing. A log was created for each tape to facilitate the comparison and contrast of participants' behaviours, and it was complemented with the field notes taken during the videotaping session. The events or behaviours observed were organised into categories which focused on the students' physical behaviour at the computer, use of software and hardware, oral interactions around the computer, layout of the text on the screen, cursor movements and use of information sources. The transcribed interviews were coded according to other emerging categories related to the research: problems with the technology, recollections of class instruction, forgotten meanings, use and misuse of the information sources, explanations about the writing process, preoccupation with orthography, linguistic interpretations, general use of e-mail in the school, and reading. The e-mail messages placed in files, one per student, were analysed by focusing on their syntactic structures, lexicon, relationship to the Spanish class, relationship to the information sources discovered in the analysis of the videotapes, and connections between the messages sent by the teachers and the students' responses to them. The recursive, contrastive analysis of all these sets of data documented the process that is described in the following section⁴.

3. RESULTS AND INTERPRETATION

At one level, the e-mail writing activity was performed within a familiar context because of the way the technology was continually being used in the school. However, at the linguistic level, this was an unfamiliar experience because the learners were not used to receiving and reading e-mail in a foreign language and because little writing was being done in a Spanish class where the focus had been placed on conversational skills. One of the learners, Charice, acknowledged in her interview: "I decided to write about this because there was a lot of other things I wanted to write about but I forgot how to spell them or I didn't know how"⁵. As will be seen, this unfamiliarity made children aware of their linguistic limitations and prompted them to use the variety of writing strategies that will be described below.

3.1. *Presenting the Texts*

Most of the children's messages looked like on-paper letters, thus transferring the learners' pragmatic and linguistic knowledge in one known textual genre to the less familiar one. All the learners' messages contained short formulaic units such as greetings ("Querida Mireia"; "Hola Mireia"⁶) and complimentary closes that had been learned in class ("Hasta pronto"; "Hasta mañana"). In contrast, a few messages looked more like class assignments when they provided lists of numbered, unconnected sentences and included titles within the text; by choosing titles for the message, learners were actually making it clear that they were sending a homework assignment instead of a regular e-mail message. Those messages that were similar to on-paper letters turned out to be much more creative topically and syntactically.

Learners wrote their e-mail messages in different ways. Naturally, some children attempted to apply what they had learned in the classroom and included classroom vocabulary in their messages. Sentences were then short, simple and meaningful (Message 1); they also reflected teachers' directions and handouts given in class:

Shanaya: This is with a sheet that you gave us [...] I just remembered that Ryan (teacher) said that an easier way to remember an ending was to say that means yours, I mean, with love.

Researcher: Is there anything else from the sheet?

Shanaya: Yes, the date.

While writing their electronic mail, three learners consulted their notebooks and handouts from class. Some children actually reproduced word-for-word sentences learned in class such as "Dondi veve? Yo veve en un apartamento" (Message 2).

Others attempted to adapt sentences learned in class such as “cuando es el Mireia cumpleaños?”, modelling after “¿Cuándo es tu cumpleaños?”, or “¿Como estas? Mi vacaciones muy bien”, adapting the practised question-answer set “¿Cómo estás? Yo muy bien, gracias” from the classroom.

3.2. *Planning the Texts*

Judging from what most participants did at the computer, lack of planning seemed to be a common feature in their writings. Most learners, both low- and high-achieving ones, typed their messages directly into the computer. Charice, for instance, did composing and editing at the same time. Her command of the keyboard and her familiarity with the word processor allowed her to type fast and to carry out fast editing: Every two or three words she would stop and make corrections to her text. Preoccupied with perfect spelling as most learners seemed to be, Charice spent time trying out several versions of the same words. In contrast, the editions made by another high-achieving learner, Maysa, were much less frequent but ranged from low-level corrections –such as adding punctuation marks– to more pragmatic changes –such as her replacing the pronoun “nosotros” for “yo”– when wanting to make her message more personal. Despite this common trend, two learners were seen preparing all or part of their text on paper, thus making an attempt to structure their writing in advance. This indicates that some writers, even when they are daily computer users, might feel more comfortable composing their writing on paper first:

Shanaya: I looked in the dictionary for the words I was gonna put in my letter and I wrote it down. And then I put it all in one big paragraph and wrote it down on the computer. [...] I looked at your, umm, message [...]. And then I took, like, I read it and stuff. And then I wrote down some little questions and stuff like, like that. [...] Well, then I thought of more to put in, so I looked in the dictionary and I started writing down little questions.

3.3. *Looking for Oral Sources of Information*

Most learners realised that their knowledge of the foreign language was too limited and looked for assistance from a variety of resources. Besides their occasionally relying on the English lexicon, they sometimes requested assistance from another person who spoke Spanish. Such requests to either a bilingual peer or the teacher included procedural questions about the writing task itself or the use of the technology (“How do you write the upside-down question mark?”), confirmations of the accuracy of their writing (“Is this how you say ‘My mother’s name is Norma’?”), clarifications on the meaning of a Spanish word or sentence in the message they were responding to and translations into Spanish of what they wanted to communicate:

Tarik: Charice, Charice, how do you say *sister*, umm, how do you say *mother* in Spanish? (typing) (both learners were in the computer room).

Charice: (sitting at the computer behind Tarik) *Madre*. [. . .]

Tarik: (typing) How do you say *father* in Spanish?

Charice: *Padre*. [. . .]

Tarik: (hands off the keyboard) How do you say *stock market*? (Charice laughs).

As in this conversation excerpt, sometimes the peer was not a bilingual speaker but an English-speaking learner who, like Charice, was known by her peers to be one of the good learners in the Spanish class.

At the Mini-School one could often witness how children called on peers and teachers to complete school tasks. In fact, peer collaboration was promoted by the school and it occurred to various degrees in this e-mail writing activity. Ten of the sixteen videotaped learners consulted a spoken source of information and only two of them used it as their sole source. In some cases, writers called on a classmate to make the type of specific requests mentioned above. But in other cases, it seemed that the Spanish-speaking classmates took over the task of writing in the foreign language when messages contained language that was close to native-speaker writing and reflected the Caribbean Spanish spoken in the school. One could detect such collaboration because the sentences in those messages tended to be syntactically more complex than those sentences in which learners only attempted to apply what they had learned in class. Sometimes, this collaboration seemed to be limited to a mere *handing over* of the keyboard to the more proficient learner (as when producing “Yo quiero aprender mas espaol. Yo estoy aprendiendo poco a poco. gracias por senyano may el espaol”⁸). At other times, it seemed that the Spanish speaker had been dictating what to write to the English-speaking writer, as it had been sometimes observed to happen in the school (resulting in sentences like “key tu va esayle kwando tu va ta grande”⁹).

Collaboration occurred sometimes when the English-speaking writer appeared to be determined to communicate something that seemed too important to allow for the possibility of misunderstanding, like when thanking the teacher (“Me gusta me reporte en espanol”¹⁰). It was also probably for this reason that they sometimes resorted to their English (“Por Favor don’t tell Mrs. [her teacher] what Yo am about to tell you I don’t like my teacher”). On other occasions collaboration seemed to lead to more creative linguistic manipulations. For instance, Malika, clearly helped by a peer, wrote “A escuela fuiste cuando eras mas joven?” (Message 3) and continued on her own with “fuiste es a bien escuela? cuando usted querer la escuela?”¹¹, two sentences which a native speaker would not have produced but which evidently included a manipulation of the linguistic input coming from the peer and the Spanish class. Out of all the data collected, only in this message did a learner acknowledge peer collaboration by signing her message with “Amor e Malika y mi amigos”.

3.4. *Looking for Written Sources of Information*

3.4.1. *Using a Dictionary*

Thirteen out of the sixteen videotaped learners made use of written information sources. The most common one was the bilingual dictionary that they used in the Spanish class. Some learners came to the videotaping session with their dictionary and others asked for permission to go and get it once they had sat down at the computer. They all consulted their dictionary while writing their message and some consulted it when reading the teacher's message as well. Most often, they looked up specific items in the alphabetical section. Besides, four of the learners who consulted the dictionary were seen reading a section at the beginning of the dictionary in which learners could find set phrases labelled by the dictionary authors as *useful for communication*.

Two different behaviours that seemed to have a direct consequence in the quality of the texts were observed in those learners who used the dictionary as an information source: On the one hand, some learners used the dictionary to consult only few words. These learners used the dictionary to confirm words and phrases with which they were already familiar; they were the ones who also adapted the phrases found in the dictionary by using linguistic cues and incorporating their knowledge of the foreign language, as illustrated below by Maysha:

Maysha: But it didn't have "rancho de caballo" [...] It had, I looked up ranch first. I looked up horse. And it didn't have horse ranch. [...] I turned it around because I knew sometimes you have to put a noun after, sometimes a noun after a verb or something like that or a noun after an adjective or something like that? I don't know what it's called. So I just did that.

Researcher: Why did you put "de" in the middle between "rancho" and caballo?"

Maysha: Because ranch of horses or ranch of horse.

On the other hand, many learners relied heavily on the dictionary to get all or most of the vocabulary necessary to compose the message. They were the ones who were overly concerned with exact linguistic forms; they copied a lot of words and later were not able to explain the meaning of their message. In contrast, those learners –usually high achievers– who only used it to consult "for some reassurance", as Maysha explained, were able to recall exactly what they had meant in their messages: the dictionary was thus used as a springboard for their writing. Another phenomenon related to the use of this resource was that some learners did not know yet how to use it properly as support for their writing. On some occasions, they typed in the wrong words as illustrated in the following interview excerpt during which the learner is translating her message:

Researcher: Okay. What does it (the bilingual dictionary) say for trip? [...]

Malika: “Viaje”. Oh, I made a mistake.

Researcher: Okay. Now, do you know where you got “joya” from? (the word in her message)

Malika: It’s here (looking at the dictionary). From “trinket”.

Researcher: Yeah. Okay. You got it from the word before. [...]

On other occasions, learners did not know how to interpret the information provided in the dictionary, as when a learner wrote in his message “nosotros-as” for the word “we”, including the hyphen that in the dictionary indicates masculine and feminine versions for the word “we”: “nosotros” and “nosotras”. As beginning learners, they could hardly distinguish the nuances between words listed as alternative translations for the same term and most often they chose the first of these translations; as Maysha explained, “they had many definitions, but they don’t have, they don’t have, like, they have one and then a couple of words and then two and a couple of words. So I just took the first word”. In some cases, they could have chosen the right term if they had had more practise with the use of dictionaries. Thus, Malika, a motivated learner who struggled with the foreign language, opted for, “esa”, a pronoun or adjective, to be used as the conjunction ‘that’ in the sentence “yo esperar *esa* la poblar en Espana [...]” (Message 4), meaning “I hope *that* the people in Spain...”, even though she proved that the teacher’s advice on how to use the dictionary had theoretically made her aware of its linguistic conventions: “Because this—the teacher said that if you see certain words that come before another word, that word stands for something, ummm [...] It’s an, umm, stands for like an abbreviation, fike a pro. P-r-o-m.”

Messages resulting from overreliance on and misuse of the dictionary were barely comprehensible to a Spanish speaker, as in the sentence “asi, yo bote despacho” (Message 4), whose meaning cannot be guessed. These messages tended to mirror the structures of English sentences: For instance, “yo esperar esa la poblar en Espana igual la via nosotros aprender espanol!” must mean “I hope that the people in Spain like the way we learn Spanish’ as its writer translated in the interview. None of the grammatical structures in the body of such messages followed any of the structures taught in class: subordinated sentences such as “yo creer ese ella was no valia” –meaning “I think that it was of no value”– or verb tenses such as the present continuous “es trabajo” –for “está trabajando”– had not been taught to these learners yet.

3.4.2. *Writing and Reading: Responding to E-Mail*

Right before writing, or while doing so, five learners were seen reading a Spanish message that had been previously sent to them. Among this group of learners, three distinctive behaviours or uses of the information source were

observed: (a) One learner, Latoya, kept the received message on the screen and read it while writing (“Yeah. I had your message on the same page. [...] This is yours and this [top half of the screen] is mine. So when I’m writing mine [bottom half of the screen], I could look at something from yours”); (b) another learner, Shanaya, read the received message before doing any writing on the screen and took notes to prepare a draft, evidently using that message as an information source for her final text; and (c) three learners read the message before writing and then stored it in the network without consulting it again; later, it became evident that one of these three learners used that message as an information source because she made an effort to understand it completely by consulting her teacher, by looking up in the dictionary, and by making direct references to the received message in her resulting text. Although learners tended to write after receiving e-mail from the teacher, most learners’ messages did not come as a direct response, but initiated new topics, most of which had been taught in class.

The few learners who were seen reading before writing were concerned with only getting the gist of the message and tried to guess the meaning of words from their context. Although not always successfully, they relied exclusively on their own interpretations of the text. It was found that some learners used the teacher’s messages as resources that served as models for syntactic structures, and some writers manipulated the language in them to produce adequate responses. These were usually the high-achieving learners. In their e-mail messages they were creative in terms of syntactic transformations, but less so in terms of topics and vocabulary. They rarely initiated new topics, but rather answered questions. For instance, Latoya tried to answer all the questions put to her (Messages 5 and 6) even though they did not correspond to any structures studied in class and were difficult for her to understand. Although she was not able to interpret the past tense and get the exact meaning of some words, she resorted to making comparisons between both languages. Below this learner describes how the teacher’s message had served as a model, not only for her topics, but also for her vocabulary and structures:

Latoya: (reading and translating her message) “En escuela me paso matematicas, español, etcetera”. I think that means “at school I passed math and Spanish.”

Researcher: Where did you get that “me paso”?

Latoya: From the letter you gave me.

Researcher: What did I write in the letter?

Latoya: You wrote “what do I pass”, I think, “in this, in school”. [...]

Researcher: [...] Why did you put these words together here?

Latoya: Ummm, because “interest”, “interested” sounds like “interest” so I thought that means “interest” and you asked me, you put “algo” in front of “interest”, so I wrote it down.

In the following excerpt, Zakkiyah’s words illustrate how these beginning learners had started looking for cognates:

Researcher: How did you know that “pronto” was immediately?

Zakiyyah: Because I know that “pronto” is also an English word too, and that “pronto” means immediately or quickly or fast.

When answering questions, high-achieving learners, such as Maysa (Messages 7 and 8) manipulated the teacher’s lexical and syntactic sources by changing their order and combining several sentences; then, the learners’ statements were not isolated pieces of information but coherently referred to the received messages and used them to organise their own discourse. Such conscious discourse organisation was shown when learners’ devoted separate paragraphs to talk about different topics. For instance, as can be seen in Message 6, the learner uses the first paragraph to talk mainly about herself, and the second one to address questions to her reader.

Some messages focused mainly on the reader: Learners started turns by asking questions, as in “¿Cuántos años tienes?” o “¿Hacer ustedes haber alguno hermana?”¹². Sometimes they talked about the Spanish class. Yet, most messages focused on the learners themselves who gave information about their present interests and personal experiences. Malika’s choice of topics makes her stand out as the learner who got more personally involved in the e-mail writing activity:

Researcher: Why did you write about this? (a disappointing theatre play she had attended)

Malika: Because I was upset. [...] Because they said there was gonna be a person that was gonna sing and no one had sung. And it wasn’t actually a play; it was just, ummm, broken- broken up, ummm, parts by people who were tap dancing.

The existence of a reading audience was acknowledged by a few learners who made reference to the person(s) who would read their writing. Malika as indicated above, alluded to the people in Spain who she was told would see the videotapes, and she wrote “yo esperar esa la poblar en Espana igual la via nosotros aprender espanol”–meaning “I hope that the people in Spain like the way we learn Spanish”. Below, Shanaya also voices this concern when the distant audience (“They”) refers to those same teachers who do not share the writer’s context (“here”):

Researcher: What does this mean, ¿Qué tiempo hace?

Shanaya: What is the temperature today?

Researcher: Okay. And how come you remembered that?

Shanaya: Because, I looked in the dictionary and I said, ummm. Before it was cold, so now it's kind of hot, kind of getting hot. So I added that to tell, so *they* can compare their temperature with *here*.

3.5. Using the Technology

3.5.1. Taking Advantage of the Technology

As expected from the central role of technology in the Mini-School's curriculum, most learners did not have serious problems with it, although they did not use complex functions in the software either. In fact, all the students had a high degree of computer expertise, but only one of them kept both the received message and the message she was writing together on the screen. Besides the alphanumeric keys, the participants took advantage of other features of the medium that represented strokes visually on the screen. Such features were used by learners to overcome the difficult moment for writers of starting to fill in a page—in this case, the screen—, the moment when they need to look both for ideas to develop and for the words that would better embody them. As Alec showed us in the videotaping session, he would start the message precisely by hitting non-alphanumeric keys, namely, the space bar, the return key and the tab key. Therefore, it looked as if he were structuring the layout of his writing before writing its contents, a virtual layout which could be acting as a self-prompting device or as a way of focusing his attention on the task.

3.5.2. Limitations of the Technology

Only a few of these computer users recognised the technological limitations of the software and did their best to overcome them. Only three out of the sixteen videotaped learners resorted to changing computers when they realised that the software on the Macintosh computer offered them the capability to type in Spanish characters while the software on the Apple IIE did not. When wanting to make for the absence of Spanish characters on the keyboard and the software, two of these learners copied the conventions the teacher had introduced in her messages to represent the Spanish characters (i.e. capital "N" standing for "ñ" "¿" and "!" used both at the beginning and at the end of sentences), whereas the other learners did not seem to see the necessity to use such conventions. What follows is a learner's account of this use:

Researcher: I saw that you put a little apostrophe after the "e" and in "¿Qué tiempo?" there's an apostrophe after the first "e." What does that mean?

Shanaya: [...] It's like an accent. [...] You have to put it after the letter because you can't put it on top of the letter.

Researcher: Why not?

Shanaya: Like, you can't put it right here (puts finger on the screen). You can't put it, like, on top of it, like you do when you write it regular. You have to put it afterwards or between it.

Only one learner, Tarik, seemed to use the technology as an end in itself rather than as a tool. Because of his fascination with the technology, the School co-ordinator had been getting him involved in many projects with different software applications so as to raise his interest in the school. Whereas this methodology worked with other school subjects, it did not seem particularly successful as far as writing e-mail messages in Spanish was concerned. He repeated syntactic structures, produced little language, and did not use the variety of vocabulary he had been learning in class; moreover, he never responded to the content of the teachers' messages and did not seem concerned at all about establishing any written turn-taking mechanism as other learners did.

Whereas he was not very creative linguistically, Tarik showed creativity in his use of the word processor, not by means of written discourse, but of graphics and sounds. It was interesting, however, to see the difference between the messages written in each of the word processors that Tarik used. As soon as he discovered the technological possibilities on the Macintosh, he stopped sending messages on the Apple II computer (Messages 1). In those first Apple messages he had attempted to communicate by using some of his Spanish, his native language, and the help of a Spanish-speaking peer. However, after changing his writing tool, the main purpose of sending messages on the Macintosh seems to have been to show the graphics power of the software while setting his earlier interest in the foreign language aside. Tarik's behaviour points at two issues which need to be considered when technology enters the language classroom: First, how different technological tools may favour different writing behaviours; and second, how the technology may get in the way of language learning.

4. CONCLUSIONS AND PEDAGOGICAL IMPLICATIONS

The written activity described in this study has showed young writers' behaviours in a communicative language learning context which was meant to allow for the development of their writing skills outside the classroom. In general, their behaviours were in line with the learning strategies recommended for a classroom activity to be communicative (Rubin y Thompson 1982; Nunan 1989). Namely, learners discovered different ways of writing on their own; they used in one context—computer-mediated communication—what they had learned in another one—the classroom; they were creative and experimented with the foreign language (i.e. they transformed words and phrases they had read); they interacted with fellow learners and native speakers; they wrote for a specific audience (i.e. either their teacher or other teachers abroad); they

took turns and related their writing to other texts (i.e. they wrote in response to the teacher's e-mails); they rehearsed language structures and vocabulary that had been taught in the classroom; they tried to work things out with the help of resources (i.e. the bilingual dictionary); they made comparisons between languages and made intelligent guesses; they improvised solutions for the limitations in the medium of communication (i.e. the learners' special use of the apostrophe); they put formalised routines in use; and, what is most important, they took risks by daring to communicate despite their low-proficiency level. The struggles these learners went through in this activity and some of the apparent failures in their first attempts to communicate in writing show us that, at these very early stages of foreign language learning, young writers still may need to be guided by their teachers on how to make the best use of their prior linguistic knowledge and of the available resources—scarce as both of them may be—so that they develop positive writing behaviours.

The present research has been limited to a small group of learners in a very specific situation that cannot be generalised to all foreign language learning contexts. Nevertheless, the results of this case study provide guidelines to foreign language teachers who wish to use electronic mail in their classes and to researchers and educators who want to gain more insights into children's processes of developing writing skills in another language. First, teachers should remember that young writers keep an audience in mind and that their texts may vary according to that audience, whether a teacher, a classmate, or an international pen pal. In the present study, some students modelled language from other messages, which makes it relevant for teachers to assess the linguistic skills of the students' interlocutors whether they are writing on a local or to a wide area network. Teachers might want to present messages as sources of information if the interlocutors are native speakers or more proficient language learners. In contrast, if both interlocutors have a similarly low command of the language, teachers might want to monitor such modelling and direct writers' attention towards content.

Second, since it seems that the software itself may affect the resulting discourse, teachers need to assess whether their school's software includes features that can facilitate positive writing behaviours, such as performing editing changes, arranging text on the screen, copying between messages, displaying several messages at the same time, and using foreign characters. Other recent features in word processors could also affect the writing activity: If a spelling checker and a thesaurus are available in the foreign language, the process and purpose of writing e-mail may be different because writers can be encouraged to focus their attention on ideas and syntax rather than on spelling and vocabulary, as many students in this study did. At the same time, teachers might need to be aware of those students who, because of their interest in technology, might use the computer as an end rather than as a tool and therefore might not focus on the writing task itself.

The phenomena described here hint at a variety of avenues for further research. Case studies on e-mail such as this one could benefit from parallel analyses of how reading and writing e-mail relates to the development of reading and writing skills in the classroom. Furthermore, other questions on the process of writing e-mail and the effect of its intended audience are still open for investigation: How do foreign language learners write e-mail when they communicate with other language learners instead of with their teacher? What happens when they communicate with native speakers of the foreign language who live in another country? Like most of the existing literature, this study has confined itself to a small sample of discourse. Larger samples of e-mail discourse drawn from various contexts could be used in large-scale studies that would uncover similarities and differences in various e-mail texts. There also seems to be a need for a growing literature that presents detailed accounts of this discourse's salient features in order to see whether it develops features of its own, as first-language e-mail has been shown to.

The present study has focused on the language produced in a very short period of time—considering the little time devoted to language learning in the Mini-School—, and the data were not able to document any significant changes in the learners' writing behaviours. However, the analysis of the messages written by two high-achieving learners, Latoya and Maysha, hinted at over-time changes in the language and at a slight improvement in the way information sources were used. Longitudinal studies collecting written discourse over longer periods of time and documenting possible changes in writing behaviour and language use would be valuable tools for assessing long-term effectiveness of the use of e-mail in foreign language classrooms.

5. ACKNOWLEDGEMENTS

I would like to thank the teachers at P.S. 125 in New York City, Paul Reese, Mona Monroe, and Doris Parker, for opening their classrooms to me. Many thanks also to the Mini-School learners who shared with me their time in the computer room and their learning struggles. I owe special thanks to CIRIT, Generalitat de Catalunya, Spain, for their financial assistance during this study.

NOTES

1. For a full description of the educational philosophy and the use of technology at the Mini-School within P.S. 125, see Newman & Goldman (1988), Reese (1991), Kleifgen (1991) and Trenchs (1998).
2. The piece of software used by the learners in the computer room was Bank Street Writer. The children used it daily in their writing classes and to send messages to each other and to their teachers. The software did not support Spanish characters on the Apple IIE computers, but it did on the Macintosh computer.

3. All the students were told that I wanted to show teachers in Spain how American children wrote e-mail messages and that I needed volunteers to be videotaped at the computer.
4. For a closer analysis, see the case studies of three of these children in Trenchs (1996) and a detailed analysis of the students' e-mails and writing behaviours in Trenchs (1998).
5. Issues will be illustrated with fragments of the texts written by the participants and with excerpts from the interviews.
6. All messages are quoted as they were written by the learners; spelling and punctuation mistakes are left intact. If significant, after each quotation, a number (i.e. Message 1) will refer readers to its corresponding message in the Appendix. Readers are encouraged to look at the Appendix to get acquainted with the actual presentation of the e-mail texts.
7. Transcription Convention: in parentheses the reader will find contextual information related to a specific utterance.
8. In English this would mean: "I want to learn Spanish. I am learning little by little. Thank you for teaching me Spanish."
9. In English: "What do you want to be when you grow up?"
10. In English: "I like my report on the Spanish class".
11. In English: "What school did you go to when you were younger?" and "Did you go to a good school? How did you like the school?"
12. In English: "How old are you? What do you like to play? Do you have any sisters?"

REFERENCES

- Brown, A. L. y A. S. Palincsar. 1982. "Inducing strategic learning from texts by means of informed, self-control training". *Topics in Learning and Learning Disabilities. Metacognition and Learning Disabilities*, Vol. 2 (1). Eds. D. K. Reid y W. P. Hresko. Gaithersburg, MD: Aspen Systems Corporation. 1-18
- Calkins, L. 1986. *The Art of Teaching Writing*. Portsmouth, N.H.: Heinemann.
- Cochran-Smith, M., C.L. Paris y J.L. Kahn. 1991. *Learning to Write Differently: Beginning Writers and Word Processors*. Norwood, NJ: Ablex.
- Cook-Gumperz, J., W.A. Corsaro y J. Streeck, eds. 1986. *Children's Worlds and Children's Language*. Berlin: Mouton de Gruyter.
- Cumming, A. 1989. "Writing expertise and second language proficiency". *Language Learning* 39, 1: 81-141.
- Ellis, R. 1985. *Understanding Second Language Acquisition*. Oxford: Oxford University Press.
- Erickson, F. 1986. "Qualitative methods in research on teaching". *Handbook of Research on Teaching*. Ed. M. C. Wittrock. New York: MacMillan. 119-161.
- Faerch, C. y G. Kasper. 1984. "Two ways of defining communicative strategies". *Language Learning* 34, 1: 45-63.
- Flower, L. y J. R. Hayes. 1980. "The cognition of discovery: Defining a rhetorical problem". *College Composition and Communication* 32: 365-387.
- Kleifgen, J. A. 1991. "Kreyol ekri, Kreyol li: Haitian children and computers". *Educational Horizons* 69, 3: 152-158.

- Kroll, B. 1990. *Second Language Writing: Research insights for the Classroom*. Cambridge: Cambridge University Press.
- Mehan, H. 1989. "Microcomputers in classrooms: Educational technology or social practice". *Anthropology and Education Quarterly* 20, 1: 4-22.
- Murray, D. E. 1988. "Computer-mediated communication: Implications for ESP". *English for Specific Purposes* 7: 3-18.
- Murray, D. E. 1993. *Write to Learn*. Fort Worth: Harcourt Brace Jovanovich.
- Naiman, N., M. Frohlich, D. Stern y A. Todesco. 1978. *The Good Language Learner*. Toronto, Ontario: Ontario Institute for Studies in Education.
- Newman, D. y S. V. Goldman. 1988. "Supporting school work groups with communication technology: The Earth Lab Experiment". *Children's Environment Quarterly* 5, 4: 24-31.
- Nunan, D. 1989. *Designing Tasks for the Communicative Classroom*. Cambridge: Cambridge University Press.
- Oxford, R. L. 1990. *Language Learning Strategies*. New York: Newbury House.
- O'Malley, J. M. y A. U. Chamot. 1990. *Learning Strategies in Second Language Learning*. Cambridge: Cambridge University Press.
- Peyton, J. K. y J. A. Mackinson-Smyth. 1989. "Writing and talking about writing: Computer networking with elementary learners". *Richness in Writing*. Eds. D. M. Johnson y H. Roen. New York: Longman. 100-117.
- Phinney, M. 1989. "Computers, composition and second language teaching". *Teaching Languages with Computers: The State of the Art*. Ed. M. Pennington. La Jolla, California: Athelstan. 81-94.
- Reese, P. 1991. "Earth Lab: A networked computer environment designed to support science education and general literacy". *Technology for Teaching and Learning. Papers from the Forum for School Science*. Eds. K. Sheingold, L. G. Roberts y S. M. Malcom. Washington, D.C.: American Association for the Advancement of Science. 71-90.
- Reich, C. F., A. Mattews, S. Goldman, D. Brienne y T. J. Mattews. 1991. "Teaching earth science through a computer network". *Perspectives in Education and Deafness* 9, 5: 4-7.
- Riel, M. 1987. "A functional learning environment for acquiring literacy skills". *Journal of Educational Computing Research* 1, 3: 317-337.
- Rubin, J. y I. Thompson. 1982. *How to Be a Successful Language Learner*. Boston, MA: Heinle & Heinle.
- Rubin, J. 1989. "How learner strategies can inform language teaching". *Proceedings of LULTAC 1989*. Ed. V. Bickley. Hong Kong: Institute of Language in Education. 1-25.
- Sayers, D. y K. Brown. 1987. "Bilingual education and telecommunications: A perfect fit". *The Computing Teacher*, April: 23-24.

- Schiefflin, B. B. y E. Ochs. 1986. "Language socialization". *Annual Review of Anthropology* 15: 161-191.
- Spindler, G. ed. 1982. *Doing the Ethnography of Schooling*. New York: Holt, Reinhart & Winston.
- Trenchs, M. 1996. "Writing strategies in a second language: Three case studies of learners using electronic mail". *The Canadian Modern Language Review* 52, 3: 464-497.
- Trenchs, M. 1998. *E-Mails a una Mestra. Correu Electrònic i Aprenentatge de Llengües*. Lleida: Pagès Editors.
- Victori, M. 1995. *EFL Writing Knowledge and Strategies: An Integrative Study*. Unpublished Doctoral Dissertation. Barcelona: Universitat Autònoma de Barcelona.
- Warschauer, M., L. Turbèe y B. Roberts. 1996. "Computer learning networks and student empowerment". *System* 24 1: 1-14.
- Wenden, A. 1991. *Learner Strategies for Learner Autonomy*. New York: Prentice Hall.

APPENDIX

Message 1: Sent by Tarik on February 11th

Quierda Ms. Trenchs

Yo tengo unsey donsey. yo tengo uno el mama, yo tengo una hermana. Yo tengo cinco tos. Yo tengo cinco ta. Yo tengo uno mejor amigo Y amiga.

snceramente
Tarik [last name]
paz Y amor

Message 2: Sent by Latoya on March 13th

Hola, Ms. Trenchs

Yo bien. Dondi veve? Yo veve en apartamento. Yo no celebrate Christmas. Me gusta double dutch, y musica, matematicas. No me gusta science. Para ustedo gusta science?

amor conor :Latoya

Message 3: Sent by Malika on February 28th

Dear Mireia

Commo estas ? yo am once. commo tu escula? es mi grado muy bien? Si ha ha ha .A escuela fuiste cuando eras mas joven? fuiste es a bien escuela ? cuando usted querer la escuela ?

amor e Malika y mi, amigos

Message 4: Sent by Malika on March 13th

Querida Mireia

Viernes la 13th Marzo

Commo estas ?

yo esperar esa la poblar en Espana igual la via nosotros aprender espanol! por favor conceder mi no. Que es esa proximo Espanol ensayo ? es el dificil ? por favor conceder mi no sano ausente ! asi, yo bote despacho

Adios

amegos

Malika [last name]

La clase mi en es docientos treces

The Mini School

Message 5: Sent to Latoya on March 25th

el 25 de marzo de 1992

Querida Latoya:

Gracias por tu mensaje y por preocuparte por mi. La semana pasada yo estaba enferma. Tenia la gripe y mucho dolor de cabeza. Estuve en la cama varios dias. Ahora estoy bien y sana. siento mucho que vosotros no tuvisteis espanol la semana pasda. Esta semana y las semanas proximas estudiaremos cosas nuevas en espanol.

Tu estabas en la escuela la semana pasada. ? Que paso en la escuela? ?Paso algo interesante o importante? ?Tu participaste en el concurso de ciencia?

Escribe pronto. Adios.

Ms. Mireia Trenchs.

P.S. Tus mensajes son mejores cada dia. Al final del curso tu espanol sera muy, muy, muy bueno.

Message 6: Sent by Latoya on March 26th

Querida Mireia:

Hola Mireia. Muy bien gracias. Mi cumpleaños es el 24 marzo de 1992. anos tiens doce. En escuela mi paso matematicas, espanol, etc. En escuela me participaste en todas. Mi algo interesante en espanol es matematicas. Me gusta matematicas y espanol mucho.

Cuando es el Mireia cumpleaños? Cuantos anos tiens?

Hasta luego Ms. Trenchs.

Sincerely: Latoya [last name]

MIREIA TRENCHS PARERA

Message 7: Sent to Maysha on February 25th

el 25 de febrero de 1992

Querida Maysha:

!Contestas mis mensajes rapidamente! !Muy bien! Para mis vacaciones yo fui a un pueblo en el estado de New York. El pueblo se llama Hunter y esta en la montaNa. En Hunter puedes esquiar. A mi me gusta mucho esquiar. ?Sabes esquiar? El esqui es mi deporte favorito. ?Cual es tu deporte favorito?

Hasta pronto, amiga.

Ms. Mireia Trenchs

P.S.: Tus mensajes son muy buenos y me gustan mucho. Escribes muy bien en espaNol.

Message 8: Sent by Maysha on March 9th

Querida Mireia,

Para mi vacaciones yo estancia en mi apartamento. Yo no estancia todo dia. Yo ir afuera un pedacito. Yo gustaria esquiar. Mi favorito deportes es beisbol y baloncesto.

Hasta Manana

Maysha [last name]

CS213