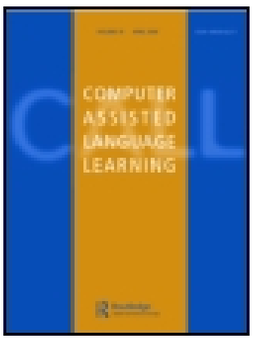

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CALL in Lebanese elementary ESL writing classrooms

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This article discusses the effectiveness of using computer assisted language learning (CALL) in motivating fourth-grade English as a second language (ESL) students to develop better writing skills. It also seeks to explore the perceptions of ESL teachers and students regarding the use of CALL in the ESL classroom. The study involved 48 fourth graders and their four teachers. Data were gathered during a three-month period using questionnaires, interviews, and observations. Findings revealed that teachers as well as students shared similar perceptions toward the use of CALL in the writing classroom and identified the same motivational factors that would encourage students to produce well-developed written work. Additional work on the productive integration of computer technology in the writing classroom and its effects on motivating students to produce work of high quality is recommended.

Keywords: CALL; technology; ELS writing; motivation; Lebanon

1. Overview

Research in the use of computer assisted language learning (CALL) in the writing classroom has indicated that it creates a supportive and motivating environment for learners conducive to students to work at their own pace and linguistic developmental level and enhances their independent writing skills in terms of quality and quantity (Bialo & Sivin-Kachala, 1996; Goldberg, Russell, & Cook, 2003; Lam & Pennington, 1995; Stepp-Greany, 2002). Studies indicate that CALL supports and influences students' attitudes toward the writing process (Burns, Roe, & Smith, 2002; Childers, Jordan, & Upton, 1998). Significantly, with the use of technology in education and the work place today, CALL offers students skills to meet their academic and real-life needs. However, for CALL to be successful in helping students develop their writing skills, many factors should be considered including teacher familiarity with and readiness to use the technology, student computer skills, and availability of both hardware and software (Moss & Southwood, 2006; Yunus, 2007). A few of these issues are discussed below.

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1.1. CALL and English as a second language writing

Writing and revising drafts are perceived as time-consuming and boring for learners (Owston & Wideman, 1997), but CALL activities with instructor assistance and computer-friendly techniques have been successful in helping students improve writing (Bialo & Sivin-Kachala, 1996; Chen & Cheng, 2006; Hart & Hicks, 2002; Lam & Pennington, 1995; Loannou-Georgiou, 2006; Owston & Wideman, 1997; Warschauer, 2000). The computer provides remedial instruction that detects and corrects students' productive skills' errors (Dodigovic, 2005), facilitates their active construction of knowledge, and immerses them in different learning situations (Stannard, 2007), thus helping them to produce better quality products (Bialo & Sivin-Kachala, 1996). Students who write with a computer or on paper do not go through the same writing process stages. The latter start their writing process by brainstorming, outlining ideas, writing, revising, producing drafts, and proofreading before the production of the final version (Pennington, 1989). The former begin by recording ideas, integrating the process of producing, revising, editing, and modifying ideas before the completion of the final draft (Goldberg et al., 2003). Further, computer users can control their learning, develop independent and autonomous learning strategies, and frequently practice the target language, by acting as peer-editors (Burns, et al., 2002; Goldberg, et al., 2003; Kang & Dennis, 1995; Lam & Pennington, 1995). The teacher facilitates the acquisition of the writing process, proofreads and evaluates students' work (Warschauer, 2000), and monitors students' discussions and their progress throughout the accomplishment of the task (Windeatt, Hardisty, & Eastment, 2001). Findings indicate that students display fewer new errors during the revision stage in contrast with those who rewrite their handwritten products (Cochran-Smith, 1991; Goldberg et al., 2003; Lam & Pennington, 1995).

1.2. CALL and motivation

Learning and motivation are two interrelated concepts. Learning can occur in the absence of motivation, but learners are less able to produce quality written products unless they are motivated (Dodigovic, 2005). Pintrich and Schunk (1996) distinguished between intrinsic motivation: engaging "in an activity for its own sake"; and extrinsic motivation: engaging "in an activity as a means to an end" (p. 284). Extrinsic motivation is related to external factors that cannot be controlled by students: being rewarded or punished for performing an action, taking an exam, or pressure imposed by society. To sustain students' intrinsic motivation, activities should reflect four elements: "challenge, curiosity, control, and fantasy" (Pintrich & Schunk, 1996, p. 285). A balance between students' extrinsic and intrinsic motivation is crucial for the maintenance of a well-balanced learning process (Pintrich & Schunk, 1996). Research has indicated that learners are more motivated when using the computer over pen and paper; however, the teacher's task is crucial in planning activities involving the wide information on the Internet (Ancker, 2002; Moss & Southwood, 2006; Ward & Mulholland, 2006).

1.3. CALL limitations

There are a few factors that might hinder students in producing quality writing when using CALL. First, the lack of keyboarding skills might prevent students from

producing written work within a limited period of time (Jackowski-Bartol, 2001; Lam & Pennington, 1995). Students who use word processors to develop their composition skills might also revise their electronic versions locally rather than globally, focus on format rather than content, and emphasize quantity rather than quality of the final written version (Lam & Pennington, 1995).

Second, some computer programs might include activities that lack the interaction upon which the language development process is based and thus impede the establishment of authentic communication (Brine & Franken, 2006; Lasagabaster & Sierra, 2003). Designing computer programs that emphasize the development of specific language skills while overlooking others and lacking the error correction feature which provides users with comprehensive, accurate, and detailed feedback (Chen & Cheng, 2006; Heift, 2003; Lasagabaster & Sierra, 2003) important in writing development (Dodigovic, 2005) may be counterproductive.

Moreover, lack of computer access or outdated hardware can lower teachers' confidence levels in using technological resources and weaken their computer-related competencies (Yunus, 2007), a major limiting factor affecting the students using CALL efficiently in the writing process (Franklin, 2007).

2. Research

2.1. The aim

This study explores the effectiveness of using CALL in motivating fourth-grade English as a second language (ESL) students to develop better writing skills and the perceptions of their ESL teachers and students regarding the use of CALL in the ESL classroom. It attempts to answer one question: How does the use of CALL in the fourth-grade ESL classroom affect learners' motivation for writing? To the authors' knowledge, no rigorous research has been done in this area at this level in Lebanon, thus the significance of the study.

2.2. The research context

The information technology (IT) curriculum in the school under scrutiny focuses on problem-solving, generalizing skills, and composing with hypermedia. It is based on a set of objectives that students have to master by the end of every school year. The IT teachers are informed about the topics studied in class. They develop the intended learning outcomes and plan computer-based activities that target the concepts taught in different subjects.

The study involves three sections of fourth ESL graders. Students use the computer to practice keyboarding, word processing, desktop publishing, presentation, file management, information management, page making, drawing skills and use of the Internet, and reinforce specific skills through educational games. They use the computer as a tool to fulfill their academic needs. The software *Mavis Beacon Teaches Typing* produces a report that indicates the keyboarding skills that each student has mastered. Students use *Print Artist* to create layouts with special forms and designs. They learn how to use PowerPoint by filling ready made layouts with relevant information or text. Other programs used are Microsoft Word, Paint, and Internet Explorer. Every classroom is equipped with a networked computer, a printer, and a scanner. Students go to the computer laboratory once a week for a period of 50 minutes.

2.3. The participants

Forty-eight Lebanese elementary ESL students enrolled in three class sections (23 males and 25 females) were part of the study. Their ages ranged between nine and 10 years old. Three Grade IV ESL and one Grade IV and V IT educator participated in the study. They were Lebanese females and non-native speakers of English and had been serving the school for more than 18 years. One ESL teacher of Australian nationality had been at the school for only one year.

2.4. Method

The study was conducted over a period of three months and access was granted by the school's director. All participants were informed that their participation was voluntary and that they could withdraw at any point (Fraenkel & Wallen, 2006). Purposive sampling allowed the researchers to select the cases to be included in the sample on the basis of judgment of their typicality (Cohen, Manion, & Morrison, 2000). A convenience sample included students whose parents signed the consent and assent form.

Four methods were used to collect the data: non-participant observations; students' focus group interviews; teachers' interviews; and questionnaires.

2.4.1. Observations

Students were observed in the computer laboratory as they were engaged in the writing process. A checklist reporting specific information about participants was used. Observational data shed light on the types of interactions that occurred inside the IT room. They also revealed students' attitudes toward using computer technology to accomplish their written tasks. Student–student interactions and teacher–student interactions in the IT classroom were observed.

2.4.2. Students' interviews

Focus audio-taped group interviews consisting of open-ended questions were conducted with student participants in the three Grade IV classes. The interviews allowed students to express themselves orally, think of their past and current experiences with the use of the computer as a tool for writing, express their feelings regarding a specific question, and initiate a discussion through which they could present and debate their viewpoints.

Students' focus group interviews were categorized as follows:

(1) favorite means of writing;
(2) attitudes toward completing written assignments without using the computer;
(3) perceptions of positive and negative aspects of using the computer to write;
(4) attitudes toward using the computer to complete written assignments;
(5) motivational criteria for selecting the best computer-based written assignment;
(6) usefulness of the Internet in completing computer-based written products;
(7) sources of support when having difficulties with writing using the computer.

2.4.3. Teachers' interviews

Individual semi-structured audio-taped and face-to-face interviews were conducted with each teacher. They consisted of a set of pre-planned questions. The participants talked freely and expressed themselves openly. Each interview lasted 45–60 minutes.

Teachers' interviews focused on the following points:

(1) Self-report information
(2) Classroom-based information
  (a) Teachers' experiences in using IT in the writing classroom
    (i) Use of computer applications
    (ii) Type of writing activities
    (iii) Type of difficulties
  (b) Teachers' perceptions of IT in developing students' writing competence
    (i) Effectiveness of IT
    (ii) Role of the Internet
  (c) Motivational factors that influence teachers' decisions in assigning computer-based written tasks
    (i) Advantages of using IT
    (ii) Teachers' sources of support to develop their computer skills
  (d) Teachers' descriptions of students' attitudes when using the computer to write
  (e) Teachers' perceptions of IT in developing teacher–student and student–student interpersonal relationships
  (f) Teachers' descriptions of their role as students use the computer as a writing tool
  (g) Teachers' perceptions of IT in developing students' writing competency in terms of quality and quantity

2.4.4. Questionnaires

Questionnaire items were constructed and administered to students during the English language class. Filling in the questionnaire took 15 minutes.

The questionnaire items highlighted the motivational aspects of using CALL to develop better writing skills. They also identified students' perceptions and attitudes regarding the use of CALL. The following nine categories emerged.

Students' perceptions of or attitudes toward:

(1) The quality of their computer-based written products;
(2) Their computer-based written products;
(3) The importance of attending computer laboratory sessions to develop their writing skills;
(4) The usefulness of the Internet in completing computer-based written products;
(5) Writing on the computer;
(6) Using the computer to type written assignments;
(7) Displaying computer-based written products on bulletin boards;
(8) Brainstorming ideas on the computer rather than on paper;
(9) Printing out computer-based written products.

3. Findings and discussion

3.1. Observations

The observational data shed light on the types of interactions inside the IT room. They also revealed students' attitudes toward using computer technology to complete their tasks as well as the teachers' instructional methods in helping students complete their computer-based written tasks. An observational checklist was used to report students' attitudes toward using the computer.

3.1.1. Student–student interactions

Students acted as peer-coaches (helping each other highlighting texts, using Print Artist, etc.) The teachers encouraged them by giving them oral feedback. Students were engaged in learning opportunities when working in pairs on an assignment such as ''agree on the same picture'', but they had to produce two different versions of the same task by writing their own interpretations of the chosen picture. Observations showed that the students spent much time agreeing on a picture but that the interaction interested the students and they were interacting in a motivating activity. Further, pair interaction involved students helping each other in solving computer-related problems (see Lam & Pennington, 1995; Goldberg et al., 2003) which proved to be a very motivating activity.

Thus, students' attitudes while using computer technology to complete their written tasks were positive.

3.1.2. Teacher–student interactions

Teachers tried to create positive learning environments that enabled students to use the computer and fulfill the requirements of their tasks. This finding concurs with that of Warschauer (1996) and Ward and Mulholland (2006). The IT and the three classroom teachers moved around and offered individual advice with one teacher pointing out some language mistakes. Teachers attempted to make a positive learning environment by encouraging some mechanical activities in using the computer to help with their work. This included using their 10 fingers while word processing, saving their work regularly, spell checking, using the functions of Print Artist (i.e. resizing the picture, changing the font), and checking work before printing everything with explicit directions. This was all part of facilitating the writing process and motivating students to use the computer at an individual pace and facilitating way. Once tasks were completed, students were allowed to benefit from the games on the computer which gave them something to look forward to. Although students faced some difficulties either with the use of the computer and/or the writing process, and teachers' attention was not always on the student as some would chat, the overall environment was a positive motivating one and the student experience was both enjoyable and educational.

Thus, teacher–student interactions were good which could be further developed as students become more computer- and writing-literate and as teachers assume their role in CALL.

3.2. Students' focus group interviews

According to the interviewees, the computer was regarded as a favorite means of writing. The majority reported positive experiences: producing neat and organized

products with fewer mistakes, typing faster and saving their work. Others commented: "... when I am using the computer for an assignment, I have fun. ... I learn how to type, I learn from my mistakes and how to type well." "I would feel kind of sad because when I type on the computer, my ... work would be neat and ... my typing will be better. But if I don't type on the computer, I couldn't get a lot of neat and my typing skills wouldn't improve."

Barker (1990) stressed that using computer programs tends to save students' time during the editing and revision stages. The participants affirmed that using the computer helped them: enhance their typing skills through fun; produce error-free written products; express their sentiments; and develop their information-gathering skills through the use of the Internet. Warschauer (2000) and Hart and Hicks (2002) found that the immersion of learners in interesting computer-based activities enables them to enjoy the language learning experience and express their thoughts through direct communication with different individuals.

The participants used the Internet to collect information and the spell-checker to correct their spelling errors. Furthermore, others described the computer as a creative, fun, nice, and easy-to-use tool that enables them to develop their typing and research skills. Lam and Pennington (1995) assert that the use of word processors allows students to have fun while accomplishing their written tasks since their perceptions of the writing act are no longer negative. Moreover, Stannard (2007) stresses that the use of the computer for writing enables students to actively construct their informational repertoires by acting as material researchers and analysts.

Many students affirmed that using the computer helped them produce neat written work: they can check, correct and learn from their spelling mistakes. It also encouraged them to write more, use the Internet to learn new vocabulary, and gather new information (e.g. definitions) in addition to accomplishing research-based tasks, changing the font style, developing their typing skills (i.e. type faster) and write better than when using paper and pencil. "I think it helped me improve because before I used to type on the computer, I never wrote a long story like two pages. I only wrote half a paragraph, now I started writing on the computers, I write like five pages and I really improved because if I put two spaces so it puts a green line under it so I have to press right click and it helps me understand where my mistake is, and if I spelled it wrong, it puts a red line under it."

Students' confidence and self-esteem were raised by the use of IT throughout the writing activity. Using IT in the language classroom allows students to develop their receptive and productive skills, their self-confidence, self-esteem, and self-concepts (Bialo & Sivin-Kachala, 1996; Lam & Pennington, 1995; Stepp-Greany, 2002).

The major use of the Internet was to conduct research, and collect information and pictorial items. Moreover, students tended to use educational CDs and electronic encyclopedias for written assignments. As Moss and Southwood (2006) argue the Internet is considered as a motivator that facilitates students' completion of their research tasks. Conversely, the Internet can be considered as a demotivating factor especially when it misleads students by the vast amount of information it displays.

Students commented that "The best thing is that ... when we go to the Internet. Because like I did a presentation and I gathered a lot of information about ancient ... ancient history and yeah ..." "My best thing about doing a computer assignment is I get more knowledge and more information, and learn more things, like once I made a research about dinosaurs in the prehistoric time ..."

Some said that the best assignment they have written using the computer was a poem while others claimed that it was a research-based task. One student considered the longest and the most understandable task as the best one he has ever written, "I chose it because it is long, people understand it, it is creative and uh. I used a lot of my creativity." Some reported they enjoyed typing their assignment and using its different features (e.g. changing the font style).

Students claimed that they used the Internet to research, gather information, and collect pictures about a specific topic. Students thought that the Internet provided them with new vocabulary terms and detailed information about a relevant subject, and highlighted the different aspects of the research topic, whereas books provided them with a limited amount of information and pictures.

Students declared that when facing difficulties with writing using the computer, they got help from their parents or their siblings, or tried to solve their problems by themselves:

> Usually at home, well the computer, it fixes your mistakes but not all your mistakes. So that's when you have to edit, so you have to read again and see your mistake. But if you can't solve them, you can't find out what they are, you can ask your mom or dad; usually my brother helps me and my dad. When my brother and dad are not at home, I try to face it by myself; me no one helps me. I try to solve it by myself.

Students perceived the use of the computer as important, entertaining, non-traditional, and time-saving. Lam and Pennington (1995) believe in the multifunctional aspect of word processors that can turn the traditional product-oriented writing experience into a collaborative process-oriented one. In addition to using the Internet as an information-gathering tool, the participants were familiar with its use as a medium to facilitate communication among people around the globe. Furthermore, they were aware of the danger of using some websites and Internet resources.

3.3. Teachers' interviews

Rana, Nour, and Dima are Grade IV homeroom teachers. Juheina teaches IT skills in Grades IV and V. It is Rana's first year of teaching. The other three have 15+ years of experience.

Students go to the IT laboratory once a week for a period of 50 minutes to type their personal journals, stories, poems, conduct research as well as to practice their keyboarding skills. They are free to use the computer laboratory and the library during recess.

Students use word processors such as Microsoft Word and a web organizer program like Inspiration as computer applications. Other programs such as "Mavis Beacon", Print Artist and Paint or Encarta, an electronic encyclopedia are also used. Teachers pinpointed that they always tell their students to paraphrase the information after their retrieval. However, they did not state whether or not their students were taught how to surf the Internet and most importantly write the ideas that they got in their words, and cite the sources appropriately.

The computer-based writing assignments were based on classroom teachers' instructional objectives. Burns et al. (2002) maintain that the use of any technological tool has to help students meet their real-life needs. Moreover, students go to the computer room to create written products and feel empowered technologically (Ancker, 2002).

3.3.1. Internet as a source of ideas and content

The use of the Internet was perceived as useful in terms of writing skills only when the students "are rephrasing the information", not "searching for information." In Juheina's words, "the Internet has an important role in providing students with ideas. They need to paraphrase using their own language in order to avoid plagiarism".

All the interviewees emphasized the need to have students paraphrase the information that they collect via the Internet to avoid plagiarism. However, Dima insisted that students were not allowed to copy and paste information from the Internet.

Rana believed that the use of the Internet helped her students "with efficiency and finding information", but it did not help them become better writers. Nour considered the act of reading information displayed on the Internet as a motivator that would encourage them to complete their written assignments. She said, "when they're reading, that motivates them ... they get more ideas". She claimed that students "should always write down the site that they're using so there's no plagiarism, so that so they're aware of it". Nour described the Internet as "a good connection between home and school". Dima agreed that the Internet helped her students "get information".

Students were involved in different writing activities. They were asked to gather information using the Internet, then paraphrase and type on the word processor. However, teachers did not emphasize the need to teach students how to select and analyze information critically and see whether it was relevant or not to be retrieved (Ancker, 2002; Warschauer, 2000). Learners typed their journal entries and web organizer programs to clearly present their ideas.

The teachers focused more on assessing the content of their students' computer-based written assignments. They perceived the use of the computer as a tool to develop their creativity and hoped that the school could provide every classroom with at least five computers.

Rana viewed IT as "incredible". "It's a great tool for creativity which is my kind of focus." On the other hand, Nour expressed her desire to "have a computer for every student in class". She aimed at increasing the students' opportunities in using the computer on a daily basis as a resource that would help them access interactive sites that address concepts in different subject matters. She also proposed that incorporating five computers in every classroom would expand to a real computer center. This all suggests that the use of such a tool is being positively perceived by the teachers.

3.3.2. Availability of adequate computer resources

The lack of computer resources, however, within the regular classroom setting was considered a major threat to the successful implementation of computer technology.

Rana mentioned that students' lack of exposure to using computers inside the regular classroom setting might be difficult "due to the fact that there's only one computer". She implied that there should be enough computers in the classroom to give all students the greatly needed equal exposure to the use of such a tool. She pointed out that "other students feel they are missing out when one person is on the only computer available".

Nour also complained about having only one computer in the classroom. This has created classroom management problems such as ''changing students' daily classroom routines/plans''. Furthermore, ''Saving and retrieving their work in their folders,'' ''printing and using the appropriate printer,'' were among the difficulties that were faced by the students as indicated by Juheina.

This idea is consistent with what Ward and Mulholland (2006) have found regarding the lack of computer resources, quality software, and technical support in impeding the process of accomplishing a written task on the computer. Thus, not having enough computers compromised the skills the students were able to develop.

3.3.3. Success in using computers depends on skill of students

Dima pointed out that the use of the computer as a means for writing did not benefit passive learners present in her classroom since their basic computer skills were not up to the standards, thus relatively underdeveloped. However, she admitted that ''the majority like it. Some excel, some do well, some learn, some progress, some improve ...''

Nour considered having the students save their work improperly on the computer as a difficulty. She explained that saving their work and retrieving it again is a ''skill that has to be taught'' and sometimes it has to be taught ''on a one-to-one basis''.

Saving their work on the computer and printing it using the appropriate printer were identified as the main difficulties faced by students. Lasagabaster and Sierra (2003) point out that the success of any computer-based writing experience depends on the teacher as well as students' familiarity in manipulating the computer's functions.

3.3.4. Impact of students' skills with computer on motivation

Warschauer (2000) stresses that developing students' and teachers' Internet skills is a necessity in the language learning process to keep them confident and empowered.

In the interviewees' opinions, the motivational factors were the computer's special functions, students' motivated attitudes toward the use of such new means of writing in addition to the professional, technical, and technological support that their school has offered them (Burns et al., 2002).

Rana said, ''Kids love it ... They love the idea of having a computer and they get to use it. It's more exciting for them than just to have pen and paper.'' Rana saw the use of computer technology by the students as an essential lifelong skill. ''A very important tool that they definitely need. So ... it's a skill for the rest of their lives. So, it's very essential.'' Rana stated that what motivated her to assign computer tasks was the fact that it was beneficial for the students in their future lives. Nour declared that the students seem motivated to write on the computer simply because they consider it a non-traditional tool and it allows its users to publish written work of good quality.

An important benefit of CALL is how students are able to use it in writing to overcome deficiencies in presentation, to enhance the appearance of the work, and how this increases their motivation to use CALL in writing. Dima considered that students' work was personally produced (i.e. personal input) as a motivational factor as well. Juheina asserted that students with bad handwriting, really like to work using the computer: 'They are motivated to use it.' She thought that the use of computers was motivating for such students since it helped them ''locate their

mistakes'', ''correct them'', ''decorate their work'', ''publish it'', and finally ''hang it in the class and in the hallways''.

Furthermore, Windeatt et al. (2001) argue that students' high motivational levels throughout the use of the computer is due to the novelty of the medium, the availability of resources and technical support (Yunus, 2007), and teachers' preparedness in helping students overcome their computer-based obstacles (Barker, 1990). Hamilton (2007) emphasizes learners' intrinsic motivation to use the available piece of technology.

Teachers reported that the use of computer technology encouraged students to develop and enhance their writing skills, i.e., using a computer to write has a positive effect on students' attitudes.

3.3.5. Ability of students to personalize their work, focus on individual needs, as factors in motivation and attitude

Dima also reported that the students' happiness in writing on the computer was due to the production of a personal input and an individual effort. Nour focused on students' independent attitudes when working on the computer. She remarked that students seemed motivated while working independently on the computer to apply what they have learned individually, in pairs, or in groups. Nour replied ''when they get to writing what they've learnt, what they want to learn or when they're doing a web or when they're ... just printing, publishing their work, they do it on their own. It is a chance for them just to work on their own and they're motivated to do that''. Rana reported that the students who ''are not in the mood to write'' or those ''who get distracted easily'' were motivated by the use of the computer since it helped them focus on the task in hand. According to Juheina, ''most of the students have a positive attitude toward the computer''. She stated that they ''run to the computer lab'' and ''they enjoy being in the lab''. ''Enthusiastic'', ''eager to learn'', and ''motivated to start work'' were the positive sentiments that reflected their degree of motivation, as stated by Juheina.

3.3.6. Use of CALL in writing helped teachers and students learn and work together

Features of word processing software could enhance the writing process. Rana saw the computer as a ''good tool'' since it can help the bad spellers correct their spelling mistakes. She also found that using the computer is easier for the students ''who have trouble with handwriting''. Importantly, she further thought that the use of the word processor and Internet at home helped students easily complete their research projects. Dima, however, considered the use of the spell checker as something that does not really improve students' writing skills. She also added that if the students ''have sentence structure mistakes, the computer would tell them, will identify the mistake but not give the correct answers''. Although Dima believed that computers could support students' learning, her answer demonstrated her negative perception towards the use of computers in developing her students' writing skills. Juheina, on the other hand, viewed the use of computers as something that would facilitate the processes of editing and revising students' computer-based written products. She said ''it will help by deleting or adding to their paragraph words and expressions easily''. Moreover,

Juheina considered the use of electronic dictionaries throughout the completion of a written task as useful since it helps the students "to search for the meaning or for another synonym in order to enrich their sentences". Teachers believed that the use of word processors facilitated students' production of creative and well-edited written materials (see Appendix for student samples).

Also, the use of the computer as a tool for writing developed student–teacher and student–student interpersonal relationships. Teachers and students were able to exchange information, share knowledge, and learn from each other when computer technology was used. Dörnyei (2001) states that the quality of communication that occurs between the interactants can influence their motivational level. Goldberg et al. (2003) maintain that the teacher's role as a facilitator in the computer-based writing classroom stimulated students' motivation and developed their independent language learning strategies.

It seemed that a few teachers did not know what their role was in teaching/learning writing through CALL which needs to be addressed.

Students seem stimulated and curious when using word processors and this enables them to develop their target language creatively. This concurs with the findings of Lam and Pennington (1995) and Bialo and Sivin-Kachala (1996) among others. Although the authors acknowledge the benefits of the Internet as a tool in motivating students to become better communicators and researchers, they believe that such a tool might lose its effectiveness if overused or misused by students.

3.4. Questionnaire

The questionnaire items highlighted the motivational aspects of using CALL to develop better writing skills. They also identified students' perceptions and attitudes regarding the use of CALL.

Participants were consistent in holding positive perceptions and attitudes toward the use of IT to accomplish their written tasks. The majority (68%) had positive perceptions of the quality of their computer-based written products.

First, they believed that using computers enabled them to edit their work, organize their ideas, correct their spelling mistakes, produce neat written products, design, and publish creative products (see Table 1 below).

The above results concur with Burns et al. (2002) findings that students tend to adopt positive perceptions toward editing and revising their work on the computer. Although a low student percentage mentioned the format of the final product, this may be due to the fact that more emphasis may be placed on the writing content.

Second, many respondents (83.3%) expressed positive perceptions toward attending computer laboratory sessions in addition to their perceptions of the quantity of their computer-based written products. The findings in Table 2 below show that they considered attending computer laboratory sessions beneficial since

Table 1. Student percent frequencies – attitudes towards written tasks.

	Percent frequency
1. Edit, organize and correct spelling mistakes	60
2. Neat written products, design, and publish creative products	12.5

they helped them develop their writing skills. Many students considered the computer laboratory as a production laboratory as it enabled them to produce work of good quality (Ancker, 2002). The use of computer technology encouraged them to write more. This finding is supported by Barker (1990) who claimed that students who are given the chance to write creatively on the computer are those who end up producing lengthy written products.

A majority of the participants (81.3%) considered their knowledge of the Internet well-developed and perceived its use beneficial since it enabled them to gather relevant information. Windeatt et al. (2001) believe that using the Internet allows students and teachers to access a wide array of online material which they might otherwise not have access to and thus motivates students to read and incorporate relevant information to support their ideas in their own writing.

Students' attitudes toward writing on the computer were also examined. Many (95.8%) considered the use of IT as enjoyable and exciting. This finding is consistent with Ancker's (2002) who considers the act of writing on the computer an opportunity that stimulates elementary students to improve their communicative skills. Moreover, students' frustration and anxiety levels tend to diminish, and their motivational level toward writing on the computer tends to increase. The majority of students (70.9%) felt that their frustration level tends to be low when they use the computer as a tool for writing. While 18.8% expressed a high level of frustration whenever they had to write on the computer, 10.4% had a neutral feeling toward writing on the computer. A little less than two-thirds of the students (64.6%) stated that their motivational level toward writing tends to increase with the use of the computer.

Third, students' attitudes toward typing written assignments were acknowledged. The participants (66.7%) developed high confidence in their typing speed and keyboarding skills, thus showing positive attitudes toward typing on the computer.

Findings in Table 3 indicate that almost 18.8% had neutral feelings toward using the computer to type their written assignments. Seven students (14.6%) had negative attitudes toward typing their assignments on the computer.

This might suggest that such students' keyboarding skills might not be well-developed. Goldberg et al. (2003) maintain that students adopt positive attitudes

Table 2. Student percent frequencies – attitudes towards computer use.

	Percent frequency
1. Attending computer sessions	83.3
2. Use of extensive resources from Internet	81.3
3. Use of the computer	95.8
4. Computer lessens frustration level	70.9
5. Computer increases motivation level	64.6

Table 3. Student percent frequencies – attitudes towards use of computer.

	Percent frequency
1. Neutral to use of computer	18.8
2. Negative to use of computer	14.6

toward the completion of their written tasks especially if their keyboarding skills were well-developed.

Fourth, the act of displaying students' computer-based written products on bulletin boards was considered a motivator to write. Moreover, enabling students to print out their work motivated them to write. Nearly half the participants preferred to brainstorm their ideas straight on computers than on paper.

While 52.1% felt more comfortable brainstorming their ideas straight on computers than on paper only 25% indicated that they had negative feelings towards brainstorming their ideas on computers as indicated in Table 4 below.

A high 91.6% feel happy when people read their computerized writing posted on bulletin boards. This demonstrates that displaying students' computer-based written products on bulletin boards can be considered as a motivator to write. Only one student (2.1%) expressed a negative attitude toward having people read his/her computerized writings posted on bulletin boards. The participant's negative attitude might be due to the low quality of his/her written products.

Few students expressed negative attitudes toward the use of computer technology in the writing classroom. Their lack of keyboarding skills, high frustration level, and the notion of brainstorming their ideas straight on computers were among the factors that prevented them from thinking positively about the use of computer technology to accomplish a written task.

4. Conclusion and future considerations

The study attempted to answer the following question: How does the use of CALL in the fourth grade ESL classroom affect learners' motivation for writing? Findings revealed that students as well as teachers hold positive perceptions toward the use of CALL in the writing classroom.

Although this study does not guarantee students' future attitudes and perceptions toward IT since they might be required to use different computer resources to complete their written assignments, the majority considered IT as motivating. It enabled them to have fun, while at the same time attempting to produce creative, neat, organized, error-free written products. It helped them express their feelings and gather relevant information to fulfill the requirements of their writing tasks.

Teachers perceived the use of IT by students as beneficial. It facilitated the production of products, helped students' research skills to a certain degree and furthered student–teacher and student–student relationships. However, the weaknesses in basic computer and research skills were identified as major factors that prevented students from presenting high quality written work.

Research findings imply that using IT in the writing classroom must be carefully integrated. Computer-based writing activities have to be carefully planned and

Table 4. Student percent frequencies – attitudes towards use and acknowledgement.

	Percent frequency
1. Brainstorming on computer – positive	52.1
2. Brainstorming on computer – negative	25.0
3. Audience read from computer output – positive	91.6
4. Audience read from computer output – negative	2.1

students' performance throughout the completion of such tasks must be closely monitored.

Recommendations related to the successful implementation of CALL within the writing classroom include that students be:

- taught how to access reliable websites to locate and select relevant information to help them fulfill the requirements of their written assignments;
- taught how to paraphrase and cite information collected via the Internet to avoid plagiarism;
- encouraged to focus on the neatness of their writing;
- helped to use the computer programs' features to enhance the quality of their written products;
- taught to use the programs' features to increase the quality of their writing.

A note to ponder is how to investigate and implement ways for teachers to improve their awareness of CALL and IT. This can be done though informal learning and attending professional development training sessions that target the issue of assisting students in the computer room. Thus, they will be more aware of their duties vis-a-vis the students.

In this study, students produced written work of moderate quality although they had positive perceptions of computer technology and demonstrated positive attitudes toward its use. Future research must explore whether or not students' moderate achievement in computer-based writing is being affected by the IT teacher's instructional strategies, lack of proper assistance in the computer room, students' learning styles, or the quality of the available technological resources. We can not afford to ignore the motivational factors that CALL can offer in the writing classroom.

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References

Ancker, W.P. (2002). The challenge and opportunity of technology: An interview with Mark Warschauer. *Forum*, *40*(4), 2–7.

Barker, T.T. (1990). Computers and the instructional context. In D.H. Holdstein & C.L. Selfe (Eds.), *Computers and writing: Theory, research, practice* (pp. 7–17). New York: The Modern Language Association of America.

Bialo, E.A., & Sivin-Kachala, J. (1996). The effectiveness of technology in schools: A summary of recent research. *School Library Media Quarterly*, *25*(1), 1–17.
Brine, J., & Franken, M. (2006). Students' perceptions of a selected aspect of a computer-mediated academic writing program: An activity theory analysis. *Australian Journal of Educational Technology*, *21*(1), 21–38.
Burns, P.C., Roe, B.D., & Smith, S.H. (2002). *Teaching reading in today's elementary schools*. Boston: Houghton Mifflin.
Chen, C.F.E., & Cheng, W.Y. (2006). *The use of a computer-based writing program: Facilitation or frustration?* Paper presented at the 23rd International Conference on English Teaching and Learning in the Republic of China. Wenzao Ursuline College of Languages, Kaohsiung, Taiwan.
Childers, P.B., Jordan, J., & Upton, J.K. (1998). Virtual high school writing centers: A spectrum of possibilities. In E.H. Hobson (Ed.), *Wiring the writing center* (pp. 137–150). Utah: Utah State University Press.
Cochran-Smith, M. (1991). Word processing and writing in elementary classrooms: A critical review of related literature. *Review of Educational Research*, *61*, 107–155.
Cohen, L., Manion, L., & Morrison, K. (2000). *Research methods in education* (5th ed.). New York: Routledge.
Dodigovic, M. (2005). *Artificial intelligence in second language learning: Raising error awareness*. Clevedon: Multilingual Matters.
Dörnyei, Z. (2001). *Teaching and researching motivation*. London: Longman.
Fraenkel, J.R., & Wallen, N.E. (2006). *How to design and evaluate research in education* (6th ed.). New York: McGraw Hill.
Franklin, C. (2007). Factors that influence elementary teachers' use of computers. *Journal of Technology and Teacher Education*, *15*(2), 267–293.
Goldberg, A., Russell, M., & Cook, A. (2003). The effect of computers on student writing: A meta-analysis of studies from 1992 to 2002. *The Journal of Technology, Learning, and Assessment*, *2*(1), 1–52.
Hamilton, M. (2007). Welcome to the machine. *Modern English Teacher*, *16*(1), 50–51.
Hart, A., & Hicks, A. (2002). *Teaching media in the English curriculum*. London: Trentham Books.
Heift, T. (2003). Multiple learner errors and meaningful feedback: A challenge for the CALL systems. *CALICO Journal*, *20*(3), 533–548.
Jackowski-Bartol, T.R. (2001). *The impact of word processing on middle school students*. Unpublished master's thesis, Chestnut Hill College, Philadelphia.
Kang, S., & Dennis, J.R. (1995). The effects of computer-enhanced vocabulary lessons on achievement of ESL grade school children. *Computers in the Schools*, *11*, 25–35.
Lam, F.S., & Pennington, M.C. (1995). The computer vs. the pen: A comparative study of word processing in a Hong Kong secondary classroom. *CALL*, *8*, 75–92.
Lasagabaster, D., & Sierra, J.M. (2003). Students' evaluation of CALL software programs. *Educational Media International*, *40*, 293–304.
Loannou-Georgiou, S. (2006). The future of CALL. *ELT Journal*, *60*(4), 382–384.
Moss, M., & Southwood, S. (2006). *E-learning for teaching English for speakers of other languages*. London: National Institute of Adult Continuing Education.
Owston, R.D., & Wideman, H.H. (1997). Word processor and children's writing in a high-computer-access setting. *Journal of Research on Computer in Education*, *30*, 302–219.
Pennington, J.R. (1989). Word processing and teacher evaluation. *Electronic Learning*, *3*, 66–82.
Pintrich, P.R., & Schunk, D.H. (1996). *Motivation in education: Theory, research and applications*. New Jersey: Prentice Hall.
Stannard, R. (2007). Drawing from the research into multimedia learning and design. *Modern English Teacher*, *16*(1), 52–55.
Stepp-Greany, J. (2002). Student perceptions on language learning in a technological environment: Implications for the new millennium. *Language, Learning and Technology*, *6*, 165–180.

Ward, H.C., & Mulholland, R. (2006). CALL technologies: Survey responses concerning university and school systems' responsibilities. *The Reading Matrix*, *6*(3), 322–329.

Warschauer, M. (1996). *Telecollaboration in foreign language learning: Proceedings of the Hawai'i symposium*. Honolulu: University of Hawai'i, L2 Teaching and Curriculum Center.

Warschauer, M. (2000). Online learning in second language classrooms: An ethnographic study. In M. Warschauer & R. Kern (Eds.), *Network-based language teaching: Concepts and practice* (pp. 41–58). New York: Cambridge University Press.

Windeatt, S., Hardisty, D., & Eastment, D. (2001). *The internet*. Oxford: Oxford University Press.

Yunus, M.M. (2007). Malaysian ESL teachers' use of ICT in their classrooms: Expectations and realities. *ReCALL*, *19*(1), 79–95.

Appendix

Assignment: Using words

Samples of students' CALL writing assignments

Student 1

How the World Works

1. Sound 2. Noise 3. Mood 4. Noise pollution

1. Sound:
   A. Definition: something That Can Be Heard
   B. Sentence: My dad heard a sound from the other building.

2. Noise:
   A. Definition: A loud, surprising, irritating and unwanted sound.
   B. Sentence: I heard some very loud noise then I jumped on my bed!

3. Mood:
   A. Definition: Somebody's state of mind.
   B. Sentence: Last week my dad had a very angry mood.

4. Noise pollution:
   A. Definition: irritating, distratiting, physically dangerous noise to which people are exposed in their environment and over which they usually have no control.
   B. Sentence: In my city almost all the streets have noise pollution.

Student 2

How the World Works

Sound:

- Anything that makes sound could be a musical instrument. But we usually think of musical instruments as objects specially created to produce the sounds of the music we know – folk, rock, classical, and all other types.
- Musical instruments range from simple to complex.

Student 3

The Play/Vocab Words

One day Red was making a **script** and she wanted it to be funny. (I could make the best play) she told herself **triumphantly**. She told all the friends if they wanted to join her play. They were all **acceptable**, except wolf. They tried everything for wolf to change his mind. They couldn't try anything but tricking him. Everyone thought it was **injustice** that wolf does not want to join them. (It's not fair, wolf is so self centered) red said **desperately**. (Maybe wolf is tryig to trick us). Red was **repentant** to wolf. So under all these **circumstances** wolf finally agreed to do the **script**. So they did the play and it was hilarious and the best.

(The samples are kept as the students word processed them).