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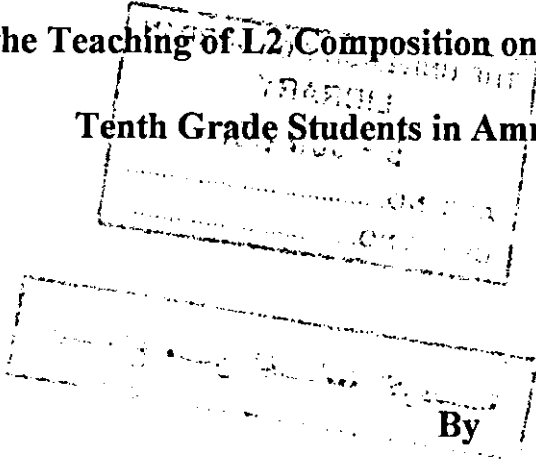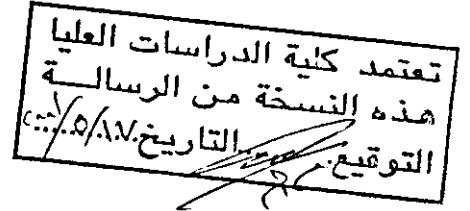
in the Teaching of L2 Composition on the Writing Performance of

Tenth Grade Students in Amman Private Schools

By

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Supervisor
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Submitted in Partial Fulfillment of the Requirements for the Degree of

Master of Education in

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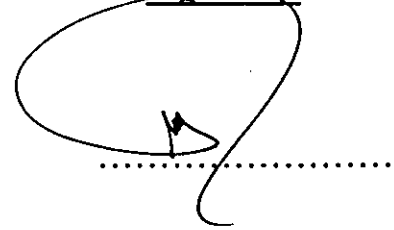### Faculty of Graduate Studies

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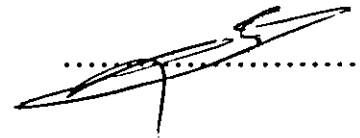
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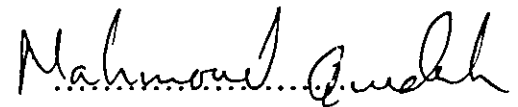
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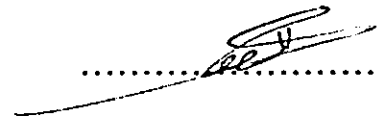It is my great pleasure and delightful duty to express my sincere thanks, gratitude and appreciation to my supervisor Dr. Nayel Alshara'h for his support, guidance, patience, time, and understanding.

Most certainly also I am grateful to the committee members who read, examined and supervised my defence of this thesis. I would also like to thank every member in the Faculty of Educational Sciences for their support during my study.

To all, once again thank you for everything.

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A LIST OF ABBREVIATIONS

A number of abbreviations and symbols are used in the dissertation. These are listed below.

EFL	English as a Foreign Language
ESL	English as a Second Language
L2	Second Language
p.	Page
pp.	Pages
&	And

A LIST OF APPENDICES

ABSTRACT

The Effect of Using Computers in the Teaching of L2 Composition on the Writing Performance of Tenth Grade Students in Amman Private Schools

By

Sameeh Daoud Alsouqi

Supervisor

Dr. Nayel Alshara`h

The purpose of this study was to investigate the effect of using computers in the teaching of L2 composition on the writing performance of tenth grade students in Amman private schools. In order to achieve this purpose, the study sought to answer the following three questions:

1. Are there statistically significant differences at (α = 0.05) between the writing performance of the students who are trained to write through computers, and that of those who are trained to write in the traditional way?

2. Are there statistically significant differences at (α = 0.05) between the writing performance on the linguistic level (local aspects), of the students who are trained to write through computers, and that of those who are trained to write in the traditional way?

3. Are there statistically significant differences at (α = 0.05) between the writing performance on the rhetorical level (global aspects), of the students who are trained to write through computers, and that of those who are trained to write in the traditional way?

To answer the three aforementioned questions, the researcher taught English language composition to two different groups of tenth grade students at Rawdat Al-Ma'aref College and School in Amman. The sample of the study consisted of 37 tenth grade students who were distributed in two classes. While the class representing the control group, which was trained to write English composition in the traditional way, had 17 students, the second class representing the experimental group, which was trained to write English composition with the aid of computers, had 20 students. In order to answer the questions of the study, a pre-test was conducted for both groups before the beginning of the treatment to detect the students' writing performance. The same test was used as a post-test at the end of the treatment, which took a whole semester. A Checklist of Composition Evaluation was developed and validated to evaluate students' writing performance. The Checklist covered two dimensions the: linguistic and rhetorical aspects of writing.

At the end of the experiment, the data collected were analyzed by computing the Analysis of Covariance (ANCOVA), using the scores of both groups in the pre-test as a Covariate. The findings of the study indicated that using the computer, as a writing tool, seemed to have a significant effect on students' writing performance, at both levels: the local (linguistic aspects), and the global (rhetorical aspects).

Based on the above-mentioned findings, the researcher recommends the use of computers in the teaching of English language composition to improve the quality of tenth grade students' writing. The researcher also recommends that students should be trained to use new methods in writing English language composition with the aid of computers.

Chapter One

Introduction

Background and Need for the Study

Writing is no longer viewed as a simple, linear activity consisting of several stages that are independent and sequenced. In contrast, writing is now recognized as a complex, integrated set of processes that are interactive and recursive. Writing involves the creation of ideas as well as the ability to express them logically and coherently. It does more than reflect thoughts, it liberates and develops them (Rice and Burens, 1986: xii).

According to Alkhuli (1996), "writing is one of the major skills involved in learning a foreign language because it is a medium of conveying messages" (p.70). Students should be challenged to use what they know about the world to construct their ideas and to fit them into a pattern which is easily understood by the reader. They should learn to depend not only on the spoken mode to communicate, but also on the written one, because the written mode is just as important as the spoken one, even more important since it serves as a permanent documentation of interaction or communication.

One reason for Jordanian students' writing problems might be the use of a traditional approach of composition instruction. Through this traditional approach, teachers roughly explain what features characterize a good text, emphasizing the importance of correct grammar and spelling. Teachers ask their students to write a short

paragraph. This paragraph is then evaluated and commented upon based on linguistic matters. Teachers hope that the next writing assignment will be automatically better.

It becomes more and more evident though, that this approach is not satisfactory. Weiss (1989) believes that writing is a complex process, and teachers who want students to improve their writing cannot confine themselves to product-oriented instruction. Good writing instruction is process-oriented (pp. 45-59). Students should be given a realistic idea of the distinct phases that have to be passed through, and they have to be advised exactly what to do in order to arrive at an acceptable product.

There is no question about whether computers will or will not be used for instructional purposes. Rather, the issue now is how computers will be used to enhance learning in schools. If one assumes that the use of computers for educational purposes should be made on pedagogical grounds, then the interactive aspect of technological education needs to be the focus. The interactive aspect of technological education includes an independent philosophy of education combined with theory of educational computing (Ruszkiewicz, 1988, pp. 9-20). The educational community recognizes that the learning process is extremely enhanced when learners are actively involved in the learning process, and when they are given the opportunity to be involved in dialogue with teachers and peers. However, it is difficult to maintain an interactive learning environment in composition classes when teachers and students face the problem of writing illustrated previously. Given the present conditions in Jordanian schools, it is unlikely that learning will be maximized for all students unless alternatives to current teaching practice are established. It is expected that computers can provide an interactive learning environment within which students' instructional needs can be met.

Montague (1990) holds the view that a theory of educational computing requires a fundamental conceptualization of the nature of learning. Learning, as an interchangeable process, requires that the learner be challenged by the learning environment and cognitively engaged in the learning activity. He states:

> As computers become more a part of the educational and learning environment, learners should become more involved and should assume a greater sense of ownership in relation to cognitive as well as affective outcomes. The impact of computers on the intellectual and affective development of students should be significant, particularly in regard to how they affect the types and levels of information processing and motivational aspects of learning (p.19).

Hawkins and Sheingold (1986), cited in Montague, believe that there are several aspects of the teaching–learning process to be affected by the incorporation of computers in the classroom. These include curriculum design, learning interactions, and the assessment and monitoring of student progress. In their view, the computer shifts the emphasis in education away from learning aspects and information toward understanding, synthesizing, and interpreting information. Additionally, Hawkins and Sheingold hold the view that:

> Computers provide a creative environment for students to explore their capabilities and further develop their thinking and problem solving abilities. Collaborative learning then becomes the basis of the instructional process. Teachers undergo role shifts to be less the providers of content–specific

grammatical and organizational problems that frequently interfere with the writing process can be reduced. Rubin (1983) cited in Montague (1990) believes that "by providing tools that facilitate writing and revising, and by creating communication environment that naturally encourage writing, computers may actually be able to offer new opportunities for learning by doing that are not available in non-computer classrooms" (p.22).

Balester et al (1992) mention that the basic advantage of using computers in the composing process is that they encourage collaboration and experimentation (pp. 25-40). Handa (1990) states that

> The computer based collaborative approach attempts to re-empower text by emphasizing the student text itself instead of the instructor's evaluation. Computers are used to facilitate the generation and distribution of both original writing and written student responses to that writing. As students grow aware of how they themselves respond to the words and phrases of their peers, they grow more aware of how their own words are being read (p.24).

Computers are expected to solve many problems in composing. Instructors no longer need to be uncomfortable about asking a student to revise a paragraph, or to provide additional evidence for a statement. More important, the computer encourages students to see their work "in progress" because the medium in which it is stored is so flexible. Furthermore, the computer can remove other obstacles that face the success of writing across the curriculum: spelling and style checkers remove some of the mechanical errors that so many teachers find intolerable. Each paper, no matter the number of drafts written are, is neatly printed and easily read.

Teaching composition with the aid of computers differs from teaching composition with paper and pencil. New procedures and new ways to provide assistance for students need to be set up. Furthermore, understanding the process of composing with computers requires careful attention to the dynamic interrelations of the tool, the tasks, the procedure, and the teaching environment.

Statement of the Problem

The ability to write is one of the most essential skills which EFL learners need to develop throughout their schooling. However, after years of learning English as a foreign language, students in the Jordanian schools appear to be unable to write properly. This could be ascribed to a number of factors. The way in which English is taught is believed to be a decisive factor. Although the current English language syllabus, as stated in the English language teacher's Book and the Ministry of Education English Language Curriculum and its General Guidelines for the Basic Education Stage, is based upon the communicative approach to second language teaching, the practice of teaching English language writing seems to be carried out in the traditional way. Teachers enter the class, assign their students a topic and ask them to write a composition about it. Then teachers evaluate the written tasks, commenting on the mechanics (grammar, vocabulary, spelling and punctuation) of students' writing. This resulted in students' failure to express themselves properly in writing (Al-Sharah, 1988).

Through a pilot study conducted by the researcher to investigate Jordanian students' abilities in writing English, a great number of Jordanian students do not appear to write English very well. Furthermore, teachers complain that students are barely capable of putting their thoughts down on paper. These are some of the complaints one

frequently hears about Jordanian students studying English. Therefore, writing instruction should be made much more effective. The question that may arise is: How can language teachers comply with it?

The findings of the pilot study are in line with Farghal (1992) findings. Farghal writes that:

> The teaching of writing in EFL has assumed various guises through the development of English teaching methodology over the past four decades. Until recently, the mechanics of grammar were in the forefront; thus, L2 learners were trained and urged to write errorless compositions no matter how disintegrated they were because grammatical accuracy was the major objective of writing (p.46).

Another important problem which Jordanian English language teachers complain about is the lack of time for teachers to supply high quality feedback instead of some general comments. Meanwhile, the number of students that should be assisted is so large that makes it difficult for teachers to provide everyone with the comments adequately fitting their writing achievements.

Such a problem is felt by many sectors of the Jordanian society. Nowadays, the educational system in Jordan is concerned with equipping students with means of adopting computer education curricula. This direction is given maximum priority at the highest governmental level. The Ministry of Education at the moment is in the process of upgrading the educational system through the introduction of a computerized syllabus, and the teaching of English to lower grades in the basic stage. Such an interest reflects the educational community's desire to shape a unique vision of the role-played by technology in English language programs as well as other educational programs.

The present study attempts to investigate the effect of using computers on the writing performance of tenth grade students. The use of computers as a writing tool is believed to help students write better, and consequently, participates in solving the problems of writing in Jordanian schools.

Purpose and Questions of the Study

As noted above, writing classes in Jordanian schools have a serious problem. The current study on the use of computers in teaching composition is expected to assist in solving the problem. It does not try to replace the writing practices in the traditional classroom. Rather, it seeks to find new ways of using technology to enhance the process of teaching writing, and then to provide teachers with basic guidelines for integrating computers into Jordanian English language composition classrooms. In other words, the study aims to investigate the effect of using computers on the writing performance of 10th graders. More specifically, the study seeks to answer the following three questions:

1. Are there statistically significant differences at ($\alpha = 0.05$) between the writing performance of the students who are trained to write through computers, and that of those who are trained to write in the traditional way?

2. Are there statistically significant differences at ($\alpha = 0.05$) between the writing performance on the linguistic level (local aspects), of the students who are trained to write through computers, and that of those who are trained to write in the traditional way?

3. Are there statistically significant differences at (α = 0.05) between the writing performance on the rhetorical level (global aspects), of the students who are trained to write through computers, and that of those who are trained to write in the traditional way?

Significance of the Study

The current study on the effect of computers on students' writing performance is expected to serve two goals: to help with integrating technology into English language composition programs to meet the new century demand, and to find solutions to some of the problems of writing in Jordanian schools.

The choice of the topic for this study is motivated by several factors. Firstly, the study responds to the increased demand in the use of computers in education to meet the new educational needs. Secondly, the study may motivate other researchers to reconsider the methods of teaching composition used nowadays and, finally, the computerized procedures might be a source of excitement and motivation to Jordanian students in their composition classes.

Definition of Terms

The following terms are generally used in essay and composition writing. They are operationally defined in this study to facilitate reading the thesis.

Rhetoric: The complex network of relationships within a text .It is the structure of the underlying ideas, and the connections the writer makes between them. Its elements are the rhetorical acts that the sequence performs: not the words and grammar of the sentences but the way each is used, its functional value.

Rhetoric typically focuses on how to express oneself correctly and effectively in relation to the topic of the text, the writer's purpose in writing it, and the audience he had in mind.

Unity: It is one of the most important qualities of good writing. Clarity is very essential in writing and it is achieved through the unifying of the paragraphs. We can guarantee this unity when there is a thesis statement which will be supported by primary and secondary details. Unity is evident when each of its sentences pertains to one central idea.

Coherence: It is another quality of good writing, concerned with the organization of the material in a logical order in which sentences are tied together smoothly, This quality contributes to the logical progression of the essay. When present, coherence between paragraphs helps make the writing integrated, consistent, and intelligible. It is the result of careful planning and organization. Therefore, a writer ought to think about what he wants to say before he begins to write and keep his reader in mind as he writes.

Order: This deals with the sequence of the sentences within a paragraph. In a well-constructed paragraph, sentences must follow a consistent order. Order in the paragraph is like organization in the essay. However, because paragraphs are smaller in scope, it may be simpler to consider order as direction of movement.

Continuity: It is the result, in large measure, of both unity and coherence. These essential elements move the paragraph in one continuous direction (not stop and start and turn around) and make it easy to follow.

Organization: A single entity and a unified whole made of a number of parts or

    sentences so well ordered and fitted together that they cohere or hang

    together in one continuous unit.

Limitations of the Study

    The results of the study are derived from 37 pieces of composition written by

37 tenth grade students in a private school in Amman. Therefore, the generalization

is confined to similar setting.

Chapter Two

Review of Related Literature

Introduction

Research on the relationship between computers and various aspects of the composing process has rapidly increased over the last few years. The focus was specificcally on four elements viewed as being necessary to formulate successful writing instructions linked with the aid of computers. These are the equipment, the software, the pedagogy, and the teacher.

In the early 1980s, researchers began to examine various aspects of computer-assisted composition, showing interest not only in the effects of computer on the development of writing processes, the written production of students, the attitudes of students and teachers toward this mode of instruction, but also in the effects of computer-assisted composition on the interaction of students and teachers. Another major concern among researchers was the identification of variables that affect the cognitive and metacognitive processes associated with written composition.

Research on Computers and Composition

The studies that dealt with computers and writing research and that were conducted in the 1980s show that the focus was on writing as a product. Early studies defined the key features, and developed general ways to evaluate editing and word–processing programs and their applications. Then studies began to focus on the task of teaching (including technological developments). As technology began to develop new tools, the studies began to shift back to evaluating the new features, with important new interests in-group cooperation. In a sense, various researchers were on the one hand

interested in human–computer interaction encouraged the technological advances, they

on the other hand, reacted to them (Herrmann, 1990:125).

Sullivan (1989) as one of the researchers who were interested in human-computer interaction and involved in seven journals, and five conferences and, the one who devoted an extensive space to the study of human factors in computing states in her article "Human-Computer Interaction Perspectives on Word-Processing Issues," that computer word-processing programs and composition research can be classified by the goals researchers seek to fulfill: goals of improving teaching/education, goals of understanding learning (skill acquisition and modeling), goals of improving user interface design, and goals of evaluating and developing new products. These goals, of course, are not respectively restricted. A study may, for instance, use several types of training materials. If the goal of the study is to improve training materials, it is classified as a training study; and if the goal is to make use of several ways to learn, then, it is classified as a learning (or skill acquisition) study. But the study may still address both goals.

The following discussion explores researchers' interest in computers and writing, and at the same time reflects clearly the previously mentioned goals. Researchers started to raise questions focused on the potential effects computer programs would have on the composing processes, the written products, and the attitudes of students essentially the outcomes of writing with computers. They started to investigate whether students, who were in the process of learning and developing writing strategies, could simultaneously learn to manage the technological operations of computers. Furthermore, could schools manage to make computer technology available to students and if so, to which students,

and for what purposes? Due to this, researchers raised the following questions to explore the effect of computers on the writing process and students' writing:

- What aspects of the mechanical strategies of computers are students able to learn? Under what Conditions? Within what time period?

- What advantages and disadvantages do computers offer to students?

- How does writing with computers affect students' composing processes? Does it make revision easier for them? Do students revise, edit, re-read, or plan more, less, or differently when they use computers?

- Do computers qualitatively change students' composing process? If so, in what ways does composing change?

- Do students like writing with computers? Under what conditions? For what reasons?

- When they use computers, do students produce better quality writing? How does this happen? Under what conditions?

In their book *Learning to Write Differently: Beginning Writers and Word Processing*, Cochran-Smith et al (1991) address some of the unanswered questions of researchers, educators, and teachers about the role of computer as a tool for school writing. The book especially focuses on students and teachers who were observed and interviewed over a two-year period. The researchers claim that there were arguments concerned with the general interest in the technology that dominated the last decade. They point out that it was clear:

> ……….. almost to everyone who had tried out the technology, first word processing had the capacity to make easier and speedier the production, revision, and editing of text and could, therefore, change the way total writing time was allocated to these activities, second, many writers were claiming that using word processing made it more likely that they would

treat their developing texts as impermanent and would, therefore, write to discover and shape what they had to say...... The final and generally unstated step in this line of reasoning was both simple and obvious-word processing was a tool that would help writers write better (p.27).

Researchers like Strickland (1987) in his article "Computer, Invention, and the Power to Change Student Writing" employed a 2x2 factorial design-mode of instruction (computer-assisted and traditional classroom) to investigate the quantity and quality of ideas produced by computers. His subject for the study were students enrolled in English 101: First-year composition for the Fall 1983 semester at a private, urban, two-year college in Buffalo, New York. Strickland concluded that the computer-assisted instruction must avail itself of its potential to offer idea-generating strategies that are impossible to simulate traditional pen and paper tools.

Moreover, much interest arises in textbooks that offer new models for teaching writing with the aid of computer. Perrin (1988) examines ten handbooks published in 1985 and 1986 by nine major publishers to identify the specific ways in which the computer has played a role in writing. Perrin notes that while authors and publishers recognize the need for instruction on word-processing and writing, they do not incorporate discussions that are complete.

Selfe and Wahlstrom (1985) in their field-study which is conducted to provide a look of the language and the culture of computers as they appeared when first entered the computer revolution state that "computers are powerful tools that help us do our work more quickly and with less drudgery that we could do it alone" (p. 65).

In their article "Empirical Research in Word-Processing: Expectations vs. Experience" in order to determine the overall efficacy of the computer in writing instruction, Holdstein and Redman (1985) conducted a research in Illinois Institute of Technology. In their investigation, they used two classes of English 101: one with about 25 students, the other with 12. At the end of the experiment they conclude:

> We believe that the use of computers should encourage in students the idea that writing is play. Getting students started on their first drafts, no matter how crude, will help them deal with the composition process in a less anxiety-producing situation. No matter what word-processing program the teacher is using, the key is to get the first draft flowing, to get students started so they do not worry that every mark they make on a paper is irrevocable and final (p. 46).

Since it has been hypothesized that word-processing encourages revising, researchers, such as Hult (1988) focuses her discussion on revision strategies. Hult uses her students' text excerpts, in draft and revised form, to illustrate the concerns she has outlined. Hult reports "although word-processors cannot teach writing, I am convinced that word-processing can be an important tool for students. In order to use word-processing effectively, however, students must understand the principles of effective revision and apply those to writing with a word-processor" (p.28).

Other researchers, for example, Duin and Gorak (1992) were interested in the collaborative process that works to integrate computers with the teaching of writing. They report from their experience as participants in creating composition textbooks that the collaborative process is complex, but important for developing texts for computers and composition.

At the same time, however, some researchers also raised questions about students' uses of computers within, and in relation to, school and classroom settings. In his article "The Computer Writing Room: Authority and Control," Stine (1989), cited in Moran (1990), states that "the presence of computer in our classes will exert pressure on us to make our writing classes more student-centered" (p. 61).

Through Moran's (1990) experience with one writing classroom equipped with stand-alone Digital Dec-Mate workstations running Microsoft Word for ten weeks, he concluded that "we need to be careful as we bring computers in our classrooms and to focus on the deep aim of our teaching: to help students realize the power they have within them as writers in a classroom that is student-centered" (p. 68).

Moran (1998) describes the classroom setting through his experience in teaching writing with the aid of computer for eight years. He writes: "In this setting, everyone is working, apparently; I, the teacher, am released. I am not at the center of the class, fully responsible for its progress. I am, rather, in and of the class, a roving editor, helper, checking in with the writer, or teams of writers, as they work" (p. 45).

Perspectives on Computer-Aided Composition

Instructors of English believe that computer composition programs have significant effect on student writing according to Sommers (1990). Sommers drew such a conclusion when she reviewed Hawisher's & Selfe's book entitled *Critical Perspectives on Computers and Composition Instruction*. The book focuses on the two perspectives of computer–aided composition: the psychological perspective and the instructional perspective. The psychological perspective focuses on how computers can

support cognitive processes; to develop automated aids for tasks people frequently do, and how well such aids work. The instructional perspective, on the other hand, focuses on teaching with automated aids, that is, on installing hardware and software to support classroom activities and to speed learning (pp. 89-93).

In "Studies in Word Processing," Hawisher (1986) provides an analysis of research studies of computers and writing based on the two perspectives by examining selected quantitative and qualitative studies. Hawisher finds a broad range of early results, with early positive effective responses. Meanwhile, she points to emerging trends and offers valuable recommendations for future research.

Computers, Writing Classroom, and Teachers' Goals

Rodrigues, Dawn & Raymond (1989) believe that teachers who integrate computers into their writing classes are really teaching more than just what they would teach if they do not use computers. "They are teaching a new way of thinking about and working with writing. A way of thinking of text as fluid and adjustable, a way of thinking about communication as dynamic and purposeful" (p. 14). Rodrigues and Raymond stipulate that teachers should learn how to create exciting computer environments in their classes, environments that are beginning to have a powerful impact on their teaching. Rodrigues and Raymond drew such conclusions in their paper "How Word Processing is Changing our Teaching: New Technologies, New Approaches, New challenges." The paper aims to explore some of the diverse ways teachers have responded with vision to the challenges of technology. They state, " The point we want to make is that, regardless of their contexts, as long as students have access to a word- processing program, teachers who re-envision their teaching as a

result of the available technology can create dynamic classroom environment for writing" (p.13).

Researchers in the field of computers and writing classroom report that most students come into writing classrooms with plenty of fears already: fear of exposure, fear of disapproval, fear of failure. From their experience in designing Compuwrite programs at Central Michigan University, Dinan et al (1986) report "There is an obvious need to integrate computers into composition classroom in a non-threatening way"(p. 33). They also provide some guidelines for integrating computers into the writing classroom.

1.   Keep the students and their writing the main focus of the course. Although computer literacy is valuable to students, they do not need to know very much a bout computers to use word processing in developing their writing skills. Instructors should stick to what is essential when introducing the features of word–processing programs.

2.   Go slowly and deal only with the technology that is essential at the moment. Showing students several basic functions of a word processing program during one session is like teaching them ten punctuation rules all at once: it is ineffective teaching because it gives them too much to handle at one time. The major concern should be to have the students write with as little interference from the machine as possible (pp. 33-34).

The presence of computers in the composition classroom should not be an additional burden if we always keep in mind their only purpose: to assist in our students' writing development. Additionally, computers can be used to motivate writing and communication. Warschauer (1996) concluded the following in a research study in which ESL & EFL students were involved. His study researched the effects on students' motivation of using computers for writing and communication in the language classroom. A 30-question survey investigated the attitude toward using computers of 167 ESL and EFL students in 12-university academic writing courses in Hong Kong, Taiwan, and the United States.

> A wide range of language students–whether they are male or female, skilled or unskilled at typing and using computers, and experienced or inexperienced in using computers–have a positive attitude toward using computers for writing and communication in the language classroom. This holds true in both second and foreign language classes...... Factors that influence students' positive attitude toward computers include the benefits of computer-mediated communication, the feeling of personal empowerment, and the enhancement of learning opportunities...... Another possible factor is the achievement (and sense of achievement) which learning to use computers can help bring about. Teachers can enhance student motivation by helping students gain knowledge and skill about using computers (pp.10-11).

Computers and the Composing Process

Most of the research on the effect of computers on students' composing processes have focused on the numbers and kinds of revisions students make when using word processing, the kinds of students who use computers most effectively, and the instructional interventions that encourage revision with computers. But, there are mixed results in the research that explore the effects of computers on numbers of

revision, some studies indicate significant increase in revisions made with computers, while others indicate that there is little or no difference in number of revisions. Duin (1987) reports the previously mentioned observation in her article "Computer Exercises to Encourage Rethinking and Revision" through her experience in the university of Minnesota's composition program, where they offer eight advanced composition courses suited to various disciplines.

Success with computers in writing depends on students' willingness to exchange traditional composing tools for computers and, on their abilities to adapt their normal composing strategies to the computer program. Pufahl (1986) in his article "Alone on the Word Processing: Writing and Rewriting," concludes that

> The computer itself did not induce students to make changes in their work. Rather, students' prior knowledge of how to use the computer, and their knowledge of what they needed to do as writers, lead them to revise. Effectiveness with computers depends on interrelationships among several factors writing tasks, features of computer programs, and especially, individual styles and strategies of students themselves (p.27).

Researchers, like Burns (1983) who is directing programs in research and development in applied artificial intelligence, have explored the use of computer technology itself as instructional interference during students' use of computers. Such studies begin with the assumption that computers free students to think more about their writing by relieving much of the physical burden of writing. Moreover, Woodruff's research (1982), for example, on technological interference, establishes several arguments on this assumption: "(a) as they write, experienced students engage in an inner, self–monitoring dialogue (b) a way to help students improve their writing is to provide them with models of experienced students' internal revision processes. (c) computers provide writers with a model of revision and, hence, facilitate their writing.

(d) computer facilitation allows students to approach their task with higher level strategies than they would be able to use independently" (p.140).

Moreover, in their book *Transitions: Teaching Writing in Computer Supported and Traditional Classrooms*, (1998) Palmquist et al used observational techniques, primarily interviews, teacher self–reports, classroom observation, and analysis of class materials. They describe the process of writing through the use of computer as an objective one. Students are more stimulated and motivated to write. They state that

> We have seen students whose attention is often drawn to a surface weakness revise beyond simple editing for the error, particularly with programs that suggest patterns of vagueness or stylistic weakness. Some students attend only to the specific point the computer notes, but more students find themselves recasting entire paragraphs because they can, with computer help, see their texts objectively. Even if the computer suggestion is inappropriate, students look at the word, sentence, or paragraph in a way that they did not before (p.11).

Students' Written Products and Attitudes

With regard to the effects of computers on students' written products, literature in this field indicates that using computers in classroom or computer laboratory situations affects both the quality and quantity of students' written products. Two related measures of quantity have been assessed such as: the length of the individual texts or the overall quantity of writing produced. The purpose of McAllister (1985) study in her article "The Effects of Word Processing on the Quality of writing: Fact or Illusion" was to test whether the instrument of composition (computer, typewriter, hand) influenced teachers' perception of quality. The subjects for McAllister's

experiment were thirty composition teachers at Southeastern Louisiana University. Each subject received a packet containing instructions, the same student's essay, and rating scale. McAllister reports that definite conclusions about the effects of computers on the quality of writing are likely not possible. Quality of writing is a complex and slippery notion. Despite this, there is some evidence across groups of writers that using computers can help produce more attractive texts with fewer errors (pp. 36-40). In conclusion, writing quality is tied up with the nature of instruction and with writing contexts.

Other researchers focus on the effects of computers on students' attitudes in informal interviews as well as written surveys. Students and/or their teachers report that they like using computers and generally they have positive attitudes toward writing with computers. Joram et al (1990), for example, conducted a research to investigate students' attitudes toward computer word processing programs. The participants in their study were 14 male and 15 female grade eight students who were selected randomly from 3 classes in a middle-class junior high school. Students were interviewed and tested individually for approximately 45 minutes. The results of the tests and interviews reveal several findings most importantly, students generally prefer computers for revision in the composing process (pp. 55-72).

Interpretation of Computer Technology

Like the impact of other kinds of computer technology, an important part of the impact of computer technology in classrooms is the special teachers' interpretations of it. In his report for the Alaska State Department of Education, Parson (1985), cited in Cochran–Smith et al, (1991), states that "a group of teachers who had common training

in both " process writing" and word processing emphasized the diverse ways they used word processing in their classrooms to meet the needs of individual students and in keeping with their own curricular emphasis" (p. 60).

Resistance of Computer-Assisted Composition

In contrast, we read, for example, in Nydhal's (1991) article "Ambiguity and Confusion in Word-Processing Research" that skepticism about word processing in the writing class is not new .He provides with a brief history of research in word-processing and writing and compares between the situation today and what the future ought to hold. Nydhal reports that "the new empirical research has failed to come up with positive evidence of the efficacy of word processing as writing aid"(p.25). He refers to some research conducted by Daiute (1986), Simpson (1988), and Hawisher (1986). For example, Holdstein (1987) cited in Nydhal, claims that "there is little or no conclusive evidence that the computer can make students write more effectively" (p.25).

Moreover, Gerrard (1991) raises the following points to resist computer–assisted composition in her article "Computer and Compositionists: A View from the Floating Bottom" after being involved in a conference on college composition and communication.

> Computer Assisted Instruction still threatens many humanists ....Some humanists see the computer as their opponent a mechanizing force that will make life in the remainder of the 20th century even more sterile and isolated...Computer-assisted instruction is a nuisance. The equipment is not just frivolous, but expensive ....Computer enthusiasts have not proved that students write better as a result of the technology (pp. 5-15).

Summary of Related Literature

From the previous synthetic perspective, we notice that using computers for writing does affect the composing processes of students. However, the effect is a complex one that is mediated by many other interrelated factors about which we need to know more. Moreover, it indicates clearly that writing quality is tied up with the nature of instruction and with writing contexts. As is the case with the composing processes, there is much that we still do not know about the effects of computers on students written product, students' attitudes, teachers' goals, classroom organization, and classroom interaction.

Most of the studies about the use of computers for educational purposes in the Arab world as well as Jordan are very few. As educators, we need similar but more specific studies, as the ones referred to in this chapter to meet the century's demands, and to face the problems that we may encounter in teaching English language programs and other educational programs. The current study on the effect of using computers in the teaching of L2 composition seeks to be very specialized in one of the English language major skills. Finally, we still need to know more about the effects of computers on students' writing performance.

trained to write through computers, and that of those who are trained to write in the traditional way.

3. There will be no statistically significant differences between the writing performance on the rhetorical level (global aspects), of the students who are trained to write through computers, and that of those who are trained to write in the traditional way.

Method and Procedures

The experiment took a full semester (the second semester of the academic year 1999-2000). A pre-test was employed to investigate the students' writing performance for both groups at the beginning of the semester. The same test was used as a post-test at the end of the semester. The test was developed by the researcher and was revised and amended four times before it was approved by a jury of referees formed of eight instructors at the University of Jordan-Faculty of Educational Sciences (See Appendix E p.87). Moreover, the test Reliability Coefficient was computed. Cronbach Alpha indicated that it was (.98) for the control group, while it was (.97) for the experimental group. The amendments dealt with the following issues: questions of the test, test items (quality and quantity), the course objectives, and the course content.

Throughout the semester, the researcher taught the experimental group English language composition using the computerized approach adapted from *Holt Handbook, Harbrace College Handbook*, while he used the traditional (conventional) approach to teach the control group. In order to be accurate and sure of the procedures and techniques used in the traditional approach that the majority of teachers of English in Jordanian schools employ in teaching composition, the researcher developed a survey

and asked a sample group of tenth grade teachers to describe and explain the methods, strategies, procedures, and processes they used in teaching tenth graders English language composition (see Appendix C p.82). Furthermore, the *Ministry of Education English Language Curriculum and its General Guidelines for the Basic Education Stage* provides teachers with procedures and techniques to be employed in teaching composition The course content was the school English Language textbook, and its objectives were stated in the *Ministry of Education English Language Curriculum and its General Guidelines for the Basic Education Stage*. As mentioned above, the students were tested again at the end of the semester by means of a post-test which was originally used as a pre-test.

What follows is a brief description of the two ways the researcher followed in teaching the two classes which represented the sample of the study.

The Traditional Approach

The traditional approach can be summed up as follows:

1. Techniques in using pictures

Teachers may use any simple picture to generate interesting activities in their classes by using one of the following sub-techniques: description, paragraph assembly, paragraph completion, controlled composition, picture sets, and description, comparison, and contrast.

2. Using diagrams, tables, graphs, and charts

Effective communicative tasks can be derived from diagrams, tables, graphs, and charts. Students deal with given information presented visually, and then they put it into writing.

3. Techniques in using readings

Jordanian teachers adapted a teaching method which concentrates on techniques in using reading such as: examining cohesive links, summarizing, and completing.

4. Techniques in using all language skills

Many Jordanian teachers use techniques that focus on using all language skills, whatever the writing assignment is based on–reading, picture, map, text, etc, like brainstorming, interviews, dictation, and story telling.

5. Techniques in teaching practical writing

The fifth method was embodied in teachers' use of forms, letters, and letters and forms.

6. Techniques in using controlled writing

Finally, Jordanian teachers applied the use of certain techniques of writing such as controlled composition, question and answer, guided composition, and parallel writing.

The Computer-Oriented Approach

This section shows computer-based strategies used in the writing process: inventing, drafting, revising and editing. The researcher used two widely available word-processing programs, both windows- based *(Microsoft word)* and *Daedalus Integrated Writing Environment (DIWE)* Version 5.3x. Both software were licensed to the researcher and the school.

There are three reasons behind using the two-computer software. First, the focus should be paid to the process of writing, which can be illustrated and explained using *Microsoft Word* and the procedure adapted from *Holt Handbook, Harbrace College Handbook*. Second, *Daedalus Integrated Writing Environment* provides students with

exciting and useful ideas. When integrated into *Microsoft Word*, both software become more powerful tools to teach composition. Third, the study attempts to expose Jordanian students to a variety of well established procedures to learn writing through computers in addition to expose them to well designed composition software.

The computer-oriented approach software and hardware used in the experiment are illustrated in appendix D p. 84.

Stages of the Writing Process

This section suggests computer-based strategies for the steps in the writing process: inventing, drafting, revising, editing, and for instructors, evaluating. The following prewriting and informal strategies are pre-program activities that teachers should train their students to cope up with as pre-requisite requirements for learning writing with the aid of computers. These pre-program activities provide teachers with methods that show their students how to use *Block*, *Cut*, *Copy*, and *Outline* to shift, rearrange, and decrease pieces of the text; encourage prewriting and individualized responses to texts through the use of templates; show students how to create individualized techniques for checking style; and develop activities for collaboration within the computer-based classroom.

Part I: Prewriting and Informal Strategies

Freewriting

Freewriting helps students to get words down on a page without worrying about correctness, style, or organization. The idea behind freewriting is simply to write for ten minutes (less or more). The student should not stop for any reason. If the student cannot think of a word or spelling, he can use any alternative or else write, "I can't think of it."

The student should write down something. The only requirement is that he never stops. The purpose of freewriting is writing to discover what a student knows about a topic, or creating a student's draft.

Freewriting with Computers

One useful variation of this technique in the computer classroom is to turn the contrast on the monitor down, or to turn the monitor off, so that the student cannot see the words on the screen. Although the sensation of typing without looking feels strange initially, not seeing the words on the page means that no self-editing or erasing can be a potentially good idea.

After ten minutes, the teacher asks students to adjust the monitor to reveal the words and asks them to consider what they have written. As they reread their thoughts, they might also discover typographical errors, misspellings, perhaps fragments-and with those errors the freedom of knowing that this writing will not be graded. After reading their ideas, they then return to the beginning of the piece and, with mouse, students first highlight and then place in bold, underlining, those ideas, using a different identifying mark or font for each. Given these core ideas, the student is now ready for another session of freewriting on one of those topics (see below) or to extend the ideas further in another form.

Looping

As a more structured variation of freewriting, looping is the process of discovering the piece's most central, interesting, or emphatic point. Once students decide what the focus of the piece turned out to be, they can do one of the following:

1. Identify the key sentence in the piece, the one that seems to them most interesting, promising, or summative of the whole, and paste the sentence at the top of a new document.

2. Summarize the point in one sentence and write that sentence at the top or bottom of the screen.

3. After this process, the student can open a new screen, copy and paste the sentence to the new document, and continue with another timed freewriting or loop, perhaps a longer one this time. Increasing the focus of the piece by successive "loops" of freewriting helps to narrow the topic and enables the student to find a good starting point for the paragraph.

Cubing

Students can gain different perspectives on a subject with a strategy known as Cubing. Although it may not yield deep insights, cubing can be an effective technique for looking at a subject from only one perspective.

The basic principle is simple: the writer imagines a cube, each side of which has a different active verb written on it: describe, compare, analyze, associate, apply, or argue. Imagining the cube as a die or block, the writer chooses one "side" at random as if throwing a pair of dice. The student then considers the subject in relation to the directions on that side of the cube, quickly writing down all the possibilities. The key to successful cubing is to move quickly from one perspective to the next.

Many subjects lend themselves to cubing, among them topics for description and analysis. The following exercise applies this technique to the kind of character analysis. The students are asked to imagine a person or a character in a story or a movie.

"S" stands for the character. Besides this question format, this cubing exercise also lends itself well to being placed in the interactive macro described later in the section.

1. Describe S (the character). What does he look like? What are his habits and characteristics? What gestures does he make? How does he speak? Does he have habitual speech patterns? What images or themes are associated with him? What adjectives would you use to describe him? From whose perspective do we see him?

2. Compare S. How does S compare to other characters you have read about? How does he compare to other characters in the same story or movie? Do you know anyone like him in real life?

3. Analyze S. What makes him behave as he does? Why does he respond in certain ways to a particular situation? What are his strengths and weaknesses as a person?

4. Associate S. What is his social status? What is he like in the context of his surroundings? In what ways is he representative of a group or class? What kind of person would he be in your own life? In what ways does he act according to the expectations you would have for someone of his type?

5. Apply S. How can S be used within the context of your own observations? What has reading about him taught you? What ideas does he represent? Knowing what you know about him, can you predict his responses at the end of the story? Construct a situation and see if you can predict his response. Compare your responses with those of others in your group.

6. Argue for or against S. Do you condemn his actions, or do you believe that his actions were justified? Is he a believable character? Why or why not?

Brainstorming

As one of the most common prewriting techniques Brainstorming involves making lists or clusters of ideas related to the topic at hand. The principal rule of brainstorming is that all ideas must be written down since generating and judging ideas need to be two separate processes. The following example illustrates brainstorming.

Individual Exercise: Brainstorming by Listing

Although its ability to represent clusters is limited, the computer's word-processing program can help to gather the student's thoughts into a more manageable form after the brainstorming concludes. Here as elsewhere in this section, the instructions are written as though you are giving them to students.

1. Students should open a new computer screen and write down as many ideas as they can about the topic. They should press *Enter* (*Hard Return*) after each thought. The document will look like a series of disconnected phrases. This exercise could also be accomplished as a group exercise with a number of students participating.

2. When students have finished listing, they should scroll through the document and determine which ideas appear most often. What patterns of ideas do they see? How would they group them?

Part II: Formal Invention Strategies

Brainstorming, cubing, freewriting are fairly informal methods of invention, but other, more formal methods work well in the computer-based classroom, too. Students who generate interesting ideas with more simple strategies can use some of the invention method of solving problems by evaluating past experience and moving by trial and error to a solution. These methods deepen students' analysis of their topics.

The following discussion provides an example of computer template for invention strategies. It requires no special expertise to use. This kind of template is interactive in that it urges students to answer questions one at a time, a strategy that enhances their engagement with the questions.

Aristotle's Topoi

Aristotle identified twenty-eight "places" (topoi) from which his students could both invent a strategy for argument and find truth. Of these, five came to be known as the common topics, and they form the basis of the rhetorical modes frequently used in composition:

The following is a list of questions based on these categories. A good way to use these questions is to type them into a document that then becomes a template for student use.

- Since not all categories will be used for a single paper, the instructor should save each category under a separate filename.

- If the instructor wants to create a file in which all the categories appear, he should use the *Copy* and *Paste* feature to put all of them into one document.

- The instructor should leave a space after each question for students' answers.

- The adaptation below exchanges "X" for a blank space.

Definition

1. How does the dictionary define X?

2. What do I mean by X?

3. What group of things does X seem to belong to? How is X different from other things in this group?

4. Did X mean something in the past that it does not mean now? If so, what? What does this former meaning tell us about how the idea grew and developed?

5. Does X mean something now that it did not mean years ago? If so, what?

6. What other words mean approximately the same as X?

7. What are some concrete examples of X?

8. When is the meaning of X misunderstood?

Comparison

1. What is X similar to? In what ways?

2. What is X different from? In what ways?

3. X is most unlike what? (What is it opposite to?) In what ways?

4. X is most like what? In what ways?

Relationship

1. What causes X?

2. What is the purpose of X?

3. Why does X happen?

4. What comes before X?

5. What comes after X?

Circumstance

1. Is X possible or impossible?

2. What qualities, conditions, or circumstances make X possible or impossible?

3. When did X happen previously?

4. Who has done or experienced X?

5. Who can do X?

6. If X starts, what makes it end?

7. What would it take for X to happen now?

8. What would prevent X from happening?

Testimony

1. What have I heard people say about X?

2. Do I know any facts or statistics about X? If so, what?

3. Have I talked with anyone about X?

4. Are there any laws about X?

5. Do I remember anything I have read about X in books or magazines? Anything I have seen in a movie or on television?

The researcher opted for the concept of "war" as one example to practice the template of Aristotle's Topoi.

Part III: Drafting and Revising

Creating and Responding to First Drafts

When students create the first draft, they write to discover what they want to say about their subject, to clarify their own knowledge about it, to find out what they think about it.

Suggestions for Drafting on the Computer

Although many instructors prefer to have students come to class with their drafts already completed, some may wish to have students explore some of the following techniques for composing on the computer. One of the simplest and most obvious techniques is to show students how to use *Split Screen, Cut, Copy, Paste*, and other features to manipulate text.

Students are asked to open two (or more) screens. Instead of keeping paper copies of prewriting materials on the desk, opening two or more documents containing this material allows the student to cut and paste easily between them. In a Windows environment, selecting the *Arrange All* features after opening several windows causes the screen to split horizontally; resizing the windows allows them to be placed side by side. In addition, the *Split* command can divide a document into two different sections.

Using split screens or columns also works well for modes such as comparison and contrast or argumentation. Labeling one screen or one column "for" and the other "against," for example, helps students organize their arguments by cutting and pasting points between the screens. For example, the researcher employed three screens to practice drafting on the computer. The first screen was allocated for the role of "women" in the society, whereas, the second screen was allocated for the role of "men" in the society. The first screen was named WOMEN.DOC and the second was named MEN.DOC. The students were asked to open the two screens and split them then carefully read both for five minutes. The students also were asked to open a third blank screen and to write a topic sentence regarding the "men", "women" documents they have read. Using *Cut* and *Paste* commands, students were able to write their drafts in the third screen and save it under a different document name.

Part IV: Revising for Content: Peer Editing Strategies

Once the student has gone beyond this "discovery draft" stage, the paper is ready to face its first audience: the student and his or her writing group. Depending on the length of time the group has worked together, their experience in discussing papers, and the level of commentary desired, several strategies could help to provide feedback.

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Students, too, need to know that the group members can suggest changes but that the final say belongs to the student writer.

Although the steps are separated here, these suggestions assume that writing is a recursive process, one in which students reread, revise, and edit at various levels during each pass through their draft. Studies have shown that although experienced students can look at multiple levels at once, less experienced students need to have these levels defined and to practice working on global issues such as content and structure before working on issues of style and mechanics.

<u>Peer Editing Example 1: Change Partners</u>

One of the simplest techniques, suitable also at the draft stage of composition, is to have students in a writing group respond to each other's papers by (1) physically moving to another student's computer, reading the screen, and responding to the information; (2) exchanging disks with other students; or (3) gathering around a single screen to discuss the composition with the student. These activities can take several forms.

If students are writing about the same topic, for example, the instructor asks the student to copy and paste the paper's introduction on a separate file. This file should have a name distinct from that of the original paper. Leaving this introduction on the screen, student 1 moves to the left (or right) in the writing group and sits at another student terminal.

Using student 2 introduction, student 1 writes a sample topic sentence or part of the next body paragraph for student 2. The point is not that student 2 should use student's 1 suggestion but that this response shows where student 1 believes the essay is

going. If student's 1 response suggests a different direction from the one student 2 intended, that difference tells student 2 that the introduction may need work.

If the paper is significantly finished already and this approach seems too annoying, student 1 can read more of the paper and post a comment to student 2 at the bottom of the paper or in a separate file.

Peer Editing Example 2:Writing Comments Using Different Fonts

The teacher asks the student to open another screen, to title it "Comments," and to pose two to five questions that the respondents should address. Specific, open-ended questions work well. For example, instead of writing "Is my spelling all right? Students might write, "my topic sentence doesn't fit. What do you think?"

As students move between terminals (or exchange disks), each adds his or her comments to the comment file or paper with several students writing in a single document. The most distinctive way to differentiate comments is to have each student use a different font or a different characteristic underlining, italics, or boldface, for example.

Creating Structures for Response

Students need to learn how to respond to papers effectively. Timidity or fear of offending the student writer of a paper may force them into ambiguous statements like "Nice work." Less frequently, a few unfriendly students may respond inappropriately with sarcasm, or attacks. Perhaps one of the most common responses is to try to imitate what some students believe instructors do: hunt for errors. All of these approaches, of

course, miss the point: to respond first to the paper as a whole-its content, structure, organization before addressing sentence structure, punctuation, and spelling.

Example: The following questions build a good structure for response

1. How did you feel about this paper when you were finished with it? What pleased you about it? What parts did you want to read again?

2. Which parts of the paper are especially strong or effective? Why?

3. What parts gave you trouble or need more work? Why?

4. If you could do this paper again, what would you do differently? Why?

5. What do you hope that your readers gain from reading this paper? What kind of reaction do you hope that they will have? What did you learn from working on it?

Example: Questions for Peer Editor's Response to a Paper

1. Read the first paragraph and then stop. What do you expect the rest of the essay to be about? What is the student's thesis or argument?

2. Read the rest of the paper. What parts provided you with new information? What did the student writer tell you that you did not know before?

3. What parts were especially strong or interesting? Why?

4. What parts repeated information or confused you? Why?

5. Where did you want more information? What questions do you have for the student?

As students learn to deal with such strategies, response templates can help by suggesting questions and approaches. One way to present these questions is to save them as a file in which the respondent sees all the questions appear at once and answers them.

Another way to present the information is to create a form that asks questions one at a time and then pauses for a response. Such a form can be created using a macro, a mini-program that automatically types in words or performs actions with just a few keystrokes. This method adds life to invention strategies, too.

Creating a Structured Response Using the Macro Feature in Microsoft Word

Since Word 6 and 7 contain no *PAUSE* command, Microsoft Technical Support suggests the following solution. It involves creating a series of *Macros*. What happens in the *Macro* is that the *Enter* key gets first reassigned as a key to run the second *Macro* and then "turned off" at the beginning of the second *Macro*, and so on throughout the series of *Macros*.

First, create a *Macro*:

1. From the *Tools* menu, scroll down to *Macro*. Write a name in the space provided and click *Record*. In the following example, the first *Macro* is called "prac."

2. Type in the sentence or phrase (example: "Read the first paragraph and then stop. What information do you expect to see in the rest of the paper?") you would like to have appeared in the *Macro*. When you have finished typing, click the *Stop Recording*" button with the mouse.

3. Open the *Macro* in an edit window by clicking on *Tools*, then *Macro*, then the filename (here, "prac"), and *Edit*. The first *Macro* will look like this: Change the *Macro* to read as follows:

   This tells the *Macro* called "prac" to run the second *Macro*, here called "prac2."

4. Create "prac2" using the macro command (as above) and some phrase such as this: "Read the rest of the paper. What parts provided you with new information? What did the student tell you that you did not know before?" Now open an edit window

for "prac2". It will look like this: Again, you will need to modify this as follows: This tells *Word* to stop reassigning your *Enter* key to prac2, to ask the question, to wait for the student's response, and then to reassign the key to prac3.

Part V: Revising for Form: Completeness, Coherence, and Unity

Finding Balance among Elements: Checking for Completeness

Students sometimes try to quantify the task by asking questions that instructors find irrelevant to the paper's purpose: "How many sentences should I have in this paper?" "How long should my paragraphs be?" What they may really ask is how to tell whether they have sufficient support for their points, or completeness. Although the computer cannot help students establish content, it can show them whether the paper's elements balance. One way to check for this balance is to look at the document without reading it. One of the most effective techniques for checking a paper's balance is also the simplest: Examine the document using the *Page Layout View*. In Microsoft Word it appears under the *File* menu. The instructor asks students to examine the pages two at a time. This reduces the image to between 25-34 percent of the actual page. Once students have this view on their screens, the teacher should ask them these questions:

- Which section looks as though the paragraph short?
- Does any paragraph extend for more than a page?
- Which thick block of a paragraph might be broken up?
- Does any paragraph begin at the bottom of a page?
- Does any paragraph end at the top of a page?

Checking for Coherence

- Students can test the coherence of their papers by using the *Block* and *Move* functions of the program to rearrange the paragraphs within the paper. After they have saved the file to another name. Reading both will show which order proves more effective.

- Students can scramble the order of their paragraphs and then invite another member of their writing group to reconstruct the paper. A variation on this procedure calls for students to scramble the sentences within a single paragraph. If the student reconstructing the paragraph puts elements into a different order, this should signal the student that more transitions and a tighter structure are necessary.

- Instructors should ask their students to highlight and then mark transitions using boldface type, capital letters, or a different size font. How effectively are these interspersed throughout the paper? Throughout the paragraph?

Checking for Unity within Paragraphs

Revision and repositioning of sentences (again through *Cut* and *Paste*) seem easier and more desirable.

1. The instructor asks students to use *Replace* to separate all the sentences. First, select *Replace* from (*Edit, Replace*) and type in a period and one space. This method selects all of those for replacement.

2. Replace the period and space with two *Hard Returns*; press the *Enter* key to write in a *Hard Return*.

3. Once the replace process is complete, the paper will look very different. The broad spaces between sentences allow much closer evaluation of the sentences themselves for style and form. Students look at each sentence individually:

- Are the sentences varied in length? In sentence structure?

- Look closely at each sentence: what words might be cut to increase clarity and concision?

Comparing Drafts with Redline and Revisions

The Revisions feature (under the *Tools* menu) in Microsoft word allows students to track the course removing errors from the paper. The suggested revisions appear in different colors or with lines through them. The student then reads through the suggestions, answering questions, and accepting suggestions that improve the document while rejecting unnecessary comments.

Using the Outline Feature

The *Outline* feature in Microsoft Word helps in the composing process. The instructor asks the students to use the latter to inspect topic sentences by pressing the *Show First Line Only* button in *Outline View*. (If the sentences are long, switch back to normal view after identifying the topic sentences.) Then he asks the student to check each sentence for the following key characteristics:

- Does the topic sentence introduce and define the subject of the paragraph?

- Does it relate to the thesis in some way, perhaps by repeating a key term?

- Does it provide a sufficient transition from the previous paragraph?

- Does it include words that indicate the position of this paragraph in relation to the rest of the paper?

Format and Document Style Checklist

When the final draft is ready, the instructor asks his students to consider the following points:

- Double-space the document, include a header or footer including name and page number in Microsoft Word, look under *View*), and check the margins (on all sides is standard). Students can use *Search* and *Replace* to convert from one style to the other.

- Run the *Spelling Checker* one last time and then proofread for spelling and usage errors that it cannot catch. The final spelling check takes less time if students have been checking their spelling throughout the process.

Evaluation Instrument

A Checklist of Composition Evaluation which included two levels: the linguistic aspects of writing and the rhetorical aspects of writing was employed for correcting both the pre-test and the post-test. While the linguistic aspect was divided into word choice, sentence structure, and conventions, the rhetorical aspect was also divided into ideas and content, organization, and coherence and continuity. The two main levels were formed of twenty-three items (evaluation traits) establishing criteria for marking and evaluating the students' performance. Each item is defined in terms of what a good composition should present (See Appendix A p.75).

The Checklist was also revised, amended and approved by a jury of judges formed of three instructors at the University of Jordan. Some of the Checklist items were added while other items were omitted.

Level 1: The linguistic (Local) aspects of writing consist of three sub-levels: word choice, sentence structure, and convention. Where:

Sub-level 1 deals with word choice, shows the students' ability to write a clear message and their ability to opt for lively verbs (action) and specific, concentrate nouns. Moreover, word choice indicates if students paint clear images in their writing and avoid both vague words and redundancy.

Sub-level 2 handles sentence structure and focuses on whether each sentence written is easy to read and stands alone. Also, whether students are using correct grammar and vary between sentences length and structure.

Sub-level 3 covers writing conventions which include correct punctuation and spelling, good margins, and overall neat appearance.

Level 2: Rhetorical aspects of writing consist of three grading scales also: ideas and content, organization, and coherence and continuity.

Sub-level 1 focuses on ideas and content. It investigates whether ideas and content are interesting, clear, detailed, or purposeful.

Sub-level 2 discusses organization and stresses the notions of effective title, reader orientation, clarity of main ideas, and clever conclusion.

Sub-level 3 seeks coherence and continuity elements that include the use of strong transitions, completeness of the written text, and whether ideas are relevant, necessary or not.

The Grading Procedure

Each item in the checklist is graded with 1 up to 5: 1 is for the worst performance, 5 for the best. 4 is a good grade; 2 and 3 are considered weak.

The distribution of questions over the Checklist is as follows: (Appendix A p.75)

Local (linguistic) aspects (questions 1-11)

1. Word choice (questions 1-5)

2. Sentence structure (questions 6-8)

3. Conventions (questions 9-11)

Global (rhetorical) aspects (questions 12-22)

1. Ideas and content (questions 12-15)

2. Organization (questions 16-19)

3.Coherence and continuity (questions 20-22)

Data Collection

The two groups of students were asked to write a well-organized composition about two familiar topics (See Appendix B p.80). At the beginning of the semester, the two groups were asked to write using pen and paper. The students of the experimental group at the end of the semester were asked to write with the aid of the computers, whereas the students of the control group were asked to use pen and paper.

The researcher and two English language teachers in the school carried out the evaluation of the students' written texts. They considered the evaluation traits in the checklist: ideas and content, organization, word choice, sentence structure, conventions, and coherence and continuity. All the written texts were read all the way through, reread three times when necessary.

Research Design and Statistical Analysis

The independent variable of this study is the method of teaching composition which has two levels: the traditional approach and the computer-oriented approach.

The dependent variable is writing performance, which has two levels: the linguistic (local) aspects and the rhetorical (global) aspects.

Two statistical analyses were employed in this study: Descriptive Statistics and Analysis of Covariance (ANCOVA).

1. Descriptive Statistics was obtained to describe the properties of all variables involved and to calculate the means and the standard deviations of students' performance in the writing tests.

2. An Analysis of Covariance (ANCOVA) was used to test if there are statistically significant differences in the writing performance of the students who are trained to write through computers, and that of those who are trained to write in the traditional way.

Chapter Four
Findings of the Study

The purpose of the present study was to investigate the effect of using computers in the teaching of L2 composition on the writing performance of tenth grade students in Amman private schools. Therefore, the results presented in this chapter, which are based on the evaluation of the students' written texts with respect to the linguistic and rhetorical aspects of writing indicated in Appendix A, are the answers to the three questions of the study:

1. Are there statistically significant differences at (α = 0.05) between the writing performance of the students who are trained to write through computers, and that of those who are trained to write in the traditional way?

2. Are there statistically significant differences at (α = 0.05) between the writing performance on the linguistic level (local aspects), of the students who are trained to write through computers, and that of those who are trained to write in the traditional way?

3. Are there statistically significant differences at (α = 0.05) between the writing performance on the rhetorical level (global aspects), of the students who are trained to write through computers, and that of those who are trained to write in the traditional way?

However, before presenting the findings of the experiment, it might be necessary to refer to the results of the descriptive statistics which were obtained to describe the properties of all variables involved and to calculate the adjusted means and the standard

deviations of students' performance in the writing tests. The adjusted means and the standard deviations were computed by the Analysis of Covariance when the two groups were made equivalent. The higher adjusted means indicate better performance whenever there are statistically significant differences.

Table 1 below shows the Means and Standard Deviations of the control and the experimental groups with regard to students' scores in linguistic (local) and rhetorical (global) aspects of writing in the pre- and post-tests. With regard to the performance of the two groups in the composition test, it is apparent from Table 1 below that the students of the experimental group scored higher than those of the control group in both local and global aspects of writing (3.8 and 3.3 respectively). Furthermore, the Means and Standard Deviation of both local and global aspects of writing sub-levels were also computed as illustrated in Table 1 below to answer the three questions of the study.

Table 1

Means and Std. Deviation of the Control and Experimental Groups With Regard to Students' Scores in the Pre and Post Tests

Aspects of Writing Performance	Group							
	Control Group N=17				Experimental Group N=20			
	Mean		Std. Deviation		Mean		Std. Deviation	
	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test
1. Local Aspects	2.2	3.4	0.7	0.4	1.9	4.0	0.4	0.3
Word Choice	2.3	3.3	0.7	0.4	1.8	3.7	0.4	0.3
Sentence Structure	2.3	3.4	0.8	0.4	1.9	3.9	0.5	0.4
Conventions	2.2	3.6	0.8	0.4	1.8	4.7	0.4	0.2
2. Global Aspects	2.5	3.2	0.6	0.4	1.8	3.6	0.4	0.3
Ideas and Content	2.1	3.4	0.7	0.4	2.0	3.7	0.5	0.4
Organization	2.3	3.2	0.6	0.4	1.6	3.6	0.4	0.3
Coherence & Continuity	2.0	3.1	0.7	0.3	1.7	3.6	0.4	0.4
Local & Global Aspects	2.2	3.3	0.7	0.4	1.8	3.8	0.4	0.3

With regard to the local aspects of writing, Table 1 indicates that the mean of the experimental group is higher than that of the control group (4.0 and 3.4, respectively).

The local aspects of writing, as indicated in the Checklist of Composition Evaluation, include three sub-levels: word choice, sentence structure and conventions. With respect to the word choice, Table 1 shows that the students of the experimental group scored higher than the students of the control group (with means of 3.7 and 3.3). The same applies to the other two sub-levels: sentence structure and conventions.

With respect to the rhetorical aspects of writing, Table 1 also shows that the experimental group scored higher than the control group (3.6 and 3.3, respectively). This also applies to the sub-levels of the rhetorical aspects: ideas and content (3.7 and 3.4), organization (3.6 and 3.2), and coherence and continuity (3.6 and 3.1).

To find out if those differences in Means were significant, the Analysis of Covariance was computed. Tables 2, 3, and 4 below show the results of the analysis.

Findings Relating to Question One

Are there statistically significant differences at ($\alpha = 0.05$) between the writing performance of the students who are trained to write through computers, and that of those who are trained to write in the traditional way?

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Table 2

Analysis of Covariance (ANCOVA) for the Performance of the Two Groups in the Post-

test (Total Score) Using the Pre-test as Covariance

Level	Source of Variance		Sum of Squares	df	Mean Square	F	P
Total Scores	Covariates	Pre-Test	0.0007773	1	0.000777	0.006	0.938
	Main Effects	Group	2.65	1	2.65	21.203	0.000 *
	Residual		4.249	34	0.126		
	Total		6.9	36	0.192		

* P < 0.01

The results of the ANCOVA, as indicated in table 2 above, show that there is a statistically significant difference between the two approaches (F=21.203, P< 0.01). This difference is in favour of the experimental group as the mean of the experimental group is 3.8 while for the contol group it is 3.3.

The Analysis of Covariance was extended to include the two main levels of the test: the local aspects and the global aspects of writing as shown in Table 3 and Table 4 below.

Findings Relating to Question Two

Are there statistically significant differences at (α = 0.05) between the writing performance on the linguistic level (local aspects), of the students who are trained to write through computers, and that of those who are trained to write in the traditional way?

Table 3

Analysis of Covariance (ANCOVA) for Students' Performance in Local Aspects and its

Sub-Levels

	Source of Variance		Sum of Squares	df	Mean Square	F	P
Local Aspects	Covariates Pre-Test Local Aspects		0.001792	1	0.001792	0.015	0.904
	Main Effects	GROUP (Post- test)	3.961	1	3.961	32.48	0.000 *
	Residual		4.147	34	0.122		
	Total		8.110	36	0.225		
1. Word Choice	Covariates Pre-Test Word Choice		0.170	1	0.170	1.034	0.316
	Main Effects	GROUP (Post- test)	1.850	1	1.850	11.28	0.002 *
	Residual		5.576	34	0.164		
	Total		7.596	36	0.211		
2. Sentence Structure	Covariates Pre-Test Sentence Structure		0.03378	1	0.03378	0.192	0.664
	Main Effects	GROUP (Post- test)	2.562	1	2.562	14.6	0.001*
	Residual		5.967	34	0.176		
	Total		8.563	36	0.238		
3.Convention	Covariates Pre-Test Conventions		0.796	1	0.796	7.371	0.010
	Main Effects	GROUP (Post- test)	11.045	1	11.045	102.3	0.000*
	Residual		3.671	34	0.108		
	Total		15.512	36	0.431		

* P < 0.01

The first main level of the Checklist of Composition Evaluation is concerned with local aspects of writing. As can be seen in Table 3 above, there is statistically significant difference between the writing performance on the linguistic level (F=32.48, P< 0.01) between the students who were trained to write with the aid of computers and those who were taught to write in the traditional way. This difference is in favour of the experimental group as the mean score indicates (4.0 >3.4).

The students' performance in the local aspects of writing can be seen clearly in Table 3. With regard to the first sub-level of the local aspects of writing, Table 3

indicates that there is a statistically significant difference between the writing performance at the word choice sub-level (F=11.28, P< 0.01). This difference is in favour of the experimental group as the mean of the experimental group is 3.7 while for the contol group it is 3.3.

With regard to the second sub-level of the local aspects (sentence structure), the Analysis of Covariance showed that there is a statistically significant difference in the writing performance at the sentence structure sub-level between the experimental group and the control group (F=14.60, P< 0.01). The mean of the experimental group is 3.9 while for the controlled group it is 3.4.

Concerning the last sub-level of the local aspects of writing (conventions), Table 3 shows that there is a statistically significant difference in the writing performance on the conventions sub-level between students who were trained to write with the aid of computers and those who were trained to write without using computers (F=102.3, P< 0.01). This difference is in favour of the experimental group as the mean of the experimental group is 4.7 while for the control group it is 3.6.

Findings Relating to Question Three

Are there statistically significant differences at (α = 0.05) between the writing performance on the rhetorical level (global aspects), of the students who are trained to write through computers, and that of those who are trained to write in the traditional way?

Table 4

Analysis of Covariance (ANCOVA) for Students' Performance in Global Aspects and its

Sub-Levels

	Source of Variance	Sum of Squares	df	Mean Square	F	P
Global Aspects	Covariates Pre-Test Global Aspects	0.01758	1	0.01758	0.119	0.733
	Main Effects GROUP (Post-test)	1.598	1	1.598	10.77	0.002*
	Residual	5.043	34	0.148		
	Total	6.659	36	0.185		
1. Ideas and Content	Covariates Pre-Test Ideas & Content	0.05919	1	0.05919	0.288	0.595
	Main Effects GROUP (Post-test)	1.147	1	1.174	5.719	0.022 **
	Residual	6.98	34	0.205		
	Total	8.214	36	0.228		
2. Organization	Covariates Pre-Test Organization	0.09193	1	0.09193	0.582	0.451
	Main Effects GROUP (Post-test)	1.646	1	1.646	10.42	0.003*
	Residual	5.373	34	0.158		
	Total	7.111	36	0.198		
3. Coherence and Continuity	Covariates Pre-Test Coh. & Cont.	0.193	1	0.193	1.01	0.322
	Main Effects GROUP (Post-test)	1.915	1	1.915	10.05	0.003 *
	Residual	6.481	34	0.191		
	Total	8.589	36	0.239		

* $P < 0.01$
** $P < 0.05$

The second main level of the Checklist of Composition Evaluation is global aspects. Global aspects are also divided into three sub-levels: ideas and content, organization, and coherence and continuity. Table 4 informs that there is a statistically significant difference in the writing performance on the rhetorical level (global aspects) between students who were trained to write using computers and those who were trained to write without using computers $(F=10.77, P< 0.01)$. This difference is also in favour of the experimental group as the mean of the experimental group is 3.6 while for the controlled group it is 3.2.

The first sub-level of the global aspects is ideas and content. It is clear in Table 4 that there is a statistically significant difference between the writing performance on the ideas and content sub-level in favour of the experimental group (F=5.719, P< 0.05). The mean of the experimental group is 3.7 while the controlled group mean is 3.4.

Organization is the second sub-level of the global aspects of writing. The Analysis of Covariance reveals that there is a statistically significant difference between the two groups in this respect as shown in Table 4 above (F=10.42, P< 0.01). This difference is also in favour of the experimental group as the mean of the experimental group is 3.6 while for the control group it is 3.2.

The third and last sub-level of the global aspects of writing is coherence and continuity. As indicated in Table 4 above, there is a statistically significant difference between the two groups in this sub-level (F=10.05, P< 0.01). The experimental group's mean is 3.6 while that of the control group is 3.1.

Summary of Findings

The findings of the study can be summarised as follows:

1. Students who were trained to write using computers performed significantly higher than those who were not (grand means compared).

2. Students who were trained to write using computers performed significantly higher in the linguistic aspects of writing than those who were not (grand means compared).

3. Students who were trained to write using computers performed significantly higher in the rhetorical aspects of writing than those who were not (grand means compared).

Chapter Five

Discussion

The discussion in this chapter addresses the findings presented in Chapter Four of this study, which are based on the following three questions:

1. Are there statistically significant differences in the writing performance of tenth grade students that can be attributed to the teaching method?

2. Are there statistically significant differences in the writing performance of tenth grade students in the linguistic aspects that can be attributed to the teaching method?

3. Are there statistically significant differences in the writing performance of tenth grade students in the rhetorical aspects that can be attributed to the teaching method?

Discussion of Findings Relating to Question One

Based on the findings relating to question one. Table 5 shows that the students in the experimental group performed significantly higher than those in the controlled group. This can be seen as a result of the *mode of instruction.*

It is believed that the teaching of writing with the aid of computer stipulates the collaborative method of instruction. Students learn better when writing is taught as a process in decentralized classrooms (Sommers, 1984). The computer–oriented approach, used in the present study, depends primarily on collaboration. The teacher of writing and his students play their role to conclude a satisfactory piece of writing.

The underlying tenet of the computer–based collaborative approach is that the most important skill in good writing is the ability to read student's text insightfully. The student must, in other words, be a good reader of other student's text in order to be a good writer. Such skill depends on the practice of reading student's papers. The computer–based collaborative approach supposes that the best instructional activity depends on intensive reading and critique of another student's text.

The computer-oriented approach favours using certain techniques to have students in a writing group respond to each other's papers by: physically moving to another student's computer, reading the screen, and responding to the information or exchanging disks with other students, or gathering around a single screen to discuss with the student.

Balester (1992) confirms the above view. He mentions that the basic advantage of using computers in the composing process is that they encourage collaboration and experimentation. Furthermore, Handa (1990: p.24) supports the computer-based collaboration approach when she states that "the computer based collaborative approach attempts to re-empower text by emphasizing the student text itself instead of the instructor's evaluation."

Another factor that appears to influence student's performance is the use of the *process writing approach vs. product writing approach* .The product writing approach depends on imitating, copying and transforming models of correct language at the sentence level. The primary emphasis is on providing practice in producing different kinds of texts, while a secondary one is to prevent the production of errors in students'

writing. Most of the writing techniques that Jordanian teachers apply as shown in the traditional approach (in Chapter Three) such as *"controlled composition"* or *"guided composition"* force students to memorize certain writing structures and apply them to their future writing. The growing dissatisfaction with the product approach led to the interest in discovering the process approach. The process approach consists of sub-processes: generating ideas, focusing, structuring, drafting, evaluating and reviewing. Such sub-processes motivate students to discover and invent. The main objective of using the computer-oriented approach in the experiment is to train Jordanian students to employ inventing strategies.

Cochran–Smith et al (1991) support the above viewpoint. In this respect, they believe that the computer is a tool that would help writers write better because writers are more likely to treat their developing texts as impermanent and would, therefore, write to discover and shape what they had to say. Moreover, Palmquist et al (1998) believe that the computer-oriented approach stimulates students to look at the word, sentence, or paragraph in a way that they did not do before.

A third factor that may contribute to the improvement of students' writing performance is the *teacher's goals*. The writing teacher is only a facilitator and an assignment maker. Such view is also held by Dawn & Raymond Rodrigues (1989) who believe that teachers should teach a new way of thinking about and working with writing, a way of thinking of the text as fluid and adjustable, a way of thinking about communication as dynamic and purposeful. Moran (1998:p.45) also supports the above mentioned view when he describes the teachers' role in the composing process. He says: "In this setting, everyone is working, apparently; I, the teacher, am released. I am

not at the center of the class, fully responsible for its progress". Warschauer (1996) reports the same observation in a research study in which ESL & EFL students were involved. Warschauer also believes that teachers can motivate their students by helping them to gain knowledge and skills about using computers for writing.

The fourth factor that appears to influence students' writing performance is the *students' attitude*. The students of the experimental group had a positive attitude toward using computers for writing. The new writing tool motivates them to be involved in such an experience which consequently affects their performance positively. The same result is in line with the research findings of Joram et al (1990). They believe that students generally prefer computers for revision in the composing process. Also, the result is in line with the research findings of Warschauer (1996:p.10). He writes "A wide range of language students–whether they are male or female, skilled or unskilled at typing and using computers, and experienced or inexperienced in using computers– have a positive attitude toward using computers for writing and communication in the language classroom."

Another factor that may contribute to the improvement of the students' writing performance is that the computer-oriented approach functions as *a problem-solving model*. Students are trained to use informal methods of invention such as brainstorming, cubing, and freewriting. Then they are trained on formal invention strategies as methods of solving problems by evaluating past experience and moving by trial and error to a solution. These methods deepen students' analysis for their topics.

The last factor that seems to influence students' writing performance is the computer as a writing and *time-saving tool*. Once the students are used to writing with computers, they find themselves free from the burdens of the mechanics of writing such as recopying, correcting errors, and writing another draft. Computers also save time by providing students with immediate feedback about their written texts. This result is consistent with Selfe and Wahlstrom (1985) findings. They believe that computers are powerful tools that help us do our work more quickly than we could do it alone.

Discussion of Findings Relating to Question Two

Based on the findings relating to question two, there were statistically significant differences in the writing performance of tenth grade students in linguistic aspects that can be attributed to the teaching method. Table 5 shows a percentage of improvement in the students' performance of the experimental group over the performance of students of the control group at the rate of 15%. With respect to the improvement in the three sub-levels of the local aspects of writing, the percentages of improvement were 10.81% for word choice, 12.82% for sentence structure, and 23.40% for conventions.

The traditional emphasis of writing is on the correct sentence structure, grammar, and the mechanics of writing such as spelling and punctuation. The computer, as a writing tool, helps students physically to write better texts without being worried about spelling or punctuation marks. Most of computer word-processing programs contain spelling and grammar checkers, in addition to paper layout preview. Such features encourage students to write more and reduce their anxiety toward writing. The computer, as a writing tool, allows students to track the course of removing errors from the paper. The suggested revisions appear in different colors or with lines under them.

The student then reads through the suggestions, answers questions, and accepts suggestions that improve the document while he rejects unnecessary comments.

The findings above are consistent with Hale (1996) who thinks that the drill and practice software help students practice skills in grammar and punctuation. The computers are able to provide students with immediate feedback with a variety of corrections and comments. Furthermore, the findings are in line with Palmquist (1998) who believes that the student's text undergoes a series of tests designed to identify potential problems such as spelling errors, subject–verb agreement problems, and so forth. These findings also support Sommers' (1984) observation on word-processing programs when she holds the view that students often develop into more fluid writers since they no longer have to recopy but rather they become more willing to revise.

Discussion of Findings Relating to Question Three

As noted in Chapter Four findings relating to Question Three, there were statistically significant differences in the writing performance of tenth grade students in rhetorical aspects that can be attributed to the teaching method. The global aspects level is also divided into three sub-levels: ideas and content, organization, and coherence and continuity.

This is also supported by Table 5 which shows that the writing performance of thosestudents who were trained to write through computers was better than that of the students who were trained to write in the traditional way. The percentage of improvement is 11.11% at this level, whereas it is 8.10% for the ideas and content, 11.11% for organization, and 13.88% for coherence and continuity. Students' improvement in this level could be described as follows:

In addition to the students' better performance at the linguistic level as a result of using computers in writing classes, the use of computers seems to enhance students' writing performance at the rhetorical level. The computer-oriented approach appears to stimulate students to deal with the rhetorical aspects of writing.

With respect to finding balance and checking for completeness, although the computer cannot help students establish content, it can show them whether the paper's elements balance. One way to check for this balance is to look at the document without reading it. One of the most effective techniques for checking a paper's balance is also the simplest: Examine the document using the *Page Layout View*. The instructor asks students to examine the pages. Once students have this view on their screens, the teacher asks them certain questions such as: Which section looks as though the paragraph short? Does any paragraph extend for more than a page? Which thick block of paragraph might be broken up? Does any paragraph begin at the bottom of a page? And does any paragraph end at the top of a page?

Moreover, students can test the coherence of their papers by using certain functions provided by the computer software such as *the Block and Move* functions, the scramble of paragraphs order, or the highlight and mark transitions. Such functions are illustrated in details in chapter three of this study.

It is likely that the computer-oriented approach enables students to check for unity within paragraphs. Special commands such as *Copy, Paste, and Replace* serve students on revision and repositioning of sentences to check for unity as illustrated in Chapter Three.

Concerning the use of the *Outline* feature in this approach, it appears to help in the composing process. Such feature enables students to inspect the topic sentence for key characteristics such as: if the topic sentence introduces and defines the subject of the paragraph, provides a sufficient transition from the previous paragraph, or includes words that indicate the position of the paragraph in relation to the rest of the paper. The process of composing is not linear. Writing is more of a recursive activity in which the student moves backwards and forwards between drafting and revising, with stages of re-planning in between. The computer-oriented approach focuses on idea creation, invention, and establishment of content. The computer-oriented approach starts with prewriting and informal strategies in which freewriting is writing to discover what the student knows about a topic, or creating a student's draft. Then the approach moves students to other stages of thinking about their topic and helps them create ideas such as looping, cubing, and brainstorming. Then students move toward formal invention strategies such as Aristotle's Topoi where they can generate new interesting ideas or modify the old ones. The approach ensures students' free movement during these stages to reach optimal performance of creating ideas.

The view above is consistent with Kemp (1992) findings. He believes that students in the computer–oriented writing classroom get immediate feedback about their ideas which may be challenged, modified, or confirmed several times during the course of a single class. Thus, they receive direct and powerful validation of their recognition of exposition and persuasion through instant response.

The computer-oriented approach holds that students should practice working on global aspects before working on issues of style and mechanics. Students should

respond first to the paper as a whole-its content, structure, organization before addressing sentence structure or conventions.

Recommendations

Based on the findings of this study, the researcher recommends the following:

1. It is recommended to adopt and practice the teaching of the computer-oriented approach in Jordanian composition classrooms with continuous recording of students' performance to benefit other researchers in this field.

2. Further studies on the effect of using computers in the teaching of L2 composition on the writing performance of Jordanian students are worth recommending.

3. Further studies on the effect of using computers on students' writing performance using networked computers (Local Area Networks LAN), and World Wide Web (WWW) are worth recommending.

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Appendix A

Checklist of Composition Evaluation

CHECKLIST OF COMPOSITION EVALUATION
Level 1: Linguistic Aspects

1.1 Word Choice	No	Evaluation Traits	Exam A					Exam B				
			1	2	3	4	5	1	2	3	4	5
	1	*Clear message:* The word choice is effective and the meaning of the words is precise.										
	2	*Lively verbs (action) and specific, concrete nouns:* Key words which describe the function of the part of a paragraph										
	3	*Paints a clear image:* The use of similes and metaphors to paint images.										
	4	*Avoid vague words like "thing" and "nice"* Avoidance of words that do not limit the topic and point out the direction in which the paragraph will move.										
	5	*Avoids redundancy:* Avoidance of unnecessary repetition.										
1.2 Sentence Structure	6	*Easy to read:* Each sentence stands alone and can be easily read.										
	7	*Correct grammar:* The use of correct grammatical rules.										
	8	*Varied sentence length And structure:* The use of short, long, simple, compound, or complex sentences to express a complete thought.										

CHECKLIST OF COMPOSITION EVALUATION
Level 1: Linguistic Aspects

1.3 Conventions	No	Evaluation Traits	Exam A					Exam B				
			1	2	3	4	5	1	2	3	4	5
	9	*Correct punctuation and spelling:* The uses of appropriate punctuation marks and correct spelling.										
	10	*Tense:* The use of appropriate tense types, past, present, etc.										
	11	*Good margins:* The first line is indented and moved in a few spaces.										
	12	*Overall neat appearance:* First things come first, second come second in accordance with writing conventions.										

CHECKLIST OF COMPOSITION EVALUATION
Level 2: Global Aspects

2.1 Ideas	No	Evaluation Traits	Exam A					Exam B				
			1	2	3	4	5	1	2	3	4	5
and Content	13	*Interesting:* Ideas and Content give the paragraph its distinct shape and unified whole										
	14	*Clear:* Ideas are precise, satisfactory, well-supported, and indicate to the reader what the paragraph is going to do.										
	15	*Detailed:* Simple list of main ideas and supporting points.										
	16	*Purposeful:* Ideas and Content are formed and fitted to the paragraph purposes										
2.2 Organization	17	*Effective title:* A phrase, not a complete sentence that is directly related to the topic.										
	18	*Reader orientation:* Introduction draws in readers.										
	19	*Clear main ideas:* Tell the general topic which will be discussed and tell the reader what kinds of things will be said about the topic.										
	20	*Clever conclusion:* Lets the reader know that the paragraph is finished and summarizes what has been written.										

CHECKLIST OF COMPOSITION EVALUATION
Level 2: Global Aspects

2.3 Coherence and Continuity	No	Evaluation Traits	Exam A					Exam B				
			1	2	3	4	5	1	2	3	4	5
	21	*Strong Transitions:* The use of words or phrases that permit easy passage from one sentence or idea to the next, bridge the sentences, eliminate gaps between sentences, and show correct order of sentences.										
	22	*Completeness:* The developed information about the thesis enough, adequate, reflect thought, and as a whole satisfactory.										
	23	*Progression of Ideas:* Ideas are relevant, necessary, and the reader will not become bored and lost.										

Al MA'AREF SCHOOLS
Writing Exam/

Student Name:
10th Grade
Time: 1 Hour

Question (1)   **(25 Marks)**

Write a paragraph about a day trip you have made to an interesting place in Jordan. When did you start? What did you take? Who did you go with? How did you travel? When did you get there? What did you do when you arrived? How long did you stay? What do you think of the trip? How do you feel about it?
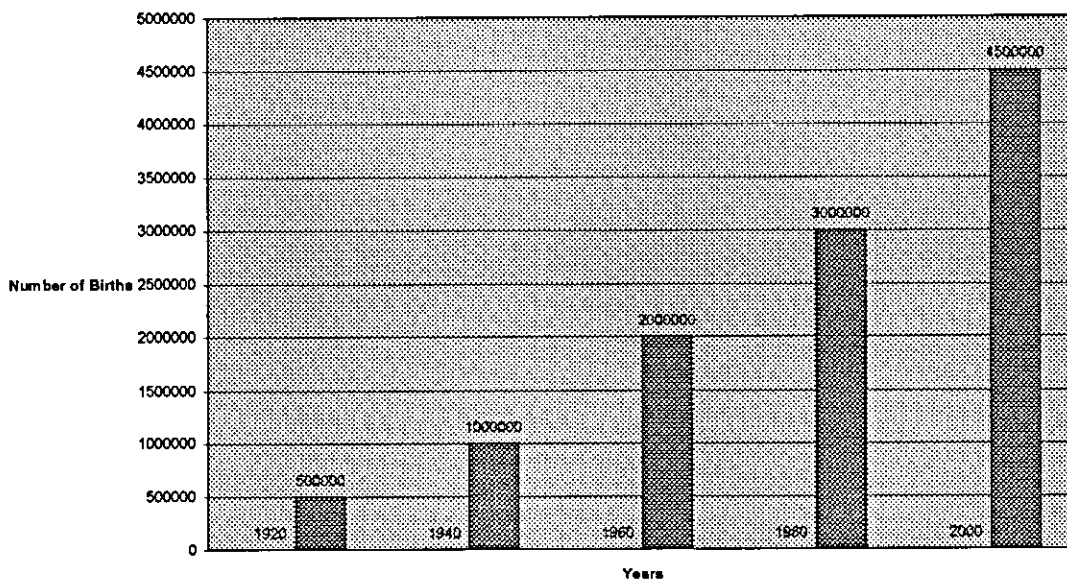
                                           (30 minutes)

Question (2)   **(25 Marks)**

The graph below shows the annual number of births in Jordan during this century. Write a paragraph in your answer sheet based on the graph. Start your paragraph from 1920.

                                           (30 minutes)

Anual Number of Births in Jordan

Good Luck

School:

Teacher Name:

Dear Teacher,

Kindly describe and explain the methods, strategies, procedures, and processes that you use to teach the 10th graders the English language composition. You may use additional paper(s).

Appendix D
The Computer-Oriented Approach Software and Hardware

A- Writing Software (Word Processing Programs)

"Windows"

Some of the more recent programs of word-processing incorporate windows. The window feature is considered to be an advantage for any word-processing program. It highlights the interactive aspect of word-processing by enabling the student to view outlines, notes, and reminders on different segments of the screen while composing on the rest. It also allows the student to open multiple document windows and rearrange them or cut and paste between them while writing. Moreover, the window feature is especially important for the student because it can facilitate planning, which is an integral part of the writing process. Finally, the window feature assures freedom of movement from prewriting and planning to drafting and revising a paper.

The Daedalus Integrated Writing Environment

Daedalus is awarded winner software, a computer program. Like all computer programs, it defines the computer as a particular kind of machine. Spreadsheet program treats computers as devices for manipulating numbers in specific ways. Word processors treat them as machines for manipulating texts.

The software is an integrated package of writing / thinking tools designed with the classroom in mind. The program focuses on teaching and learning by means of (often-interactive) written discourse and encouraging collaborative work, critical thinking skills, and communication. DIWE comprises five models: INTERCHANGE, MAIL, INVENT, RESPOND, and WRITE. Each designed to address a specific task or stage of producing a piece of writing.

B- Computer Hardware

The school computer laboratory used for the experiment was equipped with 22 stand–alone computers all of *COMPAQ* type with Pentium 2 processor and full multimedia. The operating system set was *WINDOWS 98*.

Appendix E
The Validating Committee

1. Dr. Ahmad M. Al Maqableh	Assistant Prof. Faculty of Educational Sciences, University of Jordan
2. Dr. Nayel D. AlShara'h	Assistant Prof. Faculty of Educational Sciences, University of Jordan
3. Dr. Younes Al Younes	Assistant Prof. Faculty of Educational Sciences, University of Jordan
4. Turki Bani Khalid	Associate Prof. Faculty of Educational Sciences, University of Jordan
5. Dr. Khalid Al Ajlouni	Assistant Prof. Faculty of Educational Sciences, University of Jordan
6. Dr. Ibrahim Al Moumani	Assistant Prof. Faculty of Educational Sciences, University of Jordan
7. Dr. Narjes Hamdi	Associate Prof. Faculty of Educational Sciences, University of Jordan
8. Dr. Ratib Ashour	Assistant Prof. Faculty of Educational Sciences, University of Jordan
9. Dr. Ramzi Haroun	Assistant Prof. Faculty of Educational Sciences, University of Jordan
10. Dr. Umayya Bakeer	Assistant Prof. Faculty of Educational Sciences, University of Jordan

ملـــخص

تأثير استخدام الحاسوب في تعليم التعبير في اللغة الإنجليزية على الاداء الكتابي
لطلبة الصف العاشر الأساسي في المدارس الخاصة في عمان

إعداد
سميح داود السوقي

المشرف

د. نائل الشرعة

سعت هذه الدراسة إلى استقصاء أثر استخدام الحاسوب في تعليم التعبير في اللغة الإنجليزية على الاداء الكتابي لطلبة الصف العاشر الأساسي في مدارس عمان الخاصة . ومن أجل تحقيق هذا الهدف ، سعت الدراسة للإجابة عن الأسئلة الثلاثة التالية :

١- هل يوجد فروقات ذات دلالة إحصائية عند مستوى الدلالة ($\alpha=0.05$) في التعبير الكتابي بين أداء الطلاب الذين تم تدريبهم على الكتابة من خلال الحاسوب وأداء الطلاب الذين تعلموا الكتابة بالطريقة التقليدية؟

٢- هل يوجد فروقات ذات دلالة إحصائية عند مستوى الدلالة ($\alpha=0.05$) في التعبير الكتابي من حيث المستوى اللغوي (Linguistic Level) بين أداء الطلاب الذين تعلموا الكتابة باستخدام الحاسوب وبين أداء الطلاب الذين تعلموا الكتابة بالطريقة التقليدية؟

٣- هل يوجد فروقات ذات دلالة إحصائية عند مستوى الدلالة ($\alpha=0.05$) في التعبير الكتابي من حيث المستوى البلاغي (Rhetorical Level) بين أداء الطلاب الذين تعلموا الكتابة من خلال استخدام الحاسوب وأداء أولئك الطلاب الذين تعلموا الكتابة بالطريقة التقليدية؟

وللإجابة عن تلك الأسئلة الثلاثة ، قام الباحث بتدريس التعبير الكتابي باللغة الإنجليزية لمجموعتين من طلاب الصف العاشر الأساسي في كلية ومدارس روضة المعارف الأهلية في عمان لمدة فصل دراسي واحد . تكونت عينة الدراسة من سبعة وثلاثين طالبا تم توزيعهم في غرفتي تدريس مختلفتين . بينما كانت المجموعة الضابطة التي تم تدريسها بالطريقة التقليدية تتكون من سبعة عشر طالبا . تكونت المجموعة التجريبية والتي تم تدريسها باستخدام الحاسوب من عشرين طالبا. في البداية قام الباحث بإجراء اختبار قبلي Pre-test للتعرف الى مستوى أداء الطلاب في التعبير الكتابي لكلا المجموعتين ، وفي نهاية الفصل الدراسي تم استخدام نفس الاختبار كاختبار بعدي Post-test .

لقد قام الباحث بإعداد وتحكيم قائمة محددة لتقييم أداء الطلاب الذين استخدموا الحاسوب في تعلم التعبير الكتابي . تكونت القائمة (Checklist of Composition Evaluation) من مستويين : المستوى اللغوي والمستوى البلاغي للتعبير الكتابي . وفي نهاية التجربة ، تم تحليل نتائج الاختبارات من خلال (تحليل التباين المشترك) Analysis of Covariance (ANCOVA) . وقد أظهرت نتائج الدراسة أن الحاسوب يعتبر أداة تعليمية ذات تأثير إيجابي على مستوى أداء الطلاب في التعبير الكتابي على المستويين اللغوي والبلاغي (الشكلي والمضمون) .

استنادا إلى نتائج الدراسة آنفة الذكر ، يوصي الباحث باستخدام الحاسوب في تدريس الكتابة من اجل تطوير التعبير الكتابي لطلبة الصف العاشر ويوصي أيضا بتدريب الطلبة على استخدام الأساليب الحديثة في تعلم التعبير الكتابي من خلال الحاسوب .