The purpose of this study was to determine the effectiveness of a web-based writing instructional EFL program (WBWIP) on Jordanian secondary students’ performance. The participants of the study were 122 seventeen-year-old students in the eleventh scientific grade studying in four secondary comprehensive schools, two male schools and two female ones that belong to Irbid Second Directorate of Education. In order to achieve the objectives of the study the researchers used a pre-post achievement test. The experiment lasted for two months (16 normal classes). The results of the study revealed statistically significant differences at ($\alpha = 0.05$) in the students’ mean scores of the overall English writing achievement post-test in favor of the experimental group. The results also revealed that there were statistically significant differences at ($\alpha = 0.05$) due to gender in favor of the female students compared with males. The results further revealed that there was a significant difference at ($\alpha = 0.05$) among the mean scores of the students’ achievement post-test for the discoursal component “content” in favor of the experimental group.

Introduction

Writing is an important communicative language skill. It is an activity that requires a mental effort to “think out” the sentences and the ways of joining them to be meaningful and communicative. But it is not a skill to be learned in isolation from the other language skills: listening speaking and reading. Writing skill is taught with the goal of equipping students with the ability to use it in higher education or at work. It is also a good means to express
one's needs, feelings, thoughts and experiences (English General Guidelines and Curricula for the Secondary stage; MOE, 1993, p. 6). But writing should not be thought of as only a productive skill. It is rather a three-stage process (pre-writing, writing, and rewriting). The teacher, occasionally, gives lessons about writing mechanics, provides writing models and various writing practices to keep his students interested, and goes around giving help and feedback when necessary (English General Guideline and Curricula for the Basic and Secondary Stages, MOE, 2002, p. 70).

It is difficult to deny that Jordanian foreign language learners suffer from weaknesses in writing despite the efforts of the Jordanian educationalists to overcome this weakness (Toubat, 2003). Teachers help their students to practice various relevant writing tasks to make the process of writing easier. Moreover, students may follow different processes to produce good composition (arranging ideas, selecting words, forming sentences and combining these sentences into coherent paragraphs).

Whiteman (1981) states that students are weak in writing because teachers concentrate on teaching grammar, spelling drills, and punctuation rather than involving students in the writing process. In spite of the fact that these are means that help students learn language in general and writing in particular, students need to be taught how to produce language communicatively. Techniques of teaching writing should be enjoyable and interesting to the students while helping them write good compositions.

Technology has been a tool for teaching writing skills since its introduction to schools. The use of technology for writing includes computer-based projects, software programs and word-processing that direct writing instruction and assist students in developing their own writing, emails, and websites (Burner, n.d.). Research findings have supported the use of technology in teaching language. First, technology has positive influences on students' motivation (Tsou, Wang, & Li, 2002). Second, technology programs have been encouraged as cost effective ways that could be used to replace or enhance direct human input (Ware & Warschauer, cited in Tsou, 2008). Acting in the electronic community helps learners create, analyze, and produce ideas easier and more efficiently. Using emails and sharing files give students the chance to collaborate with peers and teachers (Belisle, 1996).

The use of the Internet and the World Wide Web has affected the educational process, the way teachers teach students, and the field of EFL (Chuo, 2007). The Internet serves both as a communication tool and as an information resource (Cunningham, 2000; Lee, 2009). In fact, the most frequent classroom use of the Internet is searching for information resources (Grabe & Grabe, 2001).

Besides exposing students to the use of web-based writing instructional programs, the Internet and the World Wide Web may change students' attitudes towards language and this may help them write coherent compositions. Pennington (1993), Sullivan and Pratt (1996), and Braine (1997) found that the writing skills of EFL students who used a computer-mediated networked environment and web-based materials improved significantly. Therefore, using a web-based writing program is a strategy that may help students write effectively in a communicative sense. They can benefit from the Internet magazines and newspapers (Allen, 1995; Silver, 1990).

Although there is a great deal of research conducted on the effect of computer technology on learners’ language performance and its advantages, many schools do not utilize classroom and school-based computer labs and related software to teach writing. Teachers also do not use emails and websites to encourage students’ writing and communication at
both public and private schools according to the researchers’ knowledge as teachers and supervisors of English.

In the Jordanian context, thousands of computers have been bought and distributed at public schools. Recently, 65,000 personal computers (PCs) have been given to 2,250 public schools (Bataineh & Baniabderahman, 2006). Nowadays, these computers are linked to the Internet.

However, to date, it seems that no study has investigated the use of a web-based writing instructional program on Jordanian students’ writing composition. Therefore, the researchers designed this web-based writing program which can be used to write compositions. This study offers Jordanian students the opportunity to use the Internet and get benefit from it when writing compositions. The findings of this study might encourage educational leaders to reconsider this technique for schools.

Statement of the problem

Throughout the researchers’ field work at schools and the university, they noticed that students have weak writing skills, and they need to develop their linguistic abilities. Since writing is a productive skill, it is difficult. This difficulty lies in how to produce functional sentences which comprise coherent text (Abott & Wingard, 1981). Students face difficulty in writing as they are required to produce good ideas arranged logically, using an active group of vocabulary items and structures including discourse markers. Teachers concentrate on structure rather than the writing process and the current technique they use is not effective (Al Omari, 2004; Al-Quran, 2002; Al-Sharah, 1988; Batayneh, 1986; Kane, 1983; Kharma, 1985; Krashen, 1984; Leki, 1991; Shakir, 1991; Toubat, 2003).

The researchers believe that there are many reasons for students’ weakness in writing skills, the most important of which is the technique of teaching. Moreover, teaching aids such as computers and the Internet are very important and may positively influence students’ writing. It seems that there is a need to adopt new techniques for teaching writing that may help students become better writers.

The current technique for teaching writing for EFL students has not improved their writing level. Many applied linguists, such as Al-Abed Al-Haq and Ahmad (1994) and Smadi and Al-Abed Al-Haq (1995) stress that the inappropriate techniques and process of teaching and learning lead to students’ weakness in writing. They recommended adopting the discoursal components that may enhance the students’ level. However, adopting a discoursal technique in traditional classroom has not also produced good writers according to the researchers’ knowledge. Therefore, the researchers adopted a discoursal technique based on the web that may enhance the students’ writing level.

Purpose of the study

This study is designed to investigate the direct effect of a web-based writing technique on students’ writing performance

Questions of the study

This study attempts to answer the following questions:
1. Are there any statistically significant differences among the eleventh grade students’
mean scores of the English writing achievement test due to the technique of teaching, gender, and interaction between them?

2. Are there any significant statistical differences among the eleventh grade students mean scores of the English writing achievement test due to the discoursal components: “Content”, “Organization and mechanics”, “vocabulary” and “language use”?

**Significance of the study**

Although a substantial amount of research has been conducted on writing skill (Toubat, 2003), there has been no study conducted using a web-based writing instructional program in Jordan. There might be similar studies conducted abroad, but the variables and environment are different. The significance of this study comes from the fact that it will provide teachers and students with a web-based writing technique for teaching English writing.

The web-based writing instructional technique may motivate students and help them enjoy learning writing skills and get rid of frustration as they feel their English writing improve. In addition, the findings of this study may help educators, curriculum designers and policy makers include such writing instructional programs in the Jordanian English curriculum. As a result, they are expected to develop training programs both for teachers and students.

**Definition of terms**

**Current technique:** It refers to the instructional technique without the use of computers which is often used in classrooms and includes several steps. First, at the pre-writing stage students discuss the main ideas with the teacher. Second, the students write first drafts which are checked by the teacher. Third, students write final drafts and receive feedback from the teacher. Some subjects are then read and discussed.

**Secondary stage:** This stage includes two grades in Jordan: the eleventh grade and the twelfth grade. At the eleventh grade students study levels one and two, whereas at the twelfth grade students study levels three and four.

**Guided writing:** It is the kind of writing in which the teacher gives the students a situation and helps them to prepare the written works, with either written or oral assistance.

**Thesis statement:** It is a sentence that expresses the purpose of the essay. It is the main sentence that comes at the beginning of the essay carrying opinion or judgment that can be explained in the paragraph (Smadi and Al-Abed Al-Haq, 1995:100).

**Cohesion:** It is the relationship within a sentence or between sentences: lexical cohesion, conjunction, reference, ellipsis, and substitution (Haliday and Hassan, 1976).

**Limitations of the study**

This study has the following limitations:

1. This study is restricted to the available sample of eight sections of the scientific stream eleventh grade students in Omar El-Lafi Secondary School for Boys, Eidoun Secondary
School for Girls, Al-Mazar Secondary School for Boys and Al-Mazar Secondary School for Girls as these schools are equipped with very good computer labs linked to the Internet. Teachers and students are also very cooperative there. The researchers trained them in the Intel program.

2. Topics of writing are restricted to the following:
   a) Descriptive writing: It is an account of the described thing.
   b) Narrative writing: It is simply telling a story.
   c) Expository writing: The purpose of this writing is to explain and clarify ideas directly through definition, analysis, comparison or information.

Review of related literature

This section is devoted to reviewing studies on computer-assisted writing and web-based writing.

Studies on computer-assisted writing

Pigg (1996) studied the effectiveness of the CALL program “Paragraph Builder” on fifth grade students’ topic sentence identification. Pigg used a pre-post test control group design. The post test results indicated that the program produced a statistically significant rise in the mean scores of the post-test. The results revealed that students working with the computer enjoyed learning about topic sentences by using the program “Paragraph Builder”.

Frizzler (1995) explored the potential impact of one application of computer mediated communication on university level ESOL composition students and instructors. The participants were non-native speakers of English from non-English-speaking countries (Japan, Croatia, Finland, Republic of Korea, Brazil, Egypt, Russia and Indonesia). They studied an online course at Frizzy University. This was a free, non-credit university-level course over an eight-week period during the summer of 1995. It was conducted online, via the Internet, through email. The students interacted with each other via email discussing essays and exchanging essays for peer review. The findings showed that the interactivity among students was the key to the successful online writing class. Using the Internet to teach ESOL requires changes in teachers’ roles, approaches and attitudes toward teaching. The Internet functions can be used not only as a means of classroom facilities but also as language learning tools. Frizzler concluded that the Internet technology should be integrated into the ESL classroom.

Langone, Levine, Clees, Malone and Koorland (1996) studied the use of computer-based word processing on the writing samples of elementary students with behavior disorders. A repeated measures, alternating-treatments design was used to compare student performance in constructing writing samples under two experimental conditions: a) a typing tutor plus a computer-based word processor and b) paper and pencil. The findings showed a positive effect on the writing of students in the experimental group by making them more independent. Of the 6 students’ written story lengths, three increased during the experimental condition. Individual differences in the error rates were noted and indicated varied improvement under each condition for capitalization, spelling, punctuation and complete sentences. Other students’ writing showed little improvement except editing and spending more time on writing.

Adler-Kassner and Reynolds (1996) studied the computer use in basic composition
classes at Minnesota’s General College. Although computer-assisted instruction packages were not utilized, the computer was used as a tool to help students become aware of their reading skill. The researchers found that students benefited from the interaction with readings over email more than in the traditional classroom. The researchers also found that students’ confidence was strengthened because of the feedback they received in terms of email responses. Moreover, students benefited from locating other resources and making connections to the texts they used.

Braine (1997) investigated the effects of networked computers on ESL student writing at Brock University in Ontario, Canada. The researcher compared ESL students in first-year English classes writing in two contexts: a networked computer class and a traditional lecture-style class. The purpose was to determine which setting promoted writing, had more improvement in writing, and had more peer and teacher feedback. The first and final drafts of students’ papers were scored, and the number of interactions during peer-review sessions was analyzed. The networked setting was shown to promote better writing and more peer and teacher feedback. The traditional setting was shown to promote more improvement in writing.

Al-Madi (2002) investigated the effects of using computer instruction on the achievement of Jordanian secondary students in English. The participants were scientific eleventh grade students. The results indicated that there was a positive significance in the achievement of students’ post-test in favor of the experimental group who were taught English via computer compared with the control group taught with the traditional method. The researcher concluded that CALL is an effective means for vocabulary learning.

Yasin (2002) investigated the effects of computer-assisted instruction on the second graders learning English in the District of Bani Kinanah. The participants in the study were fifty female second grade pupils randomly chosen from Hatem Basic School for Girls. The sample was divided into two groups, experimental and control. The experimental group were taught via computer, whereas the control group were taught with the traditional method. The software used was Action Pack 1. The findings of the study indicated that using CALL is very efficient in helping second graders learn English.

Abu-Seileek (2004) designed a CALL program and tested its effect on Jordanian students’ writing ability in English. The study attempted to find any statistical differences between the mean scores on the writing task of the experimental and control groups. The participants of the study were first grade secondary students. The instrument of this study was a computer-based program Win Word 2002, whose main function was to check and correct spelling, style and grammar errors. The study revealed that students who used the computer to learn writing skills achieved higher scores than those who studied by the traditional method.

Almekhlafi (2006) investigated the effect of CALL on elementary school students’ achievement and their attitudes towards learning English in the United Arab Emirates. 83 elementary students in Al-Tamayoz Elementary prep school were selected and divided into experimental and control groups (43 and 40 participants respectively). The findings revealed that the students in the experimental group had a positive attitude towards CALL. The findings also showed that CALL affected students’ achievement positively.

Fellner and Apple (2006) utilized student blogs in a CALL program of low-proficiency and low-motivation Japanese university language students during a seven-day English language course in September 2004. The program included computer-based tasks and tasks in the traditional classroom. The researchers described the students’ writing gains by the number
of words and their frequency level in the students’ blogs at the beginning and at the end of the program. The researches found out that there was a 350% increase in the number of the words used in the students’ blog entries by the end of the CALL program.

Hages (2008) investigated the effect of a computer supported collaborative learning (CSCL) environment on fifth graders’ writing performance and outcomes. 34 students participated in a real-world writing project, taking on alternative roles of journalists and editors in creating a school newspaper. Both groups were engaged in the writing task. The CSCL group was supported by a web-based software knowledge forum, whereas the control group used paper and pencil. Students were observed and interviewed. The findings showed that CSCL group had significant gains and they were more motivated than the control group.

Bani-Hani (2009) investigated the effectiveness of a computerized instructional program for teaching English as a foreign language in Jordanian basic stage schools. The study also investigated the teachers’ and students’ opinions about computer-assisted language learning (CALL). The sample of the study consisted of 73 sixth grade students in two sections and 100 basic school teachers. The researcher used an achievement test for both the experimental and control groups. He also used an opinionnaire for both teachers and students in the experimental group to investigate their opinions towards using computers in teaching and learning English.

The results of the study revealed statistically significant differences in the students’ achievement in favor of the experimental group. The results also revealed that teachers and students had the inclination to use computers in teaching and learning English as a foreign language.

These studies conducted to investigate the effect of computer-assisted writing programs showed a positive influence on EFL students’ achievements. This gives an indication that the researcher’s (WbWIP) program may affect students’ writing positively.

**Studies on web-based writing**

Tsou, Wang and Li (2002) investigated the effect of a web-based writing program “My Access”. The sample was 49 university students from southern part of Taiwan. The post-test scores were analyzed using ANCOVA. A questionnaire was used and teacher interviews were collected and analyzed. The findings showed that students who used the web-based writing program got better gains than the regular writing group in most variables, especially in “content”, “development”, and “organization. This study does not show interaction and collaboration among students.

Al-Jarf (2004) investigated the effect of online learning on struggling ESL college writers. The participants were 113 ESL female freshmen students in two classes at the College of Languages and Translation, King Saud University enrolled in a writing 1 course. They were divided into two classes: control and experimental. The control group was taught with traditional writing instruction, whereas the experimental was exposed to a combination of traditional and online (web-based) writing. Both groups were pre-tested. Test results showed significant differences between the two groups. The control groups covered the in class material. The experimental group used an online course from home. The experimental group posted their paragraphs, stories, and poems. They located information in sites like “Yahoo Movies”. They processed their paragraphs and checked their spelling. At the end of the course, both groups were post-tested. They wrote an essay. ANCOVA results showed
significant differences between both groups in favor of the experimental group. They were more proficient, made less errors and they could communicate.

Yang (2004) investigated the effectiveness of using ‘My Access’ in three different contexts. Her study involved 300 subjects from freshman English classes, English composition classes, and one class from a self study program. She found that, although a majority of the students felt positive toward the automated essay grading tool, they pointed out that the fixed, repeated feedback became meaningless to them. Nearly 90 percent of the students that participated in the study agreed that they liked the web-based program because it allowed them to go back and revise their essays. Around 85 percent of the students reported that they liked receiving a score directly after submitting an essay.

Chuo (2007) investigated the effects of the Web Quest Writing Instruction (WQWI) program on Taiwanese EFL learners’ writing performance, apprehension and perception of web resource integrated language learning. The participants were college students. One class received traditional learning and the other received the WQWI program. The findings showed that the students in the WQWI class improved their writing performance significantly more than the traditional class. Also the WQWI class showed significant reduction in writing apprehension. Moreover, students had a favorable perception of the WQWI program reorganization and more language learning progress through web resources. This study does not show that there was interaction among students and between students and the teacher. It looks into the effect of integrating web resources. It also looks into an EFL writing instruction. It does not touch on collaboration and discussion among students.

Wooley (2007) examined the effects of web-based peer review on students’ writing within an online, asynchronous peer review system. Participants included 114 students selected from 10 sections of a sophomore-level educational psychology course at Midwestern State University. The course is usually taken by all education majors during the second year of the four year program. Males composed 46% of the sample (n = 53), and females composed 45% of the sample (n = 61). The study sought to illuminate distinctions between different types of reviewing and reviewer preparation, namely the effects of feedback elaboration and the effects of providing examples of helpful and unhelpful feedback. Results indicated that students who provided elaborate forms of feedback with free form comments performed significantly better on writing than students who provided numerical ratings only. The results also indicated that review-first groups did not perform better than write-first groups. Using video and text chat discourse gave higher speaking skill results, followed by listening, reading and finally writing skills.

Taking the previous studies into consideration the following may be inferred:
1. Most researchers are optimistic about the use of the computer and Internet in teaching and learning.
2. Most researchers consider the computer and the Internet an effective teaching tool which can be used to teach English language writing.
3. The use of the Internet may produce higher achievement than the current technique.
4. The use of the Internet may result in positive students’ attitudes towards technology and school.
5. The Internet is a rich source of information where students can benefit a lot in learning writing.

In short, these studies stress the positive effects of using the web and computers in teaching writing. None of these studies was conducted to investigate the effect of the Internet
on the students’ writing performance in Jordan. Therefore, this study comes to fill the gap. It may provide EFL teachers with a suitable way that they can employ technology to teach writing skills effectively.

Methods and procedures

This section presents the methods and procedures that were used to conduct this study. It includes participants of the study, variables, research instruments, procedures, statistical analysis, data collection and data analysis procedures.

Participants of the study

Four public schools in Irbid Second Directorate of Education were chosen purposefully to form the participants of the study. The sample of the study consisted of eight eleventh grade scientific classroom sections (just two sections from each school) during the second semester of the academic year 2009-2010 as follows:
1. Four male scientific sections: two were experimental and the other two were control (n = 52).
2. Four female scientific sections: two were experimental and the other two were control (n = 70).

The participants are 17-year old students.

Instrument of the study

The researcher used the following instrument:

The achievement test

The researcher developed an achievement test to measure the students’ writing before and after participating in the study. The participants of the study were given a composition topic to write on in one period at the onset of the study, and the same topic was used as a post-test at its outset.

The test was developed depending on the general guidelines and curriculum outcomes for the eleventh grade, and it was corrected according to the Ministry of Education criteria for correcting composition.

The instructional program (WbWIP)

The WbWIP is a website that was created through the website (www.forum5.info) on which one can establish a forum after signing the agreement provided on the web pages concerning registration. Log in, objectives, outcomes, instructions, schools and lessons were also designed. This on-line program which was developed by the researcher allows students in grade eleven to write and teachers to track students’ writing progress over time.

1. Objectives:
The specific objectives of the web-based writing instructional program are the following:
1. To write three paragraphs for some specific purposes benefiting from the electronic
environment through access to the Internet for gathering information and ideas from electronic resources. Screen 3 presents the objectives of the WbWIP.

2. To write these paragraphs with correct spelling, punctuation, grammar and usage.
3. To write these paragraphs with appropriate organization.

2. General grade outcomes
   It is expected that students will:
   1. gather information and ideas from electronic sources to organize and write in some advanced authentic contexts.
   2. write three paragraphs for some specific advanced authentic purposes.
   3. use appropriate organizational patterns to create advanced authentic written work.
   4. apply knowledge of the conventions of language (e.g. spelling, punctuation, grammar and usage).
   5. revise written work for accuracy, clarity, correctness and coherence with the assistance of peers and teachers. Screen 4 presents the general grade outcomes of the WbWIP.

3. Instructions for the teacher
   2. Log in with username and password and email.
   3. Display subject to write on the web page.
   4. Ask students to send ideas to you.
   5. Filter these ideas and send them to all students.
   6. Ask students to write the first drafts.
   7. Correct the first drafts and send them back to students.
   8. Answer students’ questions through dialogue individually or whole class.
   9. Ask students to write the final drafts and send them to you.
  10. Correct the final drafts and send them back to students. (Screen 5)

4. Instructions for students
   2. Write on the given topics. (Screen 6)
   3. Discuss, correct, omit and send drafts to the teacher or peers.
   4. Communicate with the teacher outside the program through email. Screen 6 presents instructions for students.

Teachers’ and students’ training
The researchers trained the teachers of English who participated in teaching WbWIP for two days. They received training concerning the WbWIP components: registration, log in, objectives, outcomes, instructions, schools, lessons, editing and correction and receiving and sending messages through email and the chat box. Teachers of the control group taught the discoursal program in the traditional way.

Students of the experimental group were also trained to write using the WbWIP, whereas students of the control group were taught to write in the current technique.

The researchers attended the teaching-learning process to guarantee that the outcome would be reliable and valid.
Instructional treatment
1. First, students register for the WbWIP (screen 1).
2. A student browses the web and gets access to the web-based writing program (WbWIP) by the username and password (Screen 1).
3. Then he/she logs in to start work. (Screen 2).
4. A student reads the objectives, outcomes of the program and the students’ instructions. Then he/she selects the required subject.
5. A student browses the web and gets ideas from the related subjects. He/she shares these ideas with his/her peers. After that, he/she sends them to the teacher who filters them (omits the irrelevant ones) and sends them back to the students.
6. Next, each student writes his/her first draft, sends it to his/her peers and the teacher. Students benefit from the feedback they receive from their peers and teacher.
7. Then they write the final draft after they check their mistakes and errors (if any) and they can consult with their peers and teacher concerning any point by using email.
8. The teacher checks and corrects the final drafts and sends them back to the students.
9. A student reads the teacher’s instructions and then chooses the lesson that he/she is going to write on.
10. The teacher discusses certain points with his/her students and sends any important points to them. He/She answers his/her students’ questions, revises their work, checks and corrects their drafts and sends them back with suitable feedback.

Concerning the control group, students discussed the main ideas orally with their teachers as a pre-writing stage and a kind of warm up. Then they were asked to set their ideas after brainstorming. The students then wrote the first draft which was checked and corrected by the teacher who went around, checking and giving feedback. Finally, students wrote their final drafts and gave them to the teacher. Some subjects were read and discussed.

With both groups, the control and experimental, the teacher acted as a facilitator, helper and supervisor.

The components of the writing program and the evaluation criteria were the following:

A. Content: 30 points
   1. Thesis statement
   2. Relevance
   3. Exposition

B. Organization: 20 points
   1. Coherence
   2. Cohesion

C. Vocabulary: 20 points
   – Wording

D. Language use: 30 points
   – Grammaticality

Average 100

Validity of the achievement test
The validity of the achievement test was gained by giving the test to a group of university
professors, supervisors and experienced teachers to express their views and give suggestions. Modifications concerning the given ideas were done according to their recommendations.

**Reliability of the achievement test**

To achieve the test reliability the researcher chose a sample consisting of 30 eleventh scientific grade students from Al-Husn Secondary School for Girls and administered the test on them. After two weeks, the test was administered on the same students again. The correlation between the two tests was calculated. The reliability of the test was found to be (0.81). This group of students was excluded from the participants of the study.

**Reliability and validity of the web-based writing instructional program**

The WbWIP was given to a group of university specialists in instructional technology to express their opinions. Modification concerning the number, title of the web pages and the place of the chat box was done according to their suggestion.

The WbWIP was piloted. A group of 20 eleventh scientific grade students other than the participants of the study used this program. They wrote about six subjects. No problems arose. Modifications concerning the title of the web pages and the chat box were done.

**Procedures of the study**

To carry out this study, the researchers followed the following steps:

1. Permission was taken from Irbid Second Directorate of Education to conduct the study.
2. The participants were given the pre-test on the onset of the study to measure their achievement on the writing program components.
3. The post-test was given on the outset of the study to measure students’ achievement on the same components of the writing program.
4. The reliability of the two tests was obtained by test and retest procedure.
5. The researchers met the teachers and students included in the experimental group and trained them to use the program.
6. The researcher visited teachers of the experimental and control groups to offer help if needed.
7. The students of the experimental group were taught by the WbWIP, whereas the control group were taught with the current technique.
8. Students were given six topics to write on.

**Design of the study**

The researchers designed a web site using www.forum5.info that contains registration and log in, objectives, outcomes, teacher’s instructions, student’s instructions, lessons, schools, Chat box and post. This website has the following capabilities:

1. This web site supports the permission and authentication so each user has a username and password, thus he/she has his own data, lessons, and so on.
2. It supports different types of users (Student, Teacher, and Administrator), so the process of teaching and learning is complete.
3. It has a calendar, so that the web site users can organize their works, and search depending on certain data.
4. It has a help function to explain all the web site topics, and how can the user change
the settings of user preferences, posting issues, formatting and topics type, user level and groups, private messaging, and other issues.

5. It has the capability to search for topics, lessons, and posts, so this will enable the website users to easily retrieve what they store.

6. The web site also browse all the members and groups, so the user can get information about them to make the contact process easy.

7. This web site has the ability to create groups, which is considered one of the most important methods to share information between users.

8. It has the ability to edit, assess, and correct the assignment and post replies, the correction and assessment to the user.

9. It has the ability of sending email, so all the users can exchange the messages and information among them.

Variables of the study

This study had the following variables:

1. The independent variables were:
   a) The method of teaching which has two levels: web-based writing instructional program and current technique.
   b) Gender.

2. The dependent variables were the students’ achievement scores on the post-test.

Data collection

The data for this study were collected from four secondary schools, two for boys and two for girls in Irbid Second Directorate of Education. Each school has a computer lab linked to the Internet. The researchers applied the pre-test at the onset of the program and the post-test at the outset and recorded the students’ scores. The experiment started on the first of February 2009. It lasted for two months (16 normal classes, 6 sessions were assigned for writing subjects, the other sessions were assigned for training teachers, students, giving the pre-test, giving the post-test and registration for the web-based program.).

Moreover, the researchers observed the whole experiment for both the experimental and control group to guarantee the right implementation of the web-based writing instructional program.

Data analysis

The researcher used quasi experimental design to analyze the results of the study. Both the control and the experimental groups were given the same test before and after the study to measure the differences in the achievement of the students’ writing.

The data of the pre-test and post-test were calculated for statistical analysis (SPSS). Means and standard deviations for the students’ overall achievement scores were calculated for control and experimental groups to help answer the first question.

ANCOVA analysis was used to answer the questions concerning interaction between gender and treatment. MANCOVA analysis was used to determine whether the discoursal components had effects on group and gender. ANCOVA was used to determine which discoursal component had the significant effect on group and gender.
Results of the study

This section presents the results of the study which investigate the effect of using a web-based writing instructional program on the Jordanian eleventh grade students’ achievement.

Results related to the first question

To answer the first research question, “Are there any statistically significant differences in eleventh graders’ mean scores on the English writing achievement test due to the technique of teaching, gender, and interaction between them?”, means and standard deviations were calculated for the students’ overall achievement scores on the pretest and post-test for the control group and the experimental group for both males and females. In addition, adjusted means for the students’ overall achievement scores on the English writing post-test and their standard errors were calculated. To determine the significance of the observed differences, ANCOVA was used to analyze the means of the students overall achievement on the English writing post-test according to the independent variables: group and gender, after excluding the effect of means of the pre-test as shown in Table 1.

Table 1: ANCOVA Results for the Overall English Writing Scores of the Post-test due to Group and Gender

<table>
<thead>
<tr>
<th>Posttest source</th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial η²</th>
</tr>
</thead>
<tbody>
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<td>16875.647</td>
<td>1</td>
<td>16875.647</td>
<td>79.842</td>
<td>0.000</td>
<td>40.6%</td>
</tr>
<tr>
<td>Group</td>
<td>944.742</td>
<td>1</td>
<td>944.742</td>
<td>4.470</td>
<td>0.037</td>
<td>3.7%</td>
</tr>
<tr>
<td>Gender</td>
<td>1610.600</td>
<td>1</td>
<td>1610.600</td>
<td>7.620</td>
<td>0.007</td>
<td>6.1%</td>
</tr>
<tr>
<td>Group * gender</td>
<td>798.092</td>
<td>1</td>
<td>798.092</td>
<td>3.776</td>
<td>0.054</td>
<td>3.1%</td>
</tr>
<tr>
<td>Error</td>
<td>24729.577</td>
<td>117</td>
<td>211.364</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>44750.402</td>
<td>121</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1 shows that there is a significant difference at (α = 0.05) between the two adjusted mean scores of the overall English writing achievement post-test in favor of the experimental group, learned with the web-based writing instructional technique compared with the control group who learned with the current technique with a size effect (practical significance) of 3.7%.

Table 1 also shows a significant difference at (α = 0.05) between the two adjusted mean scores on the overall achievement scores of the English writing post-test in favor of females as compared with males with a practical significant value of 6.1%. However, Table 1 does not show a significant difference at (α = 0.05) on the post-test due to the interaction between group and gender.

Results related to the second question

To answer the second question, are there any significant differences in eleventh graders mean scores on the English writing achievement test due to the discoursal techniques “content, organization, and mechanics”, vocabulary and language use? Mean scores and standard deviations of the discoursal components of the pre-test and post-test for the independent variables (group and gender) were calculated, The adjusted mean scores and standard errors were also calculated as shown in Table 2.
Table 2: Means, standard deviations, adjusted mean and standard error of achievement scores on the discourse components for the two groups and gender on the post-test

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Group</th>
<th>Gender</th>
<th>Pretest (covariate)</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mean</td>
<td>Std. dev.</td>
</tr>
<tr>
<td>Content</td>
<td>Control</td>
<td>Male</td>
<td>18.808</td>
<td>6.37</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>22.771</td>
<td>6.04</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>21.082</td>
<td>6.44</td>
</tr>
<tr>
<td></td>
<td>Treatment</td>
<td>Male</td>
<td>14.577</td>
<td>7.34</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>14.143</td>
<td>9.60</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>14.328</td>
<td>8.64</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>16.692</td>
<td>7.13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>18.457</td>
<td>9.07</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>Male</td>
<td>14.328</td>
<td>8.64</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>18.457</td>
<td>9.07</td>
</tr>
<tr>
<td>Organization &amp; mechanics</td>
<td>Control</td>
<td>Male</td>
<td>13.692</td>
<td>4.44</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>16.571</td>
<td>3.91</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>15.344</td>
<td>4.35</td>
</tr>
<tr>
<td></td>
<td>Treatment</td>
<td>Male</td>
<td>11.500</td>
<td>4.68</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>11.343</td>
<td>6.77</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>11.410</td>
<td>5.93</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>12.596</td>
<td>4.65</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>13.957</td>
<td>6.08</td>
</tr>
<tr>
<td>Vocabulary</td>
<td>Control</td>
<td>Male</td>
<td>13.500</td>
<td>3.57</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>17.514</td>
<td>2.98</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>15.803</td>
<td>3.79</td>
</tr>
<tr>
<td></td>
<td>Treatment</td>
<td>Male</td>
<td>11.654</td>
<td>5.32</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>10.600</td>
<td>7.11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>11.049</td>
<td>6.38</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>12.577</td>
<td>4.58</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>14.057</td>
<td>6.44</td>
</tr>
<tr>
<td>Language use</td>
<td>Control</td>
<td>Male</td>
<td>19.423</td>
<td>7.13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>20.714</td>
<td>6.64</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>20.164</td>
<td>6.82</td>
</tr>
<tr>
<td></td>
<td>Treatment</td>
<td>Male</td>
<td>14.923</td>
<td>8.82</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>11.486</td>
<td>8.40</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>12.951</td>
<td>8.68</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>17.173</td>
<td>8.26</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>16.100</td>
<td>8.84</td>
</tr>
</tbody>
</table>

Table 2 shows that there are observed differences among the mean scores of the discourse components of the post-test: (content, organization and mechanics, vocabulary and language use) due to group and gender. To determine which kind of analysis of variance to use (ANCOVA or MANCOVA), the researcher computed Pearson correlation among the discourse components of the post-test and Bartlett’s test was used to ensure the significant correlations due to the two independent variables of the study: group and gender as shown in Table 3.
Table 3: Pearson correlation for the discourse components of the post-test and Bartlett’s Test results according to group and gender.

<table>
<thead>
<tr>
<th>Pearson correlation</th>
<th>Content</th>
<th>Organization and mechanics</th>
<th>Vocabulary</th>
<th>Language use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content</td>
<td>1</td>
<td>0.201</td>
<td>0.483</td>
<td>0.475</td>
</tr>
<tr>
<td>Organization mechanics</td>
<td></td>
<td>0.201</td>
<td>1</td>
<td>0.037</td>
</tr>
<tr>
<td>Vocabulary</td>
<td>0.483</td>
<td></td>
<td>0.212</td>
<td>0.529</td>
</tr>
<tr>
<td>Language use</td>
<td>0.475</td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bartlett’s Test of Sphericity</th>
<th>Likelihood ratio</th>
<th>Approx. $\chi^2$</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.000</td>
<td>204.735</td>
<td>9.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Table 3 shows that there is no significant proportion at $\alpha = 0.05$ among the discourse components of the post-test according to the independent variables: group and gender. Therefore, the researcher used MANCOVA after excluding the effect of the pre-test mean scores of the discoursal components as shown in Table 4.

Table 4: Results of MANCOVA for the discoursal components of the post-test according to the independent variables: group and gender.

<table>
<thead>
<tr>
<th>Effect</th>
<th>MANOVA test</th>
<th>Value</th>
<th>F</th>
<th>Hypothesis</th>
<th>F</th>
<th>Error df</th>
<th>Sig.</th>
<th>Partial $\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content (covariate)</td>
<td>Wilks’ Lambda</td>
<td>0.859</td>
<td>4.574</td>
<td>4</td>
<td>111</td>
<td>0.002</td>
<td>14.1%</td>
<td></td>
</tr>
<tr>
<td>Organization and mechanics (covariate)</td>
<td>Wilks’ Lambda</td>
<td>0.985</td>
<td>0.424</td>
<td>4</td>
<td>111</td>
<td>0.791</td>
<td>1.5%</td>
<td></td>
</tr>
<tr>
<td>Vocabulary (covariate)</td>
<td>Wilks’ Lambda</td>
<td>0.773</td>
<td>8.126</td>
<td>4</td>
<td>111</td>
<td>0.000</td>
<td>22.7%</td>
<td></td>
</tr>
<tr>
<td>Language use (covariate)</td>
<td>Wilks’ Lambda</td>
<td>0.598</td>
<td>18.619</td>
<td>4</td>
<td>111</td>
<td>0.000</td>
<td>40.2%</td>
<td></td>
</tr>
<tr>
<td>Group</td>
<td>Hotelling’s Trace</td>
<td>0.298</td>
<td>8.264</td>
<td>4</td>
<td>111</td>
<td>0.000</td>
<td>22.9%</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>Hotelling’s Trace</td>
<td>0.928</td>
<td>2.150</td>
<td>4</td>
<td>111</td>
<td>0.079</td>
<td>7.2%</td>
<td></td>
</tr>
</tbody>
</table>

Table 4 shows that there is a significant effect at $\alpha = 0.05$ for the independent variables of the study (group and gender) on the mean scores of the discoursal components of the overall achievement of the post-test, so ANCOVA analysis was used to determine which component had the effect according to group and gender after excluding the effect of the components of the pre-test as shown in Table 5.

Table 5 shows that there is a significant difference at ($\alpha = 0.05$) between the two adjusted mean scores for the discoursal component “content” of the post-test due to group in favor of the experimental group, who were taught with the WbWIP compared with the control group, who were taught with the traditional technique, with a practical significant value 16.1%.

Table 5 also shows that there is a significant difference at ($\alpha = 0.05$) between the two adjusted mean scores of the discoursal components: “content” and “vocabulary” of the post-test due to gender in favor of females as compared with males with a practical significant value of 21.4% for “content” and 4.8% for “vocabulary”.

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Table 5: Results of ANCOVA for the discoursal components of the post–test due to group and gender

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Source</th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial $\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content</td>
<td>Content (covariate)</td>
<td>293.573</td>
<td>1</td>
<td>293.573</td>
<td>15.105</td>
<td>0.000</td>
<td>11.7%</td>
</tr>
<tr>
<td></td>
<td>Organization and mechanics (covariate)</td>
<td>3.529</td>
<td>1</td>
<td>3.529</td>
<td>0.182</td>
<td>0.671</td>
<td>0.2%</td>
</tr>
<tr>
<td></td>
<td>Vocabulary (covariate)</td>
<td>97.213</td>
<td>1</td>
<td>97.213</td>
<td>5.002</td>
<td>0.027</td>
<td>4.2%</td>
</tr>
<tr>
<td></td>
<td>Language Use (covariate)</td>
<td>54.913</td>
<td>1</td>
<td>54.913</td>
<td>2.826</td>
<td>0.096</td>
<td>2.4%</td>
</tr>
<tr>
<td></td>
<td>group</td>
<td>424.521</td>
<td>1</td>
<td>424.521</td>
<td>21.843</td>
<td>0.000</td>
<td>16.1%</td>
</tr>
<tr>
<td></td>
<td>gender</td>
<td>602.611</td>
<td>1</td>
<td>602.611</td>
<td>31.007</td>
<td>0.000</td>
<td>21.4%</td>
</tr>
<tr>
<td></td>
<td>group * gender</td>
<td>25.139</td>
<td>1</td>
<td>25.139</td>
<td>1.294</td>
<td>0.258</td>
<td>1.1%</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>2215.578</td>
<td>114</td>
<td>19.435</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>4982.459</td>
<td>121</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organization and mechanics</td>
<td>Content (covariate)</td>
<td>0.126</td>
<td>1</td>
<td>0.126</td>
<td>0.001</td>
<td>0.972</td>
<td>0.0%</td>
</tr>
<tr>
<td></td>
<td>Organization and mechanics (covariate)</td>
<td>140.864</td>
<td>1</td>
<td>140.864</td>
<td>1.416</td>
<td>0.237</td>
<td>1.2%</td>
</tr>
<tr>
<td></td>
<td>Vocabulary (covariate)</td>
<td>4.571</td>
<td>1</td>
<td>4.571</td>
<td>0.046</td>
<td>0.831</td>
<td>0.0%</td>
</tr>
<tr>
<td></td>
<td>Language use (covariate)</td>
<td>16.674</td>
<td>1</td>
<td>16.674</td>
<td>0.168</td>
<td>0.683</td>
<td>0.1%</td>
</tr>
<tr>
<td></td>
<td>group</td>
<td>3.183</td>
<td>1</td>
<td>3.183</td>
<td>0.032</td>
<td>0.858</td>
<td>0.0%</td>
</tr>
<tr>
<td></td>
<td>gender</td>
<td>80.028</td>
<td>1</td>
<td>80.028</td>
<td>0.805</td>
<td>0.372</td>
<td>0.7%</td>
</tr>
<tr>
<td></td>
<td>group * gender</td>
<td>432.974</td>
<td>1</td>
<td>432.974</td>
<td>4.353</td>
<td>0.039</td>
<td>3.7%</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>11339.139</td>
<td>114</td>
<td>99.466</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>12325.344</td>
<td>121</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vocabulary</td>
<td>Content (covariate)</td>
<td>0.790</td>
<td>1</td>
<td>0.790</td>
<td>0.061</td>
<td>0.806</td>
<td>0.1%</td>
</tr>
<tr>
<td></td>
<td>Organization and mechanics (covariate)</td>
<td>6.297</td>
<td>1</td>
<td>6.297</td>
<td>0.484</td>
<td>0.488</td>
<td>0.4%</td>
</tr>
<tr>
<td></td>
<td>Vocabulary (covariate)</td>
<td>103.661</td>
<td>1</td>
<td>103.661</td>
<td>7.962</td>
<td>0.006</td>
<td>6.5%</td>
</tr>
<tr>
<td></td>
<td>Language use (covariate)</td>
<td>10.226</td>
<td>1</td>
<td>10.226</td>
<td>0.785</td>
<td>0.377</td>
<td>0.7%</td>
</tr>
<tr>
<td></td>
<td>group</td>
<td>37.987</td>
<td>1</td>
<td>37.987</td>
<td>2.918</td>
<td>0.090</td>
<td>2.5%</td>
</tr>
<tr>
<td></td>
<td>gender</td>
<td>75.593</td>
<td>1</td>
<td>75.593</td>
<td>5.806</td>
<td>0.018</td>
<td>4.8%</td>
</tr>
<tr>
<td></td>
<td>group * gender</td>
<td>8.197</td>
<td>1</td>
<td>8.197</td>
<td>0.630</td>
<td>0.429</td>
<td>0.5%</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>1484.276</td>
<td>114</td>
<td>13.020</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2356.926</td>
<td>121</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Language use</td>
<td>Content (covariate)</td>
<td>4.768</td>
<td>1</td>
<td>4.768</td>
<td>0.230</td>
<td>0.633</td>
<td>0.2%</td>
</tr>
<tr>
<td></td>
<td>Organization and mechanics (covariate)</td>
<td>1.080</td>
<td>1</td>
<td>1.080</td>
<td>0.052</td>
<td>0.820</td>
<td>0.0%</td>
</tr>
<tr>
<td></td>
<td>Vocabulary (covariate)</td>
<td>144.842</td>
<td>1</td>
<td>144.842</td>
<td>6.973</td>
<td>0.009</td>
<td>5.8%</td>
</tr>
<tr>
<td></td>
<td>Language use (covariate)</td>
<td>1342.529</td>
<td>1</td>
<td>1342.529</td>
<td>64.635</td>
<td>0.000</td>
<td>36.2%</td>
</tr>
<tr>
<td></td>
<td>group</td>
<td>1.887</td>
<td>1</td>
<td>1.887</td>
<td>0.091</td>
<td>0.764</td>
<td>0.1%</td>
</tr>
<tr>
<td></td>
<td>gender</td>
<td>19.229</td>
<td>1</td>
<td>19.229</td>
<td>0.926</td>
<td>0.338</td>
<td>0.8%</td>
</tr>
<tr>
<td></td>
<td>group * gender</td>
<td>30.084</td>
<td>1</td>
<td>30.084</td>
<td>1.448</td>
<td>0.231</td>
<td>1.3%</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>2367.881</td>
<td>114</td>
<td>20.771</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>6296.885</td>
<td>121</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Discussion, conclusions, implications and recommendations

This study was an attempt to find out the effect of the WbWIP on the students’ writing performance. The study aimed to answer the questions involving variables: gender and teaching technique as independent variables and the students’ achievement on the writing test as independent variables.

Discussion of the results of the first question

The results of the study showed that there was a significant difference between the experimental group and the control group in favor of the experimental group on the achievement of the post-test which may be attributed to the technique: the web-based writing instructional program.

The results revealed that the achievement of the experimental group was higher than the achievement of the control group. The ANCOVA analysis shows that there is a significant difference at ($\alpha = 0.05$) with practical significance of 3.7%.

The researcher’s claims that these differences in the students’ achievement may be attributed to the utilization of the web-based writing program are for the following reasons:

1. The program was presented in an easy and interesting way. It does not require advanced computer skills and students enjoy working using the web.
2. The direct feedback given to students had an influence on motivating the students with different achievement levels.
3. The interaction and communication among students themselves and with teachers might influence students’ writing positively.
4. Students might consider the web-based writing program as a new experience, so they exerted their efforts to learn using this method.
5. The writing input in the WbWIP was comprised of the materials found on the Internet. Students read a lot of relevant material about the topic. The reading to writing approach observed in the WbWIP is supported by Krashen (1985), who believes that the best way to learn to write is to obtain rich and comprehensive reading input. Research on second language reading and writing also suggests that learners may improve their writing ability if they are exposed to reading texts (Abu Rass, 2001). Therefore, students in the experimental group outperforming their counterparts in the control group may be because the former read a lot of relevant web materials for the purpose of communicating their ideas in writing, whereas the control group had a teacher-directed oral discussions held in a regular classroom.

The results of this question also showed that there was a significant difference at ($\alpha = 0.05$) in the students’ achievement in the post-test due to gender in favor of females as compared with males, with practical significant value of 6.1%.

The researchers claim that female students worked more seriously than male students. The researchers have this impression from their own experience at schools and university. Females exert more effort to prove that they have capabilities to do all kinds of work. The researchers noticed that most of the high scores were achieved by female students.
Discussion related to the results of the second question

The results show that there is a significant difference in the mean scores at $\alpha = 0.05$ in the students’ achievement of the post-test in favor of the experimental group concerning the discourse component “content” as compared with the control group. The practical significant value is 16.1%. The researchers believe that the experimental group benefited a lot from the related content they got from the web compared with the control group who could refer to the teacher only for certain points. The following are examples that support the researcher’s claim. Student number 45 wrote the following in the pre-test:

I am writing degrad suggestion has been made that we money should be spent equemet for the school al thowy alvanbys and disadvantays. can taclue advantang from the internet.

The student himself wrote the following in the post-test:

Dear...

I am going to write a bout the idea you have given us for the computer. I completely agree with this idea the computer is very important in our school because it saves time and effort in learning.

The following is another example written by student number 25 in the pre-test:

I am write to think you fore give us ehane to talk about our opinion a bout how to spent the money. I thing spent all at compute not correct becase other protries which move important than it they hape.

The same student wrote the following in the post-test:

I thank you so mush because you gave us this wide chanc to share our suggestion to spend money at computer equipment. I think spending all money on computer equipment is wrong because there are things more important, like our laboratory.

Students also wrote one or two-paragraph compositions in the pre-test, but they wrote better compositions of three or four paragraphs in the post-test.

This technique of teaching and learning (WbWIP) helped students to get good progress in one of the discoursal components “content”. There was improvement in the other discoursal components, (organization, vocabulary, language use) but such an improvement of WbWIP was not statistically significant. This supports Papert’s (1996) claim that computer technology should be used to strengthen a poor technique of teaching and not to be a framework of the school system.

Moreover, one of the reasons why both of the groups did not show significant differences in the improvement of the discoursal components other than “content” may be due to the fact that students did not receive enough training to use the appropriate structure, vocabulary and organization before the application of the program. A second reason might be due to teachers’ concentration on “content” rather than accuracy during their teaching of writing, leaving students to write freely, without giving guidance concerning the discoursal components. So students need to be trained to write. A third reason might be due to the insufficient writing activities accompanying the school EFL textbook. It seems that the current ineffective technique of teaching writing, such as giving the students the topic required and providing them with the Arabic equivalents of vocabulary items needed may
result in students’ weakness in writing. Thus, students need to be exposed to more writing tasks, so that they can get the appropriate improvement.

The experimental group’s achievement was better than the achievement of the control group in favor of females in all discoursal areas. The researchers believe that students of the experimental group had a better chance of getting “content” and “vocabulary” items and language use quickly and easily from the websites and from their peers and teachers through sending and receiving messages, but this was not available for the control group. The result of the first question is a kind of development for what Smadi and Al-Abed Al-Haq (1995), and Al-Abed Al-Haq and Al-Sharah (1997) recommended for adopting the discoursal components as a guide for teaching writing. The significant differences concerning the “vocabulary” and “content” which came in favor of females might be attributed to the following reasons:

2. They exert more effort than males.
3. They take the writing task seriously.

It is clear that female students in the experimental group used many vocabulary items in the post-test which they did not use in the pre-test. They used them meaningfully. This supports the researcher’s claim that referring to the Internet increases the students’ vocabulary items as they experienced these vocabulary items in the web information and used them in similar contexts. The following is a list of vocabulary items female students in the experimental group used in the post-test:

“Era, technology, accurate, chat, medicine, benefits, transaction, classmate, seriously, proposal, laboratory, curriculum, characteristics, aspect, fitness”.

The following are examples of students’ meaningful sentences:

1. We can use computers in library, laboratory and classroom.
2. Computers will improve the academic level in schools by putting them in the following locations.
3. Computers are important in all aspects of life.
4. I am writing to express my opinion towards your suggestion.

The results of this study do not agree with Braine (1997) that the traditional setting promotes more improvement in writing than using the networked computers.

In spite of this disagreement, the results are in line with Yang (2004) who found that the experimental group taught via computer had a better performance than the control group taught in the traditional method; Al-Jarf (2004) who found that online learning for ESL college students improved their writing; Chuo (2007) who found that students benefited from the WQWI program; Tsou (2008) who found that the web-based program was helpful to students in improving their writing skill and Tsou, Wang and Li (2008) who adopted the web-based writing program (My Access) and found that students who used the web-based writing program outperformed the regular teaching.

In light of the results of the study, the researcher can maintain that the use of the Internet may support the process of teaching and learning the writing skill. Moreover, it may enhance the students’ writing level.
**Pedagogical implications**

Based on the results of the study, the following implications can be drawn:
1. The Internet could be a useful tool in TEFL in teaching the writing skill.
2. The Internet could help shy students to participate through sending messages to peers and teachers.
3. The Internet might help learners by facilitating the process of learning through communication, interaction, and direct feedback.
4. Teachers and instructors should be trained to teach writing via Internet at schools and universities.
5. Discoursal programs could be computerized and taught via Internet to help students develop an efficient composing process through writing.
6. Universities should provide a writing course via Internet.
7. The Ministry of Education should train both teachers and students to use the Internet in writing composition.
8. The Ministry of Education should provide computerized material for teaching writing via Internet.

**Recommendations for further research**

Based on the results of the study, the researcher suggests the following recommendations:
1. Research should be conducted to investigate the effect of the Internet on the other English language skills (Listening, Speaking and Reading).
2. A similar study should be conducted to investigate the effect of a web-based writing skill of other classes and streams in other parts of Jordan.
3. A similar study should be conducted at the university level.

**References**


Appendix A

The adopted rubrics for evaluating students’ writing

<table>
<thead>
<tr>
<th>Criterion/level</th>
<th>Content</th>
<th>Organization and mechanics</th>
<th>Vocabulary</th>
<th>Language use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very good</td>
<td>– complete realization of the task</td>
<td>– well organized</td>
<td>– demonstrate a wide range of vocabulary</td>
<td>– mostly accurate</td>
</tr>
<tr>
<td></td>
<td>– relevant</td>
<td>– clear, coherent</td>
<td></td>
<td>– few mistakes</td>
</tr>
<tr>
<td></td>
<td>– communicative</td>
<td>– mechanics of writing are well observed</td>
<td>– effective use of word choice idioms…etc</td>
<td>– communication</td>
</tr>
<tr>
<td>Good</td>
<td>– noticeable fluency</td>
<td>– organized ideas are partially clear and coherent</td>
<td>– reasonable use of vocabulary to convey a message</td>
<td>– isn’t impeded</td>
</tr>
<tr>
<td></td>
<td>– mostly relevant</td>
<td>– ideas are partially clear and coherent</td>
<td>– shows a reasonable use of writing mechanics</td>
<td>– occasional errors</td>
</tr>
<tr>
<td></td>
<td>– message can be understood</td>
<td></td>
<td></td>
<td>– no global errors</td>
</tr>
<tr>
<td>Acceptable</td>
<td>– no complete realization of task</td>
<td>– loosely organized</td>
<td>– limited range of vocabulary</td>
<td>– frequent grammatical errors</td>
</tr>
<tr>
<td></td>
<td>– lack of ideas</td>
<td>– no noticeable coherence</td>
<td>– no effective use of vocabulary to convey a message</td>
<td>– use of one straight pattern</td>
</tr>
<tr>
<td></td>
<td>– not communicative but meaning is conveyed</td>
<td>– frequent errors in the mechanics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor + (Fail)</td>
<td>– irrelevant ideas</td>
<td>– disconnected ideas</td>
<td>– little use for vocabulary</td>
<td>– global grammatical errors</td>
</tr>
<tr>
<td></td>
<td>– not communicative</td>
<td>– not organized</td>
<td>– vocabulary is insufficient to convey meaning</td>
<td>– no mastery of sentence structure</td>
</tr>
<tr>
<td></td>
<td>– not conveyed message</td>
<td>– no use of writing mechanics</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix B

Some screens of the study

Screen 1: Registration

wbwip.forum5.info

Screen 2: Log in
Screen 3: View and choose
Screen 4: Objective of the program

<table>
<thead>
<tr>
<th>Author</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admin</td>
<td>Subject: Objectives  13/10/2009, 5:30 am</td>
</tr>
</tbody>
</table>

Objectives:

The specific objectives of the Web-based Writing Instructional Program are the following:

1-To write three paragraphs for some specific authentic purposes benefiting from the electronic environment through the access to the Internet for gathering information and ideas from the electronic resources.

2-To write these paragraphs in correct spelling, punctuation, grammar and usage.

3-To write these paragraphs in an appropriate organization.

Screen 5: General grade outcomes

<table>
<thead>
<tr>
<th>Author</th>
<th>Message</th>
</tr>
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<tbody>
<tr>
<td>Admin</td>
<td>Subject: General grade outcomes  13/10/2009, 5:30 am</td>
</tr>
</tbody>
</table>

General grade outcomes

It is expected that students will:

1- gather information and ideas from electronic sources to organize and write some advanced authentic contexts.

2- write three paragraphs for some specific advanced authentic purposes.

3- use appropriate organizational patterns to create advanced authentic written work.

4- apply knowledge of the conventions of language (e.g. spelling, punctuation, grammar and usage).

5- revise written work for accuracy, clarity, correctness and coherence with the assistance of peers and teachers.
Screen 6: Instructions for the teacher

Instructions for the teacher

1. Brows www.WBWIP.forum5.info

2. Login through user name and password and email.

3. Display subject to write on the web page.

4. Ask to discuss the topic and send ideas to you.

5. Filter these ideas and send them to all students.

6. Ask students to write the first drafts.

7. Correct the first draft and replay them to students.

8. Answer students’ questions through dialogue individually or whole class.

Screen 7: Lessons (1–6)
Screen 8: A lesson plan

A Web-Based Writing Instructional Program

A lesson Plan for the WSWIP

### A lesson Plan for the WSWIP

<table>
<thead>
<tr>
<th>Author</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admin name</td>
<td></td>
</tr>
</tbody>
</table>

**Topic:** Computer Equipment for your school

**Directions:** Write about 150 words about the topic.

**Outcomes:**
1. Write 3 paragraphs about the topic benefiting from the electronic resources.
2. Write these paragraphs in correct spelling, punctuation, grammar and usage.
3. Write these paragraphs in an appropriate organization.

**Process:**
1. Gather information.
2. Exchange ideas.
3. Write the first draft.
4. Write the final draft.

**Note:** Follow the instructions of the program.