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AKDENIZ UNIVERSITY INSTITUTE OF EDUCATIONAL SCIENCES DEPARTMENT OF FOREIGN LANGUAGE EDUCATION ENGLISH LANGUAGE TEACHING

THE EFFECT OF COMPUTER-BASED TESTS ON STUDENTS' WRITING PERFORMANCE

MASTER'S THESIS

Havvana Asma

Antalya

June, 2015

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AKDENIZ ÜNİVERSİTESİ EĞİTİM BİLİMLERİ ENSTİTÜSÜ YABANCI DİLLER EĞİTİMİ ANABİLİM DALI İNGİLİZCE ÖĞRETMENLİĞİ

BİLGİSAYAR TABANLI SINAVLARIN ÖĞRENCİLERİN YAZMA BECERİSİNE ETKİSİ

YÜKSEK LİSANS TEZİ

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Bu çalışma jürimiz tarafından Yabancı Diller Eğitimi Anabilim Dalı'nda YÜKSEK LİSANS TEZİ olarak kabul edilmiştir.

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Yüksek lisans / Doktor tezi olarak sunduğum bu çalışmayı, bilimsel ahlak ve geleneklere aykırı düşecek bir yol ve yardıma başvurmaksızın yazdığımı, yararlandığım eserlerin kaynakçalardan gösterilenlerden oluştuğunu ve bu eserleri her kullanışımda alıntı yaparak yararlandığımı belirtir; bunu onurumla doğrularım. Enstitü tarafından belli bir zamana bağlı olmaksızın, tezimle ilgili yaptığım bu beyana aykırı bir durumun saptanması durumunda, ortaya çıkacak tüm ahlaki ve hukuki sonuçlara katlanacağımı bildiririm.

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ABSTRACT

THE EFFECT OF COMPUTER-BASED TESTS ON STUDENTS' WRITING PERFORMANCE

Asma, Havvana MA, Foreign Language Teaching Department Supervisor: Assoc. Prof. Dr. Binnur Genç İlter June 2015, 91 pages

Writing is one of the skills in which most of EFL students have difficulty. To help students improve their writing skills, there has been a shift from traditional techniques to more innovative ones like integrating technology into writing instruction and these applications have yielded better results. However, in the assessment of writing, the advantages of technology have not been fully used. There are a few studies on whether students can perform better on computer-based writing tests. Therefore, the purpose of this study is to find out whether computer-based tests can improve students' performance in writing tests. The study adopted both qualitative and quantitative approaches. A quasi-experimental design was used as the research method. 36 prep class students at B1 level at Akdeniz University School of Foreign Languages participated in the study as control and experimental groups. In the beginning of the study, both of the groups took the same writing test on paper as pre-test. Then, every week for two months, the experimental group took an exam on computer while the control group took the same exam on paper. At the end of this period, the experimental group took the post-test on the computer and the control group did it on paper. The pre and post test scores of both groups were analysed through SPSS. According to results of the analysis, the effect of computer based test on students' writing performance was positive, though not statistically significant. Students in the experimental group were also asked to write a reflection on how they felt about taking computer-based writing tests. It was observed that they had positive attitudes towards this testing mode.

Key words: Computer-based tests, paper-based tests, writing skill

ÖZET

BİLGİSAYAR TABANLI SINAVLARIN ÖĞRENCİLERİN YAZMA BECERİSİNE ETKİSİ

Asma, Havvana Yüksek Lisans, Yabancı Diller Eğitimi Bölümü Tez Yöneticisi: Doç. Dr. Binnur Genç İlter Haziran 2015, 91 sayfa

Yazma becerisi, İngilizce'yi yabancı dil olarak öğrenen birçok öğrencinin zorluk çektiği becerilerden bir tanesidir. Öğrencilerin yazma becerilerini geliştirmek için, geleneksel yöntemlerden teknolojiyi yazma öğretimine entegre etmek gibi daha yenilikçi yöntemlere bir geçiş yaşanmaktadır ve bu uygulamalar daha iyi sonuçlar doğurmuştur. Ne var ki henüz yazma becerisinin değerlendirilmesinde teknolojiden tam olarak yararlanılmamıştır. Öğrencilerin bilgisayar tabanlı yazma sınavlarında daha iyi performans gösterip gösteremediklerine dair de az sayıda çalışma yapılmıştır. Dolayısıyla, bu çalışmanın amacı, bilgisayar tabanlı sınavların öğrencilerin yazma sınavlarındaki performansını ilerletip ilerletmeyeceğini ortaya koymaktır. Çalışma nitel ve nicel yaklaşım izlemiştir. Araştırma yöntemi olarak yarı deneysel metot kullanılmıştır. Akdeniz Üniversitesi Yabancı Diller Yüksekokulu hazırlık sınıflarından B1 seviyesindeki 36 öğrenci, çalışmaya deney ve kontrol grubu olarak katılmıştır. Çalışmanın başında her iki grup da aynı yazma sınavını kâğıt üzerinde ön test olarak almıştır. Sonrasında, iki ay boyunca her hafta, kontrol grubu kâğıt üzerinde bir sınav olurken, deney grubu aynı sınavı kâğıt üzerinde almıştır. Bu süreç sonunda, deney grubu son testi bilgisayar üzerinde, kontrol grubu ise kâğıt üzerinde almıştır. Her iki grubun da ön test ve son test puanları SPSS kullanarak analiz edilmiştir. Analiz sonuçlarına göre, bilgisayar tabanlı sınavların öğrencilerin yazma performanslarına etkisi, istatistiksel olarak anlamlı olmasa da, olumlu olmuştur. Deney grubundaki öğrencilerden aynı zamanda bilgisayar üzerinde yazma sınavı olma konusunda nasıl hissettiklerini yazmalarını istenmiştir. Öğrencilerin bu sınav şekline karşı olumlu tutum içinde oldukları gözlenmiştir.

Anahtar kelimeler: Bilgisayar tabanlı sınavlar, kağıt üzerinde sınavlar, yazma

becerisi

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CHAPTER I

INTRODUCTION

1.1 Statement of the Problem

In the Turkish Education System, students start learning English in the 2nd grade. This means that a student who has just started university has been learning English for eleven years. This time span is long enough for a student to be fluent and competent in English. Unfortunately, the students who are in prep classes of most universities are not able to convey even the basic information about themselves in English, let alone speaking and writing about any topic. There are some reasons for this. A study carried out by Dincer, et.al (2010, p, 240) summarized the reasons for the failure in English language teaching as "teachers' individual characteristics, their field knowledge and teaching capabilities, students' not giving importance to courses and their low motivation levels, poor curricula, insufficient course hours and materials in schools, artificial language environments and lastly negative peer factor". Ilter and Guzeller (2005) also concluded that the absence of "a cross-cultural approach" in the teaching practice prevents students from being more conscious in the process.

In the prep classes of Akdeniz University, there are three proficiency levels (A2, B1 and B2) which are determined by Council of Europe (CoE). The students of Civil Aviation are expected to achieve A2 level, the students of other departments of 4-year-faculties are aimed to be at B1 level and the students of English Language Teaching and English Language and Literature should have a proficiency of B2 level by the end of the prep year. However, the biggest difficulty most of the students at all levels have is with writing although lots of writing practices like portfolios and

online management system are employed. They cannot express themselves or their ideas using the correct grammatical structures, vocabulary and appropriate organizational patterns. They even perform worse in the exams. It may be because of the exam pressure or the lack of self-confidence, literacy level and proficiency. A possible way to relieve the stress they have during the examinations could be to change the delivery mode of the tests. As they are more confident and secure with computer use, this could be a good opportunity to let them show a better confidence in writing tests via computers.

1.2 Purpose of the Study

As technology is gaining more importance and having a bigger role in our lives, a shift from traditional teaching and testing methods to innovative and technological is getting more inevitable. Although integration of technology is prevalent in the teaching process, the computers are not efficiently and commonly used in the testing stage. Computers can be made use of in delivering tests as well as in planning teaching activities to enhance especially the writing skill of the students. The primary concern of this study is to reveal whether computer based writing tests could be a better test mode to help students produce texts of higher quality.

1.3 Research Questions

Considering the purpose mentioned above, this study aims to answer the following research question: Do computer-based writing tests contribute to the improvement of the learner's writing skills? To be able to this, following sub questions will be answered:

- Is there a significant difference between pre and post test scores of the control group?
- 2. Is there a significant difference between pre and post test scores of experimental group?
- 3. Is there a significant difference between post-test scores of control and experimental groups?
- 4. Which aspect of writing (format, punctuation, content, organization, grammar) has the experimental group improved?
- 5. What kind attitudes do the students have towards computer-based writing tests?

1.4 Limitations

The main limitations of the study are the number of participants and the short period of time in which the tests were applied. The study was carried out with thirty six prep-class students with a time span of 8 weeks. To get more accurate results the study could be done with more participants during at least one semester. In addition, a standardized test could be used rather than the proficiency test which is prepared by the prep school itself.

1.5 The Importance of the Study

Technology, especially the computers, have turned out to be the greatest assistants of language teaching. They foster innovation, motivation and creativity. Though their integration into the EFL classroom has been increasing day by day, they have not been fully benefited from in testing and assessment practices yet. Some studies have been conducted on comparability of students' performances via computer and paper

based tests, but there needs to be more studies done in different contexts and learner levels. This study may provide insights into further studies or more common applications of computer tests which could be beneficial for both students and institutions and teachers. This study can also be a good incentive for authorities to have more testing software developed to be used at schools. Depending on the results of the study, the testing and assessment system especially for writing skill could be enhanced to a more practical and productive level.

CHAPTER II

LITERATURE REVIEW

This chapter aims to present an overview of literature by focusing on the main approaches in teaching writing skill and the integration of technology in writing classes. This chapter also highlights testing and evaluation of writing skill.

2.1 Introduction

In teaching English as a foreign language, one of the main objectives is to help learners achieve four basic skills; listening, speaking, reading and writing, which are all essential to deal with so as to be able to communicate well in another language. Those skills are usually grouped in two as receptive (listening and reading) and productive (speaking and writing) skills and they are all integrated into each other. Wilkins (1990) states, the process of transferring linguistic knowledge from receptive to productive requires time but it eventually occurs in the same way that first language is acquired.

Receptive skills are the ones that learners need to be able to deduce the meaning through reading or listening to texts that are the mediums by which learners are provided with the presentation of language items. However, according to one of the linguists Gabrielatos (1995), the prime objective of a receptive skills programme is not actually the teaching of grammar and vocabulary, but fostering the development of the learners' ability to understand. Consequently he maintains that the procedures should be organized in such a way that the language items do not outweigh the skills. For example, explaining all unknown words before learners read or listen to a text will prevent students from improving their ability to infer the meaning and

vocabulary in the text. Krashen (1982) explains the relation between input in receptive skills activities and development of other language skills as follows:

Real language acquisition develops slowly, and speaking skills emerge significantly later than listening skills, even when conditions are perfect. The best methods are therefore those that supply "comprehensible input" in low anxiety situations, containing messages that students really want to hear. These methods do not force early production in the second language, but allow students to produce when they are "ready", recognizing that improvement comes from supplying communicative and comprehensible input, and not from forcing and correcting production (p. 11).

After receiving necessary input from different sources by employing receptive skills, learners make use of productive skills, which are necessary to produce the language both orally and in written form. As McDonough and Show (2003, p. 133-134) maintained, "people need to speak to express ideas and opinions, express a wish or desire to do something, negotiate or solve problems or establish and maintain social relations." Similarly writing involves all these purposes in addition to sharing information and social contact.

No matter whether it is receptive or productive, each skill requires special attention for a learner to be able to communicate in the target language. Here raises the question as to whether those language skills should be taught together or separately. "Even if it sometimes makes sense to target specific language skills so as to master each of them, best practices suggest that instructors should pursue the goal of addressing all skills at the same time because language learning can occur

naturally and serve communication functions" (Hoopingarner, 2009, p. 228). Besides, in real life, it is not possible to consider four skills independent from each other since most language skills are followed by another skill. A text is written for someone else to read and a person speaks for others to listen. After a text is read or listened, it may be even necessary to write or talk about it.

There are two types of instructions to integrate skills: content-based and task-based. In content-based instruction, learners focus on the content using the language and task-based instruction aims to presents tasks in which learners need to use the language communicatively. Content-based instruction uses activities requiring communicative skills through content, such as science, art, architecture, etc. Contentbased language instruction can be used at all levels of proficiency with a difference in the content used. In beginner level, the content might deal with some basic communication skills while the content to teach in advance levels can range from social issues to academic themes in a complex discourse. Task based instruction is based on target-like communicative tasks and activities in which students are not explicitly exposed to grammar teaching (Rahimpour, 2008). According to Skehan (1998, p. 95), "the kind of task or activity used in this instruction should include some properties like meaning being primary, existence of a real life like communication problems to solve and be assessed in terms of outcome." The tasks can range from writing class newspaper and preparing a television advertisement to acting in a play which all require collaboration and interaction among the students with simultaneous use of two or more skills. The performance of the tasks fosters learners' freedom and autonomy.

Of all four language skills, writing is the one which learners find the most demanding. According to Hyland (2003), the challenge of writing stems from the

requirement that writers should interpret linguistic forms included in different sorts of texts. At the higher levels, writing tasks turn out to be even more challenging as English is in more academic context.

Technology has been an indispensable component of our daily lives in many ways. It has changed not only the way we live, but also the way we teach and learn. As Tuman (1992, p. 5) states, it "reshapes not just how we read and write and, by extension, how we teach these skills, but our very understanding of basic terms such as reading, writing, and text". With the advances in technology, the methods and techniques used in EFL classrooms have been varied. The introduction of ICT (Information Communications Technology) has helped foreign language teaching experience drastical changes in the organization of the tasks that teachers plan and in the collaboration between teacher and students (Baghari et al., 2012). According to Grabe & Grabe (2005), ICT is functional in that students feel more comfortable and they are actively involved in the process as technology is a helper to them rather than an instructor. In shorter terms, technology proves to be an effective tool in classes when used properly and in a planned way.

There have been many studies on the benefits of technology in classrooms. In one of them, Roberts and Carter (1988) point out that technology motivates students by providing a wide range of materials, makes the lesson more individualized for the students, improves students' problem solving abilities, makes some difficult points easier to understand with the help of visuals like photos and videos and finally provides feedback.

Similarly, another study which was carried out by Sewell (1990) suggests that technology is a very effective tool to improve social interaction among students,

encourages students to use different strategies by providing them with a variety of tasks and challenges students.

As technology has been an indispensable part of teaching process and the students prefer spending time with the computers more, technology could be benefited even in assessment stage. As technology is an indispensable tool to help students improve their writing skills, it can also be adapted to assessment of language. Computer-Based Tests (CBT) have started to get more popular than Paper-Based Tests as they have lots of benefits like quicker and easier scoring, different types of tasks with the contribution of the computers and saving time, money during application (Wang & Shin, 2009). Therefore there has arisen a question as to whether CBT and PBT can be compared. Before making a comparison between these two modes, some factors such as demographic features, computer familiarity, computer characteristics should be taken into consideration (Wang & Shin, 2009). The use of computers in testing has caused lots of worry about whether the scores of students in computer-based and paper-based tests are relevant. It has been a matter of interest whether students' performance in using the grammar, vocabulary and spelling accurately, organizing their ideas and sentences can be effected or improved with the test mode.

2.2 Main Approaches in Teaching Writing

2.2.1 The Product Approach

The product approach can be said to be a traditional approach which aims at reproducing the sample texts (Nunan 1996). According to Nunan (1999), target in this approach is to produce a coherent and error-free text by copying, imitating or transferring models which are given by textbooks or teachers. This approach requires students' following the standard in the supplied text as a model. According to Steele

(2004), there are four stages in this approach. In the first stage, students are given a model to read and the aspects of the genre are pointed out. For instance, if a formal letter is studied, the language required can be emphasized. Similarly, if the genre is story, the techniques used by the writer to make it interesting are focused. Second stage is comprised of highlighted features with controlled practice. For example, if the formal letter is being studied, students practice the language like "I would be grateful if you could..." for formal requests. In the third stage, students organize their ideas. The fourth stage is the one in which product of the learning process emerges. Students use the language or grammar they have learned to produce.

There are many linguists who fancy this approach. Badger and White (2000, p. 157) favours this approach emphasizing that learners can be better writers by learning the linguistic knowledge of the texts through imitation. Arndt (1987, p. 257-67), another proponent of this approach, states that "the models used contribute to analysis and exploration in addition to imitation." According to Saeidi & Sahebkheir (2011), models can raise students' familiarization with style, vocabulary, organization and structure of writing. Myles (2002) further contends that students may continue making the same errors in their writing unless they are provided with authentic or native-like written texts.

However, this approach also has some drawbacks. Tribble (1996) mentions lack of creativity as one of the disadvantages of this approach since the activities have similar characteristics. Thus students do not like writing tasks, they turn out to be a chore rather than a form of expression. According to Reid (1982), this approach regards writing as composed of exercises which ask students to put or rearrange words into grammatical sentences and paragraphs, thus students' ability to remember and use of grammar is highlighted. Tangkiengsirisin (2012) states that in product-

oriented writing instruction feedback focuses on grammatical errors and how students generate ideas and reader-based discourse is ignored.

2.2.2 The Process Approach

Main concern of this approach is how a text is written rather than the final product. The writing process is valued more but this does not mean that learners do not produce a written text. Brown (2001, p. 336) maintains that students brainstorm and think then create the written product. Kroll (1990, p. 220-221) defines process approach as follows:

The "process approach" serves today as an umbrella term for many types of writing courses What the term captures is the fact that student writers engage in their writing tasks through a cyclical approach rather than a single-shot approach. They are not expected to produce and submit complete and polished responses to their writing assignments without going through stages of drafting and receiving feedback on their drafts, be it from peers and/or from the teacher, followed by revision of their evolving texts.

Applebee (1986, p. 96) argues that this approach "provided a way to think about writing in terms of what the writer does (planning, revising, and the like) instead of in terms of what the final product looks like (patterns of organization, spelling, and grammar)." Consequently it can be said that the process approach is student-centered in which their learning styles, skills, interests are of great importance and they should be comfortable with expressing their ideas and feelings in written discourse with the help of the instructor (Onozawa, 2010). Writing is not something to be taught but learned, thus instruction should be nondirective and personal

(Hyland, 2003). Teacher is only an agent who helps learners' potential to come out. White& Arndt (1991) define the teacher's role as follows:

The teacher, instead of being cast merely in the role of linguistic judge, now becomes a reader, responding to what the students have written; the students, rather than merely providing evidence of mastery of linguistic forms, proffer experiences, ideas, attitudes and feelings to be shared with the reader.(p. 2)

Myles (2002) alleges that the process approach proves to be efficient only when feedback is provided, by this way, learners have opportunity to reflect and look for input while they reorganize their plans, ideas and language.

The writing process involves different procedures. It is necessary to motivate students to write. They can set a purpose to write, consider their potential audience, determine a main idea then develop details to use in their writing (Boyle and Peregoy, 2005). While they are brainstorming ideas, learners do not worry about mistakes and this lessens the burden by helping them be more confident to develop ideas. In this sense, Fulwiler (1996) maintains that error-free early drafts are not expected outputs. Focus should be rather on such issues as topic, organization, and evidence then mistakes with spelling, punctuation and grammar because these could be especially handled in the following drafts. Hedge (2005) also features the significance of content stating that a characteristic of good writers is to care for the content first and then correct grammar, punctuation and spelling mistakes. In the revision stage, the learners look for the ways of improving their written pieces in terms of content and organization. After revising, learners check their mates' and their own writing for grammar mistakes this time. Tribble (1996) adds that using

rubrics or checklists which is prepared considering learner's levels and objectives can guide them what grammar point they should focus while editing. As for teacher's feedback, Brown (2001) proposes that teachers do not correct the mistakes directly, rather they mark them and let the learners correct. Likewise, teachers can recommend linkers or vocabulary to enhance cohesion. Once the editing is completed, sharing or publishing the written works is an essential stage. To Tompkins (1990), having a real audience like peers, society or parents can build up sense of communication and help learners gain confidence in writing.

This approach can be effective in many ways when compared to the other approaches in teaching writing. Even though this approach does not focus on form, revising stage can help students to achieve accuracy in their texts (Zamel, 1987). The focus is on the writing process differently from the product approach which emphasize the product (Nunan, 1991). He also mentions another benefit of this approach highlighting increased motivation and development of positive attitudes towards writing with the help of collaborative group work among learners.

According to Brown (2001), the product approach involves copying a given model text paying attention to such mechanical features as grammar, spelling and punctuation whereas the process approach requires students to go through stages by providing them with an opportunity to think as writers. He agrees with Raimes (1983) who states that by this way, students turn out to be creators of language so they should pay more attention to content and meaning with their internal motives to discover new ideas. Britton (1978, p. 23) is of the same idea that ...new insights can occur at almost any time during the process.

However, one of the points that this approach is criticized for is that it ignores grammar and form and undervalues the final product. Reid (2001, p. 29) expresses this as follows:

... in the 1980s, they developed a false dichotomy between "process" and "product" classrooms in the L2 pedagogy. Process teachers encourage students to use their internal resources and individuality... they neglected accuracy in favor of fluency. In contrast, it was suggested that product teachers focused solely on accuracy, appropriate rhetorical discourse and linguistic patterns to the exclusion of writing processes. . . In reality, most L2 students were being taught process writing strategies to achieve effective written communication (products), with differences occurring in emphasis.

Onozawa (2010) points out that accuracy is as important as fluency to be able to use the language communicatively therefore ignoring grammatical forms and accuracy makes this approach unable to satisfy learner's real needs. To Atkinson (2003), as the approach's main concern is just the process, social and cultural aspects are omitted, which makes the writing skill deficient in forming different types of writing.

2.2.3 Genre Based Approach

As Swales (1990, p. 58) defines, genre is "a class of communicative events, the members of which share some set of communicative purposes". This approach can be said to be on functional and authentic base so the teacher is expected to supply a sample with a focus on purpose, organization and readers (Paltridge, 2001) and then to help the students grasp the reason and context of writing because the more students are exposed to written models, the better understanding of genres they

develop and they can make use of this knowledge while producing texts in a specific genre. Social context is of outmost importance. (Badger & White, 2000). According to Knapp & Watkins (2005, p. 9), "genre based approaches to writing are based on a functional model of language; that is, a theoretical perspective that emphasises the social constructedness of language".

One of the most significant characteristics of this approach is that students explicitly learn structures of the texts and the rationale behind how they are written (Hyland, 2007). This approach is clear to help students get the basics of writing skills, it systematically highlights language and context, students' needs are taken into consideration while setting the course objectives, teachers have the chance to support students' creativity, it challenges the students with varied discourses and it helps teachers give better feedback on their writing thus making them more conscious (Hyland, 2004).

There are also some drawbacks in this approach. It is hard for students to differentiate between the knowledge of the text and social aspect as this approach is made up of these two elements (Paltridge, 2001). Other opponent of this approach, Swales (2000), claims that how the students express themselves is undervalued as reader is the main focus.

In this approach there are four stages: familiarization, controlled, guided and free writing.

Familiarization is 'preparing students for actual writing by demonstrating one or other of the skills that are to be practised' (Pincas, 1982, p.78). The exercises in this step help students become aware of what type of writing they will do. Hyland (2003)

states that providing students with the instruction of certain grammar points and vocabulary within a context is necessary to provide familiarization to the students.

Controlled writing activities are the ones which are essential in the first stages of the writing. According to Raimes (1983), these activities are instrumental as they help students acquire content and form. As stated by Handayani, et.al (2013) main concerns in controlled writing are grammatical structures, word order and punctuation and teachers help students produce a text based on the information provided. Albesher (2013) states, the exercises in this stage have two main types of tasks. In one of these, students join words by either matching or re-ordering. In the other, students imitate language items with teacher's guidance. As Ferris and Hedgcock (2005) state students can also be assigned to apply some changes to the given paragraph (like rewriting the paragraph in present tense). The teacher can also provide instructions on how to make structural changes in the texts (Reid, 1993).

Guided writing helps students write their paragraphs with some help of the teacher and by looking at a model they are provided with. It is not as limited as controlled writing in terms of sentence forms and vocabulary exercises (Reid, 1993). Oczkus (2007) adds that guided writing is more than individual writing practice; in contrast, it is a kind of collaborative work in which learners form their ideas and texts; therefore, guided writing activities paves the way for students to turn into independent writers as these activities diagnose the stage of learners in writing development correctly, push them to the following stage and gift them with special instruction to improve their writing skills. Hill (1999) supports him with stating that students can be presented with mini lessons to focus on some features of language such as text type, structure or other mechanics. Reading texts are models which are related to guided writing and some templates can be used as scaffold for writing.

Lan (2011) explains the basics of guided writing as integrating web-assisted teaching aids and materials to facilitate writing. Mingli (2012) points out the significant contribution of guided writing activities to building a sound platform for learners to improve and like writing.

Free writing activities do not include teacher help in students' writing process. As Mingli (2012) states, the students at this stage are the ones who have already acquired basic language skills and can produce texts on the assigned topic within alloted time.

2.2.4 Constructivism and Writing Instruction

The rationale behind the constructivist theory, which was first introduced by Russian psychologist Lev Vygotsky (1978), is the close relation between social interaction and learning. Ozer (2004) emphasizes that learning a language, in its nature, is a social improvement, made up of the elements like real world, interaction and collaboration among learners. In this theory, learners are not viewed as recipients of the instruction that the teacher provides, rather they are regarded as the learners who construct knowledge by interacting with others and using their prior knowledge so the language instruction should be "something meaningful and relevant to the students' life and effective literacy instruction is meant to utilize students' prior knowledge, connect with their life experiences and build new knowledge upon them" (Zhu, 1998, p. 240). When they construct the information by themselves, they understand it better.

Constructivism inspires the students to associate their abilities to solve their problems and their experiences with what they are producing in language; moreover, the teacher provides activities for the students to be able to reflect on their pre-

existing knowledge (Khalid, 2012). The learners make use of some strategies to get the new information by "analyzing data to detect patterns, forming and testing hypotheses, and integrating new knowledge with previous understandings" (Rueda & Garcia, 1996, p. 314). In this sense, teachers are in the role of assistants of learners in addition to being providers of information (Christie, 2005).

According to Setyono (2014), teachers should make sure that the learners develop strategies to apply for writing a wide range of text types (personal letters, notes, letters) for different purposes and they should also be a good observer of student's progress using different ways of assessment such as portfolio, peer and self-assessment through which students are more actively involved in both learning and assessment process. The assessment is not made with the purpose of seeing to what extent the learners remember the knowledge provided, instead, to what extent the learners' knowledge has improved. (Atasoy, 2004 cited in Arslan, 2009).

As Duffy, Lowyck, and Jonassen (1993) state, a constructivist instruction has eight characteristics:

- real life is represented in many ways
- how complex the real world is also emphasized
- knowledge is preferred to be constructed to reproduction
- social aspects of knowledge are valued
- authentic texts are used in meaningful contexts
- project- and task-based learning activities are designed with regards to real life
- learners are stimulated to self-reflect
- content knowledge is provoked

2.3 Use of Technology in EFL Classes

The role of the computers and the Internet is significant as it is the easiest and the most convenient medium of communication around the world. Since the motive of language learning is to be able to communicate, technology cannot be considered as separate from language learning. Furthermore, it is a clear fact that students like spending time with computers so it is a sensible improvement to integrate computers into learning process to enhance learning. As there are numerous benefits of technology in language teaching, there has come out an area called CALL, namely Computer Assisted Language Learning.

2.3.1 CALL (Computer Assisted Language Learning)

Main purpose of CALL is to make use of computers to improve the quality of language learning. There are many things to do with computer to contribute to language learning. According to Kearsley (1983, p. 195) "CALL includes the use of simulations, drills, tutorials, word processing, authored programmes, games, database search/inquiry methods and programmed instruction".

2.3.2 Advantages of CALL

One of the contributions of CALL is that it provides authentic language because they feel the sense of communication as there is a target audience and real life like tasks; moreover, students are presented with a wide range of materials which teachers would not provide otherwise (Khamkhien, 2012). This variety is a factor which keeps students motivated. There are so many fun and interesting activities with sounds and images that students gain an enjoyable as well as educational experience. Their affective filters are lowered, they are not afraid of making mistakes and they

have less anxiety. The students who normally get bored in traditionally taught classrooms get more enthusiastic with this kind of activities. Furthermore, these visuals or audios make some complicated points more understandable to students. Thus, learning turns out to be more effective. Students have different needs and sometimes teachers may not meet them all in a crowded class. However, as Warschauer & Kern (2005) state, students deal with the authentic tasks individually in CALL and they learn to use their time efficiently and interact with their mates. By this way learning process becomes more student-centred. Self-centred classes, being free from the dependence on the teacher, help students get autonomous. Christopher (2006) demonstrates that dealing with technology helps students to improve their abilities to control things, monitor their own learning and be more involved in learning. CALL provides individualized learning environment so they learn to take responsibility as they can "...develop a psychological relation to the process and content of his learning" (Little, 1991, p.4). Students can manage their own learning process as they have chance to practise or go over the exercises or tasks many times themselves when they need. Another contribution of CALL is that in addition to improving language proficiency, engaging with computers develops students' computer literacy which can help students in their careers later in life (Gündüz, 2005). Sariçoban (2006) points out the contributions of computers to language learning as increased motivation, innovative and interesting learning environment, quick feedback, a wide range of materials to practice language skills, computer literacy, analytical thinking ability, pair/ group work online, autonomy, revision, stimuli to investigate and increase in self-confidence.

CALL also contributes to the teachers in many ways. Teachers do not spend long hours to evaluate students' exams as computers do this for them (Chapelle, 2001).

Teachers can spend their time to prepare some other activities for the class. The teaching becomes easier as there are plenty of resources to make use of. CALL is also a good opportunity for teachers' professional development as they can follow the latest trends in teaching.

2.3.3 Limitations of CALL

There are also some drawbacks of CALL. Being expensive to set up is one major disadvantage. Even after set up, updating is necessary and technical problems can be encountered during the applications. These problems can take long to solve and this can slow down the process. Gips, DiMattia, & Gips (2004) points out that the equity of education can be unbalanced because of financial situations. Another thing is that all of the activities on the computers may not meet the demands of learning process such as pair and group work. Also, looking at the computer screens for a long time can be tiring and discouraging (Özsoy, 2004). AbuSeileek and Sa'aleek (2012) lists the disadvantages of computers:

- It may take time for students who are not competent at using computers to type
- Students' studying on the computers individually may mean isolation, which is not something desirable in language learning
- Computers are just machines, they are not programmed to solve unexpected problems
- Computers cannot provide feedback to open-ended questions
- It takes a long time to develop software

2.4 Integration of Technology into Writing Classes

Writing is one the most challenging skills in learning a foreign language and students have problems with writing as they are oriented to produce accurate texts in grammar, spelling and punctuation rather than the writing process itself (Whiteman, 1981). In a writing class, students should be able to communicate and teachers should develop motivating and fun activities to help the students enjoy writing (Al-Haq, 2010). There are lots of practical technological tools to integrate into writing classes.

2.4.1 Word Processors

As Sani (2012) defines, "A word processor is a computer application mainly used for the composition, production, editing, and printing of any kind of printable text." With the use of these applications, it is possible to save and make necessary changes in the texts. There are some main components of word processors: commands to insert, delete, cut, paste the words and sentences; features like word count, time limit, spell and grammar checker (Hyland, 1993; Piper, 1987).

Word processors have numerous functions. It alleviates the problem of bad hand writing. Students can edit their writing faster and easier. Spelling is improved with spellcheckers. When students are working in groups, it provides a better visibility with a computer screen than a piece of paper (Harmer, 2001).

This application helps self discovery as computers can highlight students' mistakes and they immediately correct them (Kaplan, 1996); consequently the texts produced tend to be free from mistakes. Students' awareness of mistakes can be sparked as they are immediately corrected at the time of writing (Jafarian et al., 2012). Word

processors make students realize the process of writing a text as reviewing and rewriting, students can make any changes in their saved texts by replacing sentences even paragraph easily, which helps better texts come out in the end (Antoniadou, 2009).

In addition to identifying and correcting their mistakes with the help of computers, students can also feel less anxious to make mistakes during writing (Warschauer& Healey, 1998). In his study AbuSeelek (2006) revealed that the use of word processor in writing arouse positive attitude to writing among students and proved to be useful. Similarly, Cunningham (2000) concluded in his study that students feel more comfortable while writing on computers and students focused more on accuracy, spelling and vocabulary resulting in motivation among students to write and as Piper (1987, p. 123-124) proposes that "the word processor seems to inspire a desire for perfection which is manifested in the constant refinement of the text... and also to inspire concentration on the writing process", the quality of students' texts is increased. They can even produce longer texts on computers than they could with pen and paper.

In addition Reinders (2007) highlights one of the contributions of word processors to L2 writing as they solve the problems that could be caused by handwriting and students can see their products on the screen in an objective way.

Some shortcomings can also be observed with word processors. It requires some knowledge and training to be able to use the word processors efficiently. Use of processors can be browbeating for students with poor typing skills. To make better use of word processors, Graham (2008, p. 8) advises teacher some points as follows:

• Make sure students are proficient with the tool

- Teach students how to use the word processor and supporting applications.
- Teach students the keyboard. Make sure teachers do not confuse knowing how to word process with knowing how to write
- Teach students how to review and revise.
- Teach students the strategies, skills, and knowledge they need to be skilled writers and to use technology effectively.

2.4.2 Collaborative Writing

Collaboration means "people working together to achieve goals" (Andersen, 2011, p: 1). In language learning environment collaborative learning is maintained when students who have different performance levels come together in groups to fulfil a task (Gokhale, 1995). When students work in groups to complete a writing task, each one undertakes one stage in the process like brainstorming, organizing, drafting, editing, and this is called collaborative writing (Barkley, et al, 2005). Collaborative writing can be used to discover the relationship of social interaction with learning and feedback (Meihami, et al, 2013). This writing instruction model has been affected by social constructivism theory as it is the theoretical ground of socioconstructivism that for a learner to perform best social interaction with another peer is required. (Lightbown & Spada, 2006). To Vygotsky, learning takes place with the active involvement of people in the process by constructing new knowledge upon experiences with social interaction. As a result, collaboration is an indispensable requirement of learning. Laal and Ghodsi (2012, p.487-488) presents the benefits of collaborative learning in four groups based on list summarized by Johnsons (1989) and Pantiz (1999):

- 1. Social benefits;
- CL helps to develop a social support system for learners.
- CL leads to build diversity understanding among students and staff.
- CL establishes a positive atmosphere for modelling and practicing cooperation.
- CL develops learning communities.
- 2. Psychological benefits;
- Student-centred instruction increases students' self esteem.
- Cooperation reduces anxiety.
- CL develops positive attitudes towards teachers.
- 3. Academic benefits;
- CL promotes critical thinking skills.
- Involves students actively in the learning process.
- Classroom results are improved.
- Models appropriate student problem solving techniques.
- Large lectures can be personalized.
- CL is especially helpful in motivating students in specific curriculum.
- 4. Alternate student and teacher assessment techniques;
- Collaborative teaching techniques utilize a variety of assessments.

With the introduction of computers in language learning, more tools and resources have become available to foster collaborative learning. Wikis and blogs are two most commonly used resources in collaborative writing.

2.4.2.1 Wikis

According to Coniam and Kit (2008: p.1), "a wiki is a hypertext system for storing and modifying information - a database with each page being easily editable by any user through a standard Web browser". Wikipedia is one of most popular wikis of today. Wikis are also accessible; anybody can create a wiki on the net for free using some servers like Wikispaces. Duffy and Bruns (2006, p. 35-36) point out:

- Students can use a wiki to develop research projects, with the wiki acting as ongoing documentation of their work.
- Wikis can be used for students to add summaries of their thoughts from the prescribed readings, building a collaborative annotated bibliography.
- In distance learning environments, the tutor can publish course resources like syllabus and handouts, and students can edit and comment on these directly (for all to see).
- Wikis can be used as a knowledge base for teachers, enabling them to share reflections and thoughts regarding teaching practices and allowing for versioning and documentation; essential to the usability of such a resource is that it is searchable, has easy navigation and categorisation, and file management, all of which current wiki environments provide.
- Wikis can be used to map concepts: they are useful for brainstorming, and authoring a wiki on a given topic produces a linked network of resources.
- A wiki can be used to facilitate a presentation in place of conventional software, like Keynote and PowerPoint, and (given a suitable working environment) students are able to directly comment on and revise the presentation while it takes place.

• Wikis are tools for group authoring: often groups collaborate on a document by sending it on to each member of the group in turn, emailing a file that each person edits on their computer, and some attempt is then made to coordinate the edits so that everyone's work is equally represented; using a wiki pulls the group members together and enables them to build and edit the document on a single, central wikit page

Wikis serve to many functions in education like creating a collaborative environment on the web for students. Wikis are not confined to individuals, instead, they are written with and for others. Consequently they afford social constructivism (Notari, 2003). For a wiki to be considered as good education, it should help social constructivism, scaffolding and collaboration (Marandi, 2011). As writing is a process during which students goes through some stages, it is eased and perfected with interaction with others. Wikis are useful tools to improve writing as they are platforms in which cooperative writing takes place while students edit each other's entries on Wikis (Harmer, 2007, p.329) A case study done by Grant (2006) revealed how Wikis help students cooperate. In the study, students were assigned to write about a topic on wiki. Each member of a group undertook different roles during the writing process; one gathered information, other organized the ideas, another edited. In the end, groups produced texts successfully with a collaborative work.

In a writing class, wikis contribute to teaching and learning process. Teachers can live their comments and corrections easily on wikis. As students hand in their assignments online, this saves time; furthermore students have chance to exchange ideas with their mates and teachers easily (Khoi and Arabsarhangi, 2012). Wikis are

also appropriate communities to give feedback to peers. Wikis are not limited to the classrooms, they can be worked with out of class and this also provides student with an online platform to discuss (Lamb, 2004; Farabaugh, 2007). Wikis also help student develop autonomy as they can exhibit their products on a website which has real authors (Alexander, 2006). Wikis are also user friendly, students who have basic knowledge of computer use can use them easily. In addition there are lots of editorials as to how to use wikis.

2.4.2.2 Blogs

A weblog, with its short form "blog", is an online platform which lets people write and edit their ideas and publicize to others on the Internet (Godwin, 2003). The differences of a weblog from a website page are that posts appear in chronological order, blogs are refreshed every day and they can have links or references to other blog messages or any web resource (Lang, 2003). What's more, people can update the content of their blog in any way they like and they can write about a large range of topics (Tu et. al, 2007). Also they are more communicative and collaborative than websites (Wu&Wu, 2011). "Within a personal academic perspective a blog can support reflection on teaching experiences, categorised descriptions of resources and methodologies for teaching, ramblings regarding professional challenges and teaching tips for other academics, illustration of specific technology-related tips for other colleagues. Within an organisational perspective a blog can support a common online presence for unit-related information such as calendars, events, assignments and resources, an online area for students to post contact details and queries relating to assessment. Within a pedagogical perspective a blog can support comments based on literature readings and student responses, a collaborative space for students to act as reviewers for course-related materials images and reflections related to industry placement, an online gallery space for review of works, writings, etc. in progress, making use especially of the commenting feature teachers encouraging reactions, reflections and ideas by commenting on their students' blogs development of a student portfolio of work." (Duffy& Bruns, 2006: p. 33).

Blogs offer students opportunity to brainstorm, organize and write for real audiences, as a result blogs are essential means to education thanks to their interesting authentic and social features (Pinkman, 2005) As Kennedy (2003, p. 11) states, "web publication gives students a real audience to write to and, when optimized, a collaborative environment where they can give and receive feedback, mirroring the way professional writers use a workshop environment to hone their craft". Blogs can be grouped in three types as tutor blogs, learner blogs and class blogs (Campell, 2003):

Tutor blogs are the ones which teachers prepare to provide students with links for learning resources and reading materials, stored self study links can be used even in the future. Teachers can give announcements about the course and syllabus, and even to assign homework online. With the availability of comment button teacher can spark some discussion topics.

Learner blogs are prepared by the students with free expressions of themselves and can be considered as personal diaries which can be followed and commented by others. Therefore it is a good practice for both writing and reading. Learners can also get feedback from their peers.

Class blogs are run collaboratively by the students of a class and can be used as bulletin board. Generally the teacher is responsible for the blog and students can

write posts forming an environment to share and get feedback. In advanced levels, they can help project-based learning. These blogs can also be transformed into information resources for others.

Blogs can be compared to diaries but they are different in that they are open to everyone in contrast to personal diaries which are confined to individuals themselves. They are good stimulus to write personally (Godwin-Jones, 2008), therefore, they are unique tools for students to nourish their interest and meet personal needs along with enriching their knowledge anywhere and at any time (Yang, 2009). As blogs are flexible to read and check all posts and comments any time, students can track their own progress, make necessary corrections, reflect on their writing thus, develop autonomy (Gedera, 2012). Bakardjieva and Gradinarova (2012) also pointed out that the layout of the blog makes it possible to track the way they think and form ideas over time.

Blogs provide students with opportunity to practise out class as they are available anywhere there is Internet connection at any time. They help students make the content of the course relevant to real life (Bravo, 2014). Blogs contribute to forming social communities in which learners with common interest can share their ideas. While sharing ideas or forming the blogs, students employ their critical thinking skills and aspire to use different forms of language which are incentives for students to improve creativity and thinking critically (Duffy and Bruns, 2006) because blogs require students to think over the things they write and read, relate to resources to defend their ideas (Zhang, 2009).

In a traditional classroom students are not encouraged to check each others' writing. However with the help of the blogs students can read the texts of anyone they like as written texts are kept in an organized way in blogs and they are easy to access at any time (Johnson, 2004). When students know that their posts are read and even commented, they get more eager to write in addition to getting more self-confident (Muangnakin, 2012). As students know that their posts will be read by others, they develop a more careful attitude towards to vocabulary, grammar, spelling, sentence and paragraph organization and the style they use (Fageeh, 2011)

Richardson highlights (2010) some benefits of blogs to learning process. Blogs support constructivism by requiring students to make use their general knowledge and past experiences while writing on an issue. Blogs help students' relationships out of school as they can keep in touch with each other via blog posts. Additionally, blogs support the organization skills with students by letting students store and search the post. As another advantage, blogs can be said to be helpful for shy students who are not usually eager to share their ideas in class. Also, blogs enhances students' knowledge on a topic as they search, read and exchange information about it.

Teachers do not have to deal with lots of paper to check the progress of the students. In addition, it is easier and less time-consuming to check the students' works on a computer screen. Consequently blogs save time and the environment. Moreover, not writing on a hard copy motivates students to write more consciously and carefully (Beeson, 2005).

Finally, blogs help students improve their typing skills as it is one of the most respected skills required in many professions (Tu et al., 2007).

On the other hand, there are some difficulties with using blogs as educational tools. Some students may not want to share their comments for the fear of making mistakes (Domalewska, 2014). Another problem that may arise is that some students cannot provide friendly comments; they can be sometimes destructive and rude in their comments (Gedera, 2012). A study conducted by Chiao (2006) investigated into the perceptions of students on blog use and revealed that students were not willing to post on blogs as they felt no security and privacy in blog use.

2.4.3 E-mails

As defined by Niazi& Pourgharib (2013, p. 2), "electronic mail (email) is a method to transfer electronic messages from one person to one or more other persons".

As Belisle (1996) suggests there are many activities in which e-mails could be used like journal writing, asking and answering questions and making a dialogue with follow-up questions, making announcements, giving assignments, collaborating on a topic to produce a text, editing a given paragraph, writing to peers within a community with a nickname and meeting at the end of semester, chain sentences/ stories, ordering a story puzzle, corresponding with pen pals worldwide.

He also highlights three main benefits of emails in language learning. Firstly, with the practice of email writing, students get more accustomed to this medium of communication which is commonly used all over the world in many areas like business, education and tourism. Secondly, it facilitates the out of class interaction between students- students and students-teacher while working on a project and asking for and giving feedback. As Sattar& Nahrkhalaji (2012) states teachers can give individual feedback to the ones who are especially in need of it. With the confidence that the emails provide, students can ask teachers questions about their learning process, which they would not do in the class, so that the distance between student and teacher is also shortened (Sheer and Fung, 2007) Thirdly, teacher can

assign homework to students after class and can even set reminders or alarms for them to complete the assignments. Assignments are tracked better than traditional hard copy writings as it is possible to see the date and time and observe the layout better; furthermore, when the teacher gives feedback to the students as reply to their e mails, a dialogue is formed online (Iwasaki, 2008).

According to Warschauer (1995), emails give the students the sense of real audience. In addition to their teacher and peers, they can easily communicate with people all around the world about a relevant topic. In addition, the topics are varied or the ones already handled at school are expanded (Ahmed, 2013).

Shy students who do not like interacting with others in the class can also benefit from email activities. As students see that they can communicate via email they get more self-confident in writing and this motivates them to be better writers (Sattar& Nahrkhalaji, 2012). Hui-Fang (2005) agrees with this idea expressing that as a result of active interaction through emails, students get more autonomous and develop interest in learning.

Emails are also profitable to improve relationship between teacher and students. For example, by using e-mails, a teacher can use some social topics like free time activities, create a discussion atmosphere on topics other than the course content or deal with some personal problems (Sheer and Fung, 2007). Additionally, learning turns out to be learner-centred because students can decide on the topic they like or they can discuss the topic in any way they think (Patrikis, 1995).

There are also some shortcomings with the use of emails as a teaching tool. As Weedon (2000: p.186) states, "the opportunity for discussing the comments with the

tutor in a face-to face interaction is in many cases not available" and teachers should arrange meetings with the students.

2.4.4 Social Networking Sites: Facebook

Other tools which teachers can make use of in classes especially to do creative writing are social networking sites. Of all these sites, Facebook is the most popular one which students like spending time with. McCarthy (2010) states that Facebook is instrumental in improving communication and eradicating social obstacles. As Pérez-Sabater (2012, p.83) proposes, "the most interesting characteristic of this site is that it enables a great variety of online genres to be accessed through the same platform; these genres being both synchronous and asynchronous." People can share lots of media like photos, posts, videos on Facebook easily and they do this eagerly so this can be used effectively to help students improve their communication skills in target language.

Facebook can be used in many ways in the classes. For example, students can use "poke" function to make real friends which can yield to new interactions, "event" function to organize events like discussions which makes conversations possible, "group" function to form groups whose members have common interests and likes which makes discussions more authentic. They can share their drafts or projects, their peers can give feedback and by this way they can correct or revise their works considering these comments. They can also share responsibilities to prepare a project or written task online. (Limbu, 2011)

To Fovet (2008), with the use of Facebook, students socializing skills are better improved and it takes less time for them to adapt to school. It makes it possible for students to communicate their opinions, interests, likes and activities as short

messages on their "walls" with their friends, which makes them more sociable (Cloete, Villiers, & Roodt, 2009; Pew,2007). Thus it promotes collaborative learning because during the time spent on Facebook they look at profiles, contact with their acquaintances and new people, they can even communicate with native speakers all over the world (Educause Learning Initiative, 2006).

The absence of face to face interaction makes students less nervous to make mistakes. (Murphy, 2009). The environment is more informal on Facebook than in the class which makes students more comfortable with practicing.

As the interaction is based on reading and writing, "Facebook has a potential to critically engage students and merge their roles as writers and readers in a digital environment" (Limbu, 2011, p. 59). Facebook can be a tool to prepare a task in which teacher forms a page on which students write something about the given topic. Cerda (2012) believes that even if Facebook is not a networking site which is specifically prepared for educational purposes, it can be effectively integrated into language learning as it requires negotiation and collaboration which are essential things for the ability to work in groups. Jack Pillemer (1997) has concluded that emails are exciting, motivating and encouraging tools for writing and teachers should be supported with technical help.

2.5 Assessment of Writing Skill

Assessment is a very important part of teaching process. It is done to certificate, enhance teaching by showing the strong and weak points (Peterson & Irving, 2008). In addition to giving feedback to teachers on their teaching, assessment also improves students' learning process and helps them be more responsible and aware and the variety in testing instruments can help students develop a more positive

attitude towards assessment (Rastgoo & Namvar, 2010). There are many assessment tools but still they can seem inadequate to reflect the real performance of students so teachers have been in search of other assessment methods such as portfolios, self and peer assessment thus promoting constructivism (Han & Kaya, 2014).

Besides being a difficult skill to develop, writing in foreign language is also difficult and challenging to assess. Assessing writing cannot be achieved only by testing the final product, the processes should also be taken in mind (Babaee & Tikoduadua, 2013).

There are two commonly used approaches to score writing performance: holistic and analytical. In holistic scoring, "student work is rated as a complete unit against a prepared scale or rubric and global score is awarded to students response, which may be in the form of a percentage, letter grade, or rating number denoting the level of achievement" (Hunter, et al.,1996, p.62). This type scoring is mostly used in the presence of a lot writing pieces to check as raters give only one score for one piece (Park, 2008). He further contends that giving only one score does not provide details about the students' ability in the specific areas like grammatical use, word choice, content and organization. Here a problem arouses as some students can be better at one of these areas while being bad at others (Wiseman, 2012). As an alternative for this, analytical scoring is used. In this type of scoring, writing pieces are rated using an analytic rubric with these features which make up writing (Weigle, 2002). Consequently they provide detailed information about the writing ability of a student.

There are two types of assessments, one is summative and summative. The assessment done at the end of the course to check what the students learned during the teaching process is called *summative assessment* (Brown, 2004). The final

examinations are examples for this kind of tests. These tests are applied after learning is done with the aim of reporting the success status of the students and give certification (Stiggins, 2005). The results show only to what extent the learning objectives have been achieved by the students; however, as they are carried out at the end of the instruction, they do not provide the students with feedback and they are not guided on how to improve (Ketabi & Ketabi, 2014).

To meet the shortcomings of summative assessment, which is also a stressful burden on students, another one called *formative assessment* can be used. This type of assessment focuses on the process rather than one final product. The best thing about this assessment is that students' products or pieces are evaluated and necessary feedback on content, organization, accuracy and spelling is given to improve the quality of their writing (Sadler, 1989). It fosters the process of students to form and build their proficiency by reflecting on teacher feedback (Brown & Abeywickrama, 2004). Teachers can gain the understanding of the strong and weak sides of their teaching and can take necessary steps to improve it (Graham, Harris, and Hebert, 2011).

One of the assessment tools to use in either summative or formative assessment is rubric. Rubrics are the mediums used to score the quality of a student's product and there are two types of rubrics named as holistic (in which the product is assessed as a whole) and analytical (in which the product is assessed in many different aspects) (Jonsson and Svingby, 2007). As rubrics are based on some criteria, they are considered to yield to more objective results therefore many teachers favour the use of rubrics for assessment (Spandel, 2006). There are many good reasons to use rubrics in assessment. One of the benefits is that they contribute to the consistency among the raters and this makes the assessment more valid than traditional

assessment methods (Jonsson and Svingby, 2007). While preparing rubrics, teachers also set the learning outcomes and plan the course appropriately, and educational objectives are achieved better; moreover, rubrics in assessment increase reliability in scores "especially if they are analytical, topic-specific, and complemented with exemplars and/or rater training" (Al-Jarf, 2011, p:42). Another advantage of rubrics is that they foster learning as students can see their weakness on the assessment grid and this lets them revise and improve these points (Andrade, 1999).

There are also some alternative assessment methods like portfolios to help students more in writing. Alternative assessment helps teacher observe the overall development with students and can learn more about them by looking at the different tasks and processes that the students have gone through and the topics, interests and ideas they presented in their works (Huerta-Macias, 2002).

With the integration of the technology in education some of the shortcomings of traditional testing methods for writing can be compensated with the use of technological tools (Rastgoo & Namvar, 2010). E-portfolios have started to take over paper based portfolios as it is encouraging for students and easier for teachers to provide feedback to students with e-portfolios (Babaee & Tikoduadua, 2013). According to Bergman (1999), they are more advantageous in that they offer a larger audience worldwide than the traditional ones do. In a study conducted by Al Kahtani (1999), it was found that with e- portfolios information is more accessible, teachers can organize the course along with the students' progress and they save time. E-portfolios also help autonomy because "e-portfolios represent learners' weakness, as a result, learners' raising awareness contributes to self-directed learning" (Babaee & Tikoduadua, p.53, 2013).

2.6 Testing and Computers

E-assessment is a good alternative for schools or institutions which have lots of students but not enough teachers or assessors (Sim et al., 2004). Computers allow schools to be more productive and reformer (Mojarrad, H., et al., 2013). As the technology has started to be more involved in teaching process, it is more reasonable to do assessment on computers to provide coordination between the modes of teaching and assessment (Gipps, 2003). E-assessment provides many practical uses for education like immediate feedback to students, opportunity to revise, considering the strong and weak points of the teaching process and linking to online materials; consequently, e-assessment has a potential to take over paper-based tests as paperbased ones are not authentic any more, they make students more inclined to learn just to perform better in the tests, moreover, they cannot meet the needs of overcrowded schools. (Shojaei & Motamedi, 2004). The use of computers is also effective in increasing the motivation of students. Even though computers in assessment may make students more nervous (Brosnan, 1999), Russell and Haney (2000) conclude that as students nowadays are adept at using computers; this can be a situation to make use of by using computers in assessment process to help students perform better.

Fischer (1994, p. 48) points out the stress students have during traditional paperbased tests stating that:

... the traditional timed examination is likely to measure a great deal more than just the ability to acquire and utilize knowledge. It measures confidence differences, which may be age or gender based, test anxiety levels, degree of belief in superstitious practice, because this affects

confidence; and ability on the day to lower anxiety sufficiently to interpret questions and set out well argued answers.

A study carried out by Bull and Stevens (1999) revealed that students afterwards had positive attitudes towards computer-based tests even though they first experienced the same anxiety as they had during paper-based tests.

On the other hand, studies by Powers, Fowles, Farnum and Ramsey (1994) and Russell and Tao (2004) concluded that in paper-based texts students performed better than in computer-based tests with the probable reasons that students make more mistakes on computers, hand-writing is what students feel more familiar and comfortable with, teachers expect better performance on computer- which makes the test more stressing and handwritten texts look longer.

2.7 Related Studies

In a study conducted by Powers, Fowles, Farnum and Ramsey (1994), the students were asked to write texts on computers and paper. Then the texts written on computer were converted into hand written texts and the handwritten ones were transferred into computer mode. When these texts were assessed, it was seen that the ones written by hand received higher scores due to the fact that written texts require effort by students, they look longer and the mistakes are not easy to identify in hand written mode.

A similar study by Russell and Haney (1997) looked into the effect of test mode on students' success in writing texts. Students of a middle school were given a test with multiple choice and open-ended questions on computers and traditional modes. The

results concluded that the students' performances did not differ in multiple choice items while they performed relatively better in open-ended question items.

In their study Clariana & Wallace (2002) investigated into the factors like content and computer familiarity, competitiveness and gender which could cause difference in students' performance in computer and paper- based tests. After a classroom instruction, business undergraduates were arbitrarily given either paper or computer test modes. The assessment of their performance showed that gender, competitiveness and computer familiarity do not have any contribution to better performance on computers; however, the students who had acquired content validity by attending the courses were comparatively better with computer mode test.

Lee (2004) analyzed the computer and paper based texts produced in a placement test and revealed that texts written on computer got better scores, rater reliability was higher and students preferred taking their tests on computers as they like spending time with computers.

In another study conducted by Li (2006), how word processing effects the writing performance of students was researched. The participants wrote two texts, one being on computer and another being by pen. Then the students were asked to evaluate their own written pieces. It was seen that the students evaluated their texts on the computer more critically, which made them more aware of the writing process.

In one of the studies conducted to investigate the comparability of paper and computer-based tests, Al-Amri (2008) searched how some factors like familiarity with computers, students' choice of test type and strategies influenced the scores of students in a reading exam. The results showed that those factors actually did not have significant impact on the scores received in either of the testing modes.

A study carried out by Chambers (2008) researched into how comparable the paper and computer based texts were. The students were asked to write an informal letter and the letters written on computers and paper were compared in terms of vocabulary, spelling mistakes, organization and punctuation. The results showed that the computer based texts had better lexis, most of the errors there were typos whereas illegible handwriting resulted in spelling mistakes, organization patterns of the sentences were not the same in both forms and punctuation and capitalization mistakes were easier to see in computer based texts.

Mohammadi & Barzgaran (2012) applied Cambridge Preliminary English Test (PET) both on computers and paper to two students groups formed as low and high computer familiarity with the use of a computer familiarity questionnaire. There was not observed any significant difference between two modes.

Kohler (2015) compared the performances and perceptions of students in computer based and paper based writing tests in ESL context. He also investigated the raters' performances in both modes of assessment by using the data from students' essays and online questionnaires. He concluded that it was still too early to apply computer based writing tests in ESL context as students are not proficient and competent enough to take this mode of tests. Raters, on the other hand, scored hand written tests higher than the typed ones.

Oduntan, et al. (2015) investigated the differences in students' performances in paper pencil tests and computer based test. Students took both of the test modes. The correlational analysis of the students' essay scores showed that computer based tests enhanced writing performance.

CHAPTER III

METHODOLOGY

This chapter describes the research model, study groups, data gathering instruments and the data analysis.

3.1 Research Method

This research was designed as both quantitative and qualitative. The quantitative research method used for present study was quasi-experimental design aiming to investigate effect and evaluate some implications in education in cases when random assignment cannot be employed. Therefore, a pre-test and post-test were used in both experimental and control group. For the qualitative aspect, after the post-test, the students in the experimental group were asked to write a reflection on taking writing exams on computers.

3.2 Participants

36 Turkish EFL learners who were to study either English Language Teaching or English Language and Literature the following year, from two classes in Akdeniz University School of Foreign Languages took part in this study. The students in this school always take a proficiency test in the beginning of the term and they are placed in classes according to the scores they get in this test. These two classes in this study were formed in the same way as B1 level students according to the criteria of the Common European Framework of References for Languages (CEFR, 2001). In the beginning of the study, the students in both experimental and control groups were assigned to write an opinion essay on the same topic as a pre-test. The students were

told about the study and promised that their names would not be revealed in any way and their works would be used for only academic purposes.

3.3 Data Gathering Instruments

The instruments used to gather data in this study are the Proficiency and Placement Test, the pre-test, the testing software, the post-test and students' reflection on taking writing tests on computers.

3.3.1 Proficiency and Placement Test

At the beginning of every academic year, the School of Foreign Languages in Akdeniz University applies a proficiency and placement test, which is prepared and checked by the testing office carefully, to determine the level of students and form homogeneous classes to maintain a successful teaching. The test applied to students of English Language and Literature Department and English Language Teaching Department is prepared with reference to the question types which are commonly used in Cambridge First Certificate Exam, which has worldwide acceptance to determine B1 level students. It consists of listening, language use and reading parts which are mainly made up of multiple choice question items and also writing and speaking parts in which students are assessed by two instructors to help the test be more objective.

3.3.2 Pre-Test

When the study was conducted the students were half-way through the academic year so they had already been taught the basics of essay writing. To make sure that both the experimental and control groups were almost equal, they were assigned to

write a 200-word opinion essay on a topic as a paper pencil test. Writings of the students were assessed by three instructors who teach to students of this level to make the pre-test more reliable. A detailed rubric (see Appendix A) was used to score the papers out of 100. The scores given to an essay given by three of the instructors were averaged.

3.3.3 Testing Software

An online testing software called www.testingenglish.com was prepared by a software developer. The website was edited by the researcher. It is a website which can be used to prepare and store multiple choice and open ended questions to test reading and writing skills and language use. The questions can be stored according to their levels therefore it can also be used as a question bank. In this study, it was used to conduct writing tests on computers. The students in the experimental group signed up for the website and they could log in with their usernames and passwords. The researcher could assign the date, time and duration of each test.

3.3.4 Post-test

The pre-test which required the students to write an essay on the given topic was again applied after an 8-week period. The control group took the test on paper while the experimental group took it on the computer. The essays were evaluated by the same three instructors using the rubric in the same way as in the pre-test.

3.3.5 Reflection on the Practice

After the post test, the students in the experimental group were asked to write a 100-word reflection on how they felt about having online writing tests.

3.4 Reliability and Validity

Reliability could be defined as the consistency between results received in the long term therefore for a study to be accepted as reliable the research instrument should yield similar results when conducted using the same method (Joppe, 2000). That means that the scores of the students should not change depending on the circumstances which are not actually concerned with the assessment itself. However, as Kazanci (2012) states there are too many factors such as the examination day, the type of the writing task, the rubric and the raters which could seriously affect the evaluation.

As essay scoring is a subjective assessment, the reliability of the assessment could be provided with intra-rater and inter-rater reliability (Wang, 2009). Intra-rater reliability means a rater could give to a paper the same score at different times (Jones, 1979) while inter-rater reliability is concerned with the consistency between the marks independently given to a piece of writing by two or more different raters (Jones, 1979). The instructors to evaluate the papers in this study were chosen from among the experienced teachers in writing instruction and who are also familiar with the syllabus of the course. According to Wang (2009), there are some certain ways of establishing inter-reliability. One way is to set a standard, in which raters have some guidelines to follow while scoring the paper with every scorer having a say in the evaluation process. A rubric was decided for the raters to be able to score the essays analytically. To secure inter-reliability, instructors in this study were shown some scripts which can represent excellent, average and poor performance to guide them in their scoring. In this study, papers of the students were evaluated by three instructors independently and the scores given by each of the instructors were compared and then averaged. Another way to improve inter-reliability is to score the papers without

seeing the name of the students to prevent instructors from being subjective in their evaluation, so the names of the students were covered in the study and the students were identified by their names.

As for validity, it is the fact that the test measures what it intends to measure. To establish valid tests, many things such as construct, content and the face of the test should be taken into consideration (Tsai, 2003). To make sure that the tests are valid, the topics of the essays were chosen from the content of the course in this study.

3.5 Data Collection

At the beginning of the study, the two equivalent groups, with reference to the proficiency exam at the beginning of the term, were chosen as experimental and control groups. Each group was assigned to write an essay on paper about the topic "Should teachers be obliged to take an exam every five years to be reassigned?" The essays of the students were scored by three instructors. During the study period of 8 weeks, the experimental group logged in the software and took the writing exam online every week. On the same days, the control group took the exam on paper. The topics in these writing tests were adapted from the course book. At the end of the study period both of the groups were reassigned to write about the topic "Should teachers be obliged to take an exam every five years to be reassigned?" However, this time experimental group wrote it on the computer while the control group took it on paper in the same as the pre-test. These essays were checked by the same three instructors. At the end of the study, the students in the experimental group were asked to write about how they felt about taking writing exams on the computers.

3.6 Data Analysis

The scores given to the essays of the students of both groups in pre and post tests were analyzed through SPSS. To answer the research questions different types of tests were used to analyze the data. Shapiro-Wilk test was employed according to the assumption of normality to see whether there is a significant difference between the scores when the number of the participants are fewer than 30 while Kolmogorov-Smirnov test was used when the number was higher than 30. Depending on whether the distribution of the scores was normal or not, Wilcoxson signed-rank test, t test for two related samples and Mann-Whitney U were used. The results of these analyses are presented in the next chapter.

CHAPTER IV

FINDINGS AND DISCUSSION

4.1 Introduction

In this chapter, analysis of the data to answer the research questions, the students' views on computer-based test and researcher's interpretations are presented.

4.2 Analysis of the Data with Relevance to Research Questions

4.2.1 Is there a significant difference between pre-test scores of control and experimental groups?

Pre-test scores of the control and experimental groups can be seen in the following table 4.1:

Table 4. 1 Pre-test scores of the control and experimental groups

	experimental group		contro	ol group
	Student	score	student	score
	1	65	A	79
	2	85	В	74
	3	80	С	85
	4	92	D	75
	5	90	Е	18
	6	21	F	88
	7	80	G	70
	8	69	Н	84
	9	83	I	75
	10	88	J	84
	11	86	K	69
	12	100	L	82
	13	93	M	75
	14	87	N	84
	15	93	0	95
	16	30	P	79
	17	75	Q	69
	18	59	R	70
mean score		76,44		75,27

To be able to decide which analysis to use to see whether there is a significant difference between pre-test scores of the experimental and control groups according to the assumption of normality, Kolmogorov-Smirnov test was used as the number of participants was higher than 30. According to the results of this test, it was concluded that pre-test scored did not have a normal distribution (p<0,05) so Mann-Whitney U, a nonparametric test, was used.

Table 4.2 Kolmogorov-Smirnov Normality Analysis (pre-test scores of the experimental and control groups)

	Statistic	sd	P
Pre-test	0,217	36	0,000

According to the Mann-Whitney U test, which was done to see whether there was a significant difference between the pre-test scores of the control and experimental group, there was not observed a statistically significant difference (U= 126,5, p>0,05) between the average pre- test scores of the control group (\overline{X} = 75,28) and the experimental group (\overline{X} =76,44). In this study, it could be said that the pre-test scores of both groups were equal.

Table 4.3 Mann-Whitney U Test (pre-test scores of the experimental and control groups)

Group	N	Rank	Sum of	U	P
		average	ranks		
Control	18	16,53	297,50	126,5	0,261
group					
Experimental	18	20,47	368,50		
group					

4.2.2 Is there a significant difference between pre and post test scores of the control group?

The scores of the control group can be seen in table 4.4:

Table 4.4 Pre and post- test scores of the control group

Student	pre-test	post-test
A	79	85
В	74	83
С	85	85
D	75	57
Е	18	32
F	88	92
G	70	68
Н	84	88
I	75	76
J	84	88
K	69	74
L	82	86
M	75	77
N	84	81
0	95	94
P	79	84
Q	69	68
R	70	77
mean score	75,27	77,5

To be able to decide which analysis to use to see whether there is a significant difference between pre and post scores of control group according to the assumption of normality, Shapiro-Wilk test was used as the number of participants was fewer than 30. The results of this test showed that the range of the difference between pre and post scores was not normal (p<0,05).

Table 4.5 Shapiro-Wilk Analysis of the data (pre and post test scores of the control group)

	Statistic	Sd	P
Difference	0,865	18	0,015

For this reason, Wilcoxson signed-rank test, one of nonparametric tests, was used. According to the results of the Wilcoxson signed-rank test, applied to see whether there is a significant difference between the pre and post test scores of control group, it was observed that there was a significant difference between the pre and post test scores of control group (z=-2,135, p<0,05). In other words, the post test scores of control group was higher than its pre-test scores in statistical terms.

Table 4.6 Wilcoxson signed-rank test of pre and post test scores of the control group

Post-test – pre-	N	Rank	Sum of	Z	P
test		average	ranks		
Negative Ranks	5	6,30	31,50	-2,135	0,033
Positive Ranks	12	10,13	121,50		
With no	1				
difference					

^{*}based on negative ranks

4.2.3 Is there a significant difference between pre and post test scores of the experimental group?

Table 4.7 shows the scores of experimental group students in pre and post-tests:

Table 4.7 Pre and post test scores of the experimental group

Student	Pre-test score	Post test score
1	65	70
2	85	85
3	80	83
4	92	95
5	90	91
6	21	30
7	80	83
8	69	74
9	83	83
10	88	88
11	86	91
12	100	97
13	93	96
14	87	90
15	93	96
16	30	42
17	75	78
18	59	66
Mean score	76,44	79,89

To be able to decide which analysis to use to see whether there is a significant difference between pre and post test scores of the experimental group according to the assumption of normality, Shapiro-Wilk test was used as the number of participants is fewer than 30. The results of this test showed that the range of the difference between pre and post scores was normal (p>0,05).

Table 4.8 Shapiro-Wilk Analysis of the data (pre and post test scores of the experimental group)

	Statistic	sd	p
Difference	0,931	18	0,201

For this reason, t test for two related samples, one of parametric tests, was used. According to results of this test applied to see whether there is a significant difference between the pre and post test scores of the experimental group, there was

observed a significant difference ($t_{(17)}$ = -4,173, p<0,05) between the average of pretest scores (\overline{X} = 76,44) and the average of post- test scores (\overline{X} = 79,89) of the experimental group. The calculated effect size (d= 0,24) showed that this difference is low. This shows that in this group the use of computer based writing applications have effect on students' writing performance in English.

Table 4.9 t test for two related samples (pre and post test scores of the experimental group)

Test	N	\overline{X}	S	sd	t	p
Pre-test	18	76,44	21,324	17	-4,173	
Post-test	18	79,89	18,413	0,00	01	

4.2.4 Is there a significant difference between post-test scores of control and experimental groups?

The scores of the control and experimental group in post -test are as in Table 4.10:

Table 4.10 Post-test scores of the control and experimental groups

	experim	ental group	co	ontrol group
	student	score	student	score
	1	70	A	85
	2	85	В	83
	3	83	C	85
	4	95	D	57
	5	91	Е	32
	6	30	F	92
	7	83	G	68
	8	74	Н	88
	9	83	I	76
	10	88	J	88
	11	91	K	74
	12	97	L	86
	13	96	M	77
	14	90	N	81
	15	96	О	94
	16	42	P	84
	17	78	Q	68
	18	66	R	77
mean score		79,89		77,5

To be able to decide which analysis to use to see whether there is a significant difference between pre-test scores of the experimental and control groups according to the assumption of normality, Kolmogorov-Smirnov test was used as the number of participants was higher than 30. According to the results of this test, it was concluded that pre-test scored did not have a normal distribution (p<0,05) so Mann-Whitney U, a nonparametric test, was used.

Table 4.11 Kolmogorov-Smirnov Normality Analysis (pre-test scores of the experimental and control groups)

	Statistic	sd	P
Post test	0,187	36	0,003

According to the Mann-Whitney U test, which was done to see whether there was a significant difference between the pre-test scores of the control and experimental

group, it was concluded that there was not a statistical difference (U= 129, p>0,05) between the average post- test scores of the control group (\overline{X} = 77,50) and the experimental group (\overline{X} =79,89). The post scores of these two groups in this study could be said to be equal.

Table 4.12 Mann-Whitney U Test (pre-test scores of the experimental and control groups)

Group	N	Rank	Sum of	U	P
		average	ranks		
Control	18	16,67	300	129	0,296
group					
Experimental	18	20,33	366		
group					

4.2.5 Which aspect of writing (format, punctuation, content, organization, grammar) has the experimental group improved?

As a result of this experimental study, the post test scores of experimental group were higher than pre-test scores. When it comes to the aspect of writing which most contributed to this increase, it was seen that the improvement of experimental group students in scores of format was -3,4%, punctuation was -3,2%, content was 3,9%, organization was 2,71% and grammar was 7,12%.

This means that computer- based tests helped experimental group students improve their grammar (7,12%) most.

Table 4.13 Improvements of experimental group in aspects of writing in percentages

	Format	Punctuation	Content	Organization	Grammar
	(5)	(5)	(20)	(45)	(25)
Post-test score					
average	4,27	4,22	16,94	36,44	18
Pre-test score					
average	4,44	4,38	16,16	35,22	16,22
Difference					
between the					
averages	-0,17	-0,16	0,78	1,22	1,78
Difference					
between the					
averages (%)	-3,4	-3,2	3,9	2,71	7,12

4.3 Reflection of the Students on Taking Writing tests on Computer

At the end of the study, the students were asked to write a paragraph about how they felt about taking writing tests on computers. Most of them were of the opinion that computer based writing had more advantages than disadvantages. They pointed out some positive effects of these tests.

To begin with, they said that they felt more motivated to write on the computer. One possible reason they put forward for this was that they were already familiar and busy with spending time on computers. They also thought that paper-based tests are old-fashioned in today's world where most things in our daily life is done with computers and technology. In addition, they were aware of the possibility that they would have to write many things on computers in their future jobs and lives. They pointed out that it was inspirational to write on computers, ideas occurred to them more quickly. They also mentioned that they felt more comfortable with writing as it

was easier to see their mistakes on the screen and it was not tiring to delete what they wrote. An interesting point they expressed was that they did not feel stressed while writing on the computer as it was harder to write neatly on a blank paper and they did not worry about the illegibility of their handwriting. Another interesting thing they mentioned was that with the help of the use of computers in writing and testing, lots of paper, consequently, trees could be saved. They also liked the idea that it would be easier to save the essays and get access to them later at any time.

As for the negative sides about writing on computers, four of them mentioned that they did not have enough computer literacy, it took longer to write on the computer than on paper, thus they pointed out that they felt more worried because of the fact that they might run out of time during the exam. They suggested that students could trained to use computers and how to write more quickly on them. Another thing they regarded as a drawback was that it could sometimes be tiring for their eyes to look at the screen resulting in a lost in their concentration. One other thing that some of the students considered as a disadvantage was that they were not accustomed to writing on computers and it did not really looked natural and even sincere.

CHAPTER V

CONCLUSION, DISCUSSION AND SUGGESTIONS

5.1 Introduction

In this chapter, firstly, the study is summarized. Then the findings from the pre and post-test scores of the control and experimental study are interpreted. Next, the pedagogical implications for the field are presented. At the end of the chapter, some suggestions are offered for further studies.

5.2 Discussion and Conclusion

The study aimed to find out whether taking writing tests on computers help students improve their writing performance. The study aims to answer following questions:

- 1. Do computer-based writing tests contribute to the improvement of the learners' writing skills?
- 2. Which aspect of writing (format, punctuation, content, organization, grammar) has the experimental group improved?
- 3. What kind attitudes do the students have towards computer-based writing tests?

The first question aimed to find whether these two study groups were equal in level. According to the statistical analysis, these groups were found to have almost equal proficiency level in the beginning of the study. This is important to be able to better observe the effect of the computer based writing tests on writing performance.

To be able to see the effect size of the computer based writing tests, it was required a traditional test application in another study group, namely control group. The control

group took several writing tests on paper while the experimental group did them on computer. To be able to see whether there is an effect of these traditional writing tests on students' performance, the scores of the control group in pre and post-test were compared. There was observed an increase in the scores of the students, though not statistically significant. It was found out that their average score increased by 2.23 points. This cannot be said to be a significant difference. Besides, it was what was expected to be in the beginning of the study.

The third research question aimed to see whether there is a significant difference between the pre and post-test scores of the experimental group. When the pre and post-test scores of the experimental group were compared, it was seen that the scores of the experimental group increased by 3.45 points. When compared to the difference between the pre and post test scores of the control group, the difference between the pre and post test scores of the experimental group could be said to be relatively higher, though not statistically significant.

Similarly, when the post test scores of both the control and experimental group are compared, it can be concluded that their mean scores are very close to each other $(\overline{X} \text{ (control group)}=77,50, \overline{X} \text{ (experimental group)}=79,89)$. This means that the expected effect of the computer based tests on students' writing performance was not observed. Similarly, in his study Kohler (2015) reached the same conclusion that there was not a significant difference between students' performance in paper based and computer based tests. The finding of this study is also almost similar to the claim of Endres (2012) that the perception that students performed better in computer based tests was a false one. On the other hand, Oduntan et. al (2015) disagrees with the inefficiency of computer based writing test in the improvement of writing skills.

With regard to fifth question, it could be concluded that students pay more attention to grammar while writing on computers as grammar is the area in which students showed progress most (1,78 points). Organization skills follow grammar with an average increase of 1,22 points. They also improved the content on the computer-based writing test. The reason for this improvement could be the same as the one Li (2006) put forward in his study. He concluded that students took writing on

computers more seriously, they wrote more critically and they became more aware during writing. On the contrary, mechanical things like having a proper format or using correct punctuation and capitalization are the areas in which students did not perform well in computer based writing tests, they lost average points of 0,77 and 0,16 respectively in these areas. This may be because it was easier for raters to identify these mistakes on the screen (Chambers, 2008). A general conclusion that can be drawn from these findings is that students do not pay attention to what their essays look like on the screen, rather they care more about making correct sentences and grouping them in paragraphs.

When the students' reflections on computer based writing test are taken into consideration, it is true to say that most of them felt happy with this practice. Most of the students today are good at using computer, which can be turned into an advantage for students to feel more motivated while writing (Russell and Haney, 2000). Even though there were some challenges of the computer based tests like students' poor computer skills, the stress of falling short of time due to the their low speed in writing on a keyboard and the harm of the screen on eyes, most of the students stated that such a modern way of testing was more beneficial, motivating, inspiring, practical and even more environment friendly than paper based tests. This is not surprising as computers are more integrated in our daily lives, especially in teenagers' lives (Lee, 2004).

5.3 Pedagogical Implications and Suggestions for Further Studies

Writing is one of the skills which a lot of EFL students find most challenging during language learning process. The reasons for this may be the lack of motivation, inability to generate ideas on given topics or insufficiency of opportunities to practise to write more. When it comes to examinations, students' performance in writing tests is even poorer. Computer based tests could be considered as a good alternative to solve this problem.

The study demonstrated that regular tests taken on computers contributed to students' performance in writing. Computer-based writing activities and writing tests were perceived as more motivating by the students in this study. This perception suggests that if more writing instruction is provided with computer based activities, students can be more eager to write. Similarly, if the writing tests are taken on computers, students employ their organization and language skills more consciously, therefore they can be better users of the target language in communicative and structural perspectives.

It would not be very difficult for schools and institutions to integrate computer based tests into their assessment systems. By having a software developed, they can easily do online tests. In addition to these tests' advantages for students, they are also useful, time-saving for teachers and schools as they can form a question bank by storing the test questions, prepare tests easily, save student's works and have access to them at any time. This would also save loads of paper hoarded in files in the archives of the institutions.

Considering the aims and the limitations of this study, some suggestions for further studies can be offered as follows:

- As this study was conducted with small number of students in control and experimental groups, the same study should be carried out in larger groups.
- This study was with B1 level students in a prep school at Akdeniz University.
 Similar studies should be conducted with students at A1 and A2 level and also with students in primary and high schools.
- This study lasted for about two months. Students could be exposed to computer based writing tests for a longer period of time to observe and compare the effect of these applications on writing performance.
- Students can be given a training before a similar study to make sure that they are all familiar with using computers.
- Similar studies can be done to see the effect of doing computer based tests on students' performance in listening and reading.

REFERENCES

- 1. AbuSeileek, A. (2006) .The use of word processor for teaching writing to EFL learners in King Saud University. *Journal of Educational Sciences & Islamic Studies*, 19(2), 1–15.
- 2. AbuSeileek, A. F., Sa'aleek, A., & Odeh, A. (2012). Computer Assisted Language Learning: Merits and Demerits. *Language in India*, 12(4).
- 3.Ahmed, M. A. E. A. S. (2013). The Effect of Using E-mail on Developing EFL Writing Skills for Secondary Stage Students at the Experimental Schools. *Arab World English Journal*, 4(3), 135-150
- 4.Al-Amri, S. (2008). Computer-based testing vs. paper-based testing: A comprehensive approach to examining the comparability of testing modes. *Essex Graduate Student Papers in Language & Linguistics*, 10, 22-44.
- 5.Albesher, K.B. (2012) *Developing* the writing skills of ESL students through the collaborative learning strategy
- 6.Alexander, B. (2006). Web 2.0: A new wave of innovation for teaching and learning?. *Educause review*, 41(2), 32.
- 7.Al-Jarf, R. (2011). Creating and Sharing Writing iRubrics. *Asian EFL Journal*.

 Professional Teaching Arficles, 51, 41-62.
- 8.Al-Haq, F., & Al-Sobh, A. (2010). The effect of a web-based writing instructional EFL program on enhancing the performance of Jordanian secondary students. *JALT CALL*, 6(3), 189-218.

- 9.Al Kahtani, S. (1999). Electronic portfolios in ESL writing: An alternative approach. *Computer Assisted Language Learning*, 12(3), 261-268.
- 10.Andersen, R. (2011). Building a Collaborative Writing Strategy. Journal of Information Technology Education: Vol.(10). 2011.
- 11. Andrade, H. G. (1999). The Role of Instructional Rubrics and Self-Assessment in Learning To Write: A Smorgasbord of Findings.
- 12. Antoniadou, M. (2009). Teaching English. ISSUES, 23.
- 13.Applebee, A. N. (1986). Problems in process approaches: Toward a reconceptualization of process instruction. *The teaching of writing. Eighty-fifth Yearbook of the National Society for the Study of Education, Part II*, 95-113.
- 14. Arndt, V. (1987). Six writers in search of texts: A protocol-based study of L1 and L2 writing. *ELT journal*, 41(4), 257-267.
- 15.Arslan, A. (2009). Yapılandırmacı Öğrenme Yaklaşımı ve Türkçe Öğretimi. Atatürk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 13 (1), 143-154.
- 16.Atkinson, D. (2003). Writing and culture in the post-process era. *Journal of Second Language Writing*, 12(1), 49-63.
- 17.Babaee, M., & Tikoduadua, (2013). M. E-Portfolios: A New Trend in Formative Writing Assessment. *International Journal of Modern Education Forum* (*IJMEF*) Volume 2, 49-56.
- 18.Badger, R., & White, G. (2000). A process genre approach to teaching writing. *ELT journal*, 54(2), 153-160.

- 19.Bagheri, M. S., Yamini, M., & Behjat, F. (2012). Blending Technology in EFL Writing Instruction. *International Journal of Social Sciences* & Education, 3(2).
- 20.Bakardjieva, T., & Gradinarova, B. (2012). Wikis and Blogs in E-Learning Context. INTECH Open Access Publisher.
- 21.Bangert-Drowns, R. L. (1993). The word processor as an instructional tool: A meta-analysis of word processing in writing instruction. *Review of Educational research*, 63(1), 69-93
- 22.Barkley, E. F, Croos, K. Patricia, & Major, Clarie Howell. (2005). Collaborative Learning Techniques. San Fransisco: Jossey-Bass.
- 23.Beeson, P. (2005). Bringing blogs into the classroom. Quill, 93(6), 27-29.
- 24.Belisle, R. (1996). E-mail Activities in the ESL Writing Class. *The Internet TESL Journal*, 2(12), 56-79.
- 25.Bergman, T. (2001). Feasible electronic portfolios: global networking for the self-directed learner in the digital age. *Mt. Edgecumbe High School Site*, 70.
- 26.Bonk, C. J., & King, K. S. (Eds.). (1998). Electronic collaborators: Learner-centered technologies for literacy, apprenticeship, and discourse. Routledge.
- 27.Boyle, O. and Peregoy, S. (2005). Reading, writing, and learning in ESL: a resource book for K-12 teachers. (2nd . ed.). New York: Pearson.
- 28.Bostock, S. J. (2004). Motivation and electronic assessment. *Effective learning* and teaching in computing, 86-99.
- 29.Bravo, I. G. B. Implementing Blogs in the EFL Classroom Instruction.

- 30.Brinton, Donna M. (1997). The Challenges of Administering Content-Based Programs. In Snow and Brinton (eds.) The Content-Based Classroom. New York: Longman
- 31.Brinton, D.M., M.A. Snow & M. Wesche. (2003). Content-Based Second Language Instruction. Ann Arbor: The University of Michigan Press.
- 32.Britton, J. (1978). The composing processes and the functions of writing.

 Research on composing. Urbana, Illinois: National Council of Teachers of English.
- 33.Brosnan, M. (1999). Computer Anxiety in Students: Should Computer-Based Assessment be Used at All? In S. Brown, P. Race, & J. Bull. (Eds.). Computer-assisted Assessment in Higher Education, pp. 47-54. London: Kogan Page.
- 34.Brown, H. D., & Abeywickrama, P. (2004). *Language assessment: Principles and classroom practices*. New York: Longman.
- 35.Brown, H. D. (2004). Language assessment: principles and classroom practices.

 New York: Pearson Education.
- 36.Brown, H. D. (2001). *Teaching by Principles: An Interactive Approach to Language Pedagogy*. (2nd ed.)New York: Addison Wesley Longman.
- 37.Bull, J. and Stevens, D. (1999). The use of Question Mark software for formative and summative assessment at two universities. *IETI* 36 (2) 128-136
- 38.Byrd, P., & Reid, J. (1998). Grammar in the composition classroom. Boston: Heinle & Heinle.

- 39.Campbell, A. P. (2003). Weblogs for use with ESL classes. *The Internet TESL Journal*, 9(2), 33-35.
- 40.Cerdà, F. L. (2012). Facebook's Potential for Collaborative e-Learning. *RUSC*, 8(2), 197-210.
- 41. Chambers, L. (2008). Computer-based and paper-based writing assessment: a comparative text analysis. *Research Notes*, *34*, 9-15.
- 42.Chapelle, C. A. (2001). Computer application in second language acquisition.

 Cambridge: Cambridge University Press
- 43.Chiao, T. L. (2006). Application of blogging in EFL writing classes: A case study.

 The proceedings of *the Fifth International Symposium on English Teaching*(pp. 336-344). Taiwan: Crane
- 44.Christie, A. (2005). Constructivism and its implications for educators. *the World Wide Web: http://alicechristie.com/edtech/learning/constructivism/index. htm*.
- 45.Christopher, L. L. (2006). Fostering learner autonomy in a technology-enhanced, inquiry-based foreign language classroom. Foreign Language Annals, 39(1), 71.
- 46.Clariana, R., & Wallace, P. (2002). Paper–based versus computer–based assessment: key factors associated with the test mode effect. *British Journal of Educational Technology*, 33(5), 593-602.
- 47.Cloete, S., de Villiers, C., & Roodt, S. (2009, June). Facebook as an academic tool for ICT lecturers. In *Proceedings of the 2009 Annual Conference of the Southern African Computer Lecturers' Association* (pp. 16-22). ACM.

- 48.Coniam, D., & Kit, M. L. W. (2008). Incorporating wikis into the teaching of English writing. *Hong Kong Teachers' Centre Journal*, 7, 52-67.
- 49.Cope, B., & Kalantzis, M. (Eds.). (1993). *The powers of literacy: A genre approach to teaching writing*. Pittsburgh, PA: University of Pittsburgh Press
- 50.Cunningham, K. (2000). Integrating CALL into the writing curriculum. *The Internet TESL Journal*, 6(5).
- 51.Dinçer, A., Takkaç, M., & Akalın, S. (2010). An Evaluation on English Language

 Education Process in Turkey from the Viewpoints of University Preparatory

 School Students, 235-242
- 52.Domalewska, D. (2014). Technology-supported classroom for collaborative learning: Blogging in the foreign language classroom. *International Journal of Education and Development using ICT*, 10(4). 21-30
- 53.Duffy, P. D., & Bruns, A. (2006). The use of blogs, wikis and RSS in education:

 A conversation of possibilities. 31-38
- 54.Duffy, T. M., Lowyck, J., & Jonassen, D. H. (1993). The design of constructivistic learning environments: Implications for instructional design and the use of technology. *Heidelburg: Springer-Verlag*.
- 55.Duke, N. K., Purcell-Gates, V., Hall, L. A., & Tower, C. (2006). Authentic literacy activities for developing comprehension and writing. *The Reading Teacher*, 60(4), 344-355.
- 56.Educause Learning Initiative (2006). 7 things you should know about Facebook.

 Retrieved from http://net.educause.edu/ir/library/pdf/ELI7017.pdf

- 57. Endres, H. (2012). A comparability study of computer-based and paper-based writing tests. Cambridge ESOL: Research Notes, 49, 26-32.
- 58.Erdmann, S. (2013). Facebook Goes to College; Recent Research on Educational

 Uses of Social Networks. *Nordic Journal of Modern Language*Methodology, 2(1).
- 59.Fageeh, A. I. (2011). Efl Learners'use Of Blogging For Developing Writing Skills

 And Enhancing Attitudes Towards English Learning: An Exploratory

 Study. *Journal of Language & Literature* (20780303), 2(1).
- 60.Farabaugh, R. (2007). The isle is full of noises: Using wiki software to establish a discourse community in a Shakespeare classroom. Language Awareness, 16(1), 41-56.
- 61.Fies, D. & Hedgcock, J. S. (2005). Teaching ESL composition: Purpose, process, and Practice (2nd ed.).London: LEA Publishers
- 62.Fovet, F. (2008, October). Self-perception and self-representation in participants of an online Masters program targeting education practitioners. In *Frontiers in Education Conference*, 2008. FIE 2008. 38th Annual (pp. T4E-1). IEEE.
- 63. Fulwiler, T. (1996). The College Writer's Reference. 3rd ed. Upper Saddle River: Prentice Hall.
- 64.Gabrielatos C (1995) Two birds with one stone: Reading skills development using testing materials Current Issues Nos. 4, 5.
- 65.Grabe, M. & Grabe, C. (2005). *Integrating technology for meaningful learning*. USA: Houghton Mifflin.

- 66.Gedera, D. S. P., & Pahala, S. (2011). Integration of weblogs in developing language skills of ESL learners. *International Journal of Technology in Teaching and Learning*, 7(2), 124-135.
- 67.Gipps, C. (2003). Should universities adopt ICT-based assessment Exchange .Spring 2003. 26 -27
- 68.Gips, A., DiMattia, P., & Gips, J. (2004) The effect of assistive technology on educational costs: Two case studies", in K. Miesenberger, J. Klaus, W. Zagler,
 D. Burger (eds.), Computers Helping People with Special Needs, Springer,
 2004, pp. 206-213
- 69.Gokhale, A. (1995). Collaborative Learning Enhances Critical Thinking. Journal of Technology Education. Vol 7. (1).
- 70.Graham, S. (2008). The Power of Word Processing for the Students. Winconsin:

 Renaissance Learning Incorporation.
- 71.Graham, S., Harris, K., & Hebert, M. (2011). Informing Writing: The Benefits of Formative Assessment. A Report from Carnegie Corporation of New York.
- 72.Godwin-Jones, B. (2003). Blogs and Wikis: Environments for On-line Collaboration. *Language Learning & Technology*, 7 (2). 12-16
- 73.Grant, L. (2006). "Using wikis in schools: A case study."
- 74. Gündüz, N. (2005). Computer assisted language learning. *Journal of Language* and Linguistic Studies, 1(2).

- 75.Han, T., & Kaya, H. İ. (2014). Turkish EFL Teachers' Assessment Preferences and Practices in the Context of Constructivist Instruction. *Journal of Studies in Education*, 4(1), 77-93.
- 76.Handayani, A. A., Dantes, N., & Ratminingsih, N. M. (2013). The Effect Of Guided Writing Strategy And Students'achievement Motivation On Students'writing Competency. *Jurnal Pendidikan Bahasa Inggris*, 1.
- 77. Harmer, J. (2001). The Practice of English Language Teaching. 3rd Edition. Essex: Pearson Education Limited.
- 78. Harmer, J. (2007). How to Teach English. London: Longman.
- 79. Hedge, T. (2005). Writing. 2nd ed. New York: Oxford UP
- 80.Hedgcock, J. (2005). Taking stock of research and pedagogy in L2 writing. In E.
- 81.Hill, S. (1999). Guiding literacy learners; focus on literacy. Armadale, Victoria: Eleanor Curtain. Hinkel (Ed.), Handbook of research in second language teaching and learning (pp. 597-614). Mahwah, NJ: Lawrence Erlbaum
- 82.Hinkel, E. (2006). Current perspectives on teaching the four skills. *Tesol Quarterly*, 40(1), 109-131.
- 83.Hinofotis (Eds.), Concepts in language testing (pp. 50-57). Washington, DC: TESOL.
- 84. Hoopingarner, D. (2009). *Best Practices in Technology and Language Teaching*.

 Language and Linguistics Compass, 3 (1), 222-235
- 85. Huerta-Macias, A. (2002). Alternative assessment: Responses to commonly asked questions. *Methodology in language teaching*, 338-343.

- 86.Hui-fang, S. (2005). E-mail Dialogue Journaling: Attitudes and Impact on L2 Reading Performance. *Educational Studies*, 31(2), 197-212
- 87.Hunter, D. M., Jones, R. M., & Randhawa, B. S. (1996). The use of holistic versus analytic scoring for large-scale assessment of writing. *The Canadian Journal of Program Evaluation*, 11(2), 61-85
- 88.Hyland, K. (1993). ESL computer writers: What can we do to help?. System,21(1), 21-30.
- 89. Hyland, K. (2003) Second language writing, Cambridge University Press
- 90.Hyland, K. (2004). Genre and second language writing. Ann Arbor, MI:
 University of Michigan Press
- 91. Hyland, K. (2007). Genre pedagogy: Language, literacy and L2 writing instruction. *Journal of second language writing*, 16(3), 148-164.
- 92.Iwasaki, I. (2008). From Cyberspace to the Classroom: Using E-mail to Enhance the EFL Environment. 阪南論集 人文・自然科学編, 44(1), 15-20.
- 93.İlter, B. G., & Güzeller, C. O. (2005). Cultural problems of Turkish students while learning English as a foreign language. *Modern Language Journal*, 89(2), 456-461
- 94.Jafari, N., & Ansari, D. N. (2012). The effect of collaboration on Iranian EFL learners' writing accuracy. *International Education Studies*, 5(2), p125.
- 95. Jafarian, K., Soori, A., & Kifipour, R. (2012). The effect of computer assisted language learning (CALL) on EFL high school students' writing achievement. *European Journal of Social sciences*, 27(2), 138-148.

- 96.Johnson, A. (2004). Creating a writing course utilizing class and student blogs. *The internet TESL journal*, 10(8), 10-10.
- 97.Jones, R. (1979). Performance testing of second language proficiency. In E. Briere & F.
- 98.Joppe, M. (2000). The Research Process. Retrieved February 25, 1998, from http://www.ryerson.ca/mjoppe/rp.htm
- 99. Kaplan, N. (1996). Ideology, technology, and the future of writing instruction. *Evolving perspectives on computers and composition studies*, 11-42.
- 100.Kazanci, R. (2012) The Use Of Blogs And The Internet To Enhance The Writing Skills of EFL Learners. Akdeniz University (Not published master thesis)
- 101.Kearsely (1983). Meta-analysis in computer and the language teacher in higher education. London. Rutledge
- 102.Kennedy, K. (2003). Writing with web logs. *Technology and Learning Magazine*,23.
- 103.Ketabi, S., & Ketabi, S. (2014). Classroom and Formative Assessment in Second/Foreign Language Teaching and Learning. *Theory and Practice in Language Studies*, 4(2), 435-440.
- 104.Khamkhien, A. (2012). Computer assisted language learning and English language teaching in Thailand: overview. *Mediterranean Journal of Social Sciences*, 3(1), 55-64.

- 105.Khalid, A., & Azeem, M. (2012). Constructivist vs traditional: effective instructional approach in teacher education. *International Journal of Humanities and Social Science*, 2(5), 170-177.
- 106.Khoi, R. and Arabsarhangi, Z. (2012). The Effect of Wikis' Collaborative Environment on the Improvement of Iranian EFL Learners' Writing Skill.

 International Conference: ICT for Language Learning,4th Edition
- 107.Knapp, P. & Watkins, M. (2005). Genre, Text, Grammar: Technologies for Teaching and Assessing Writing. Sidney: UNSW Press Ltd.
- 108.Kohler, B. (2015). Paper-Based or Computer-Based Essay Writing: Differences in Performance and Perception. *Linguistic Portfolios*, *4*(1), 13.
- 109.Krashen, S. (1982). *Principles and practice in second language acquisition*, Pergamon: Oxford.
- 110.Kroll, B. (Ed.). (1990). Second language writing: research insights for the classroom. Cambridge: Cambridge University Press.
- 111.Laal, M., & Ghodsi, S. M. (2012). Benefits of collaborative learning. *Procedia-Social and Behavioral Sciences*, *31*, 486-490.
- 112.Lamb, B. (2004). Wide open spaces: wikis, ready or not. Educause Review, 39(5), 36-48.
- 113.Lan, Y. F., Hung, C. L., & Hsu, H. J. (2011). Effects of Guided Writing Strategies on Students' Writing Attitudes Based on Media Richness Theory. *Turkish Online Journal of Educational Technology-TOJET*, 10(4), 148-164.

- 114.Lang, E. M. (2003). "Rise of the blog" Infotech Update-of the AICPA Technology Section, Nov/Dec 2003
- 115.Lee, H. K. (2004). A comparative study of ESL writers' performance in a paper-based and a computer-delivered writing test. *Assessing Writing*, 9(1), 4-26.
- 116.Li, J. (2006). The mediation of technology in ESL writing and its implications for writing assessment. *Assessing Writing*, 11(1), 5-21.
- 117.Lightbown, P. M., & Spada, N. (2006). *How languages are learned* (3rd ed.).

 Oxford: Oxford University Press.
- 118.Limbu, M. (2011). Processing first-year college writing via Facebook pedagogy in linguistically and culturally diverse first-year composition classes. *Journal of International Students*, *I*(1), 59-62.
- 119.Little, D. (1991). Learner autonomy: Definitions, issues, and problems.

 Authentik: Dublin.
- 120.Lund, A. (2008). Wikis: A collective approach to language production. *ReCALL*,20(01), 35-54.
- 121.Long, M. H., & Robinson, P. (1998). *Focus on form: Theory, research, and practice*. In C. Doughty & J. Williams (Eds.), Focus on form in classroom second language acquisition (pp. 15-41). Cambridge, England: CUP.
- 122.Marandi, S.S.,(2011) Computer Assisted Language Learning. *The Handbook of Applied Linguistics in the Middle East (Eds.)*.

- 123.Meihami, B., Varmaghani, Z., & Meihami, H. (2013). The Effect of Collaborative Writing on EFL Students' Grammatical Accuracy. *International Letters of Social and Humanistic Sciences*, (11), 47-56.
- 124.McCarthy, J. (2010). Blended learning environments: Using social networking sites to enhance the first year experience. *Australasian Journal of Educational Technology*, 26(6), 729-740.
- 125.McDonough, J., & Shaw, C. (1993) Materials and methods in ELT, Oxford:

 Basil Blackwell
- 126.McDonough, J. & Shaw, C. (2003). Materials and Methods in ELT. Oxford OX4

 1JF: Blackwell Publishers Ltd.
- 127.McKay, S. (1993). Agendas for second language literacy. New York: Cambridge University Press.
- 128.Mingli, L. (2012). Research on three-part argumentative writings for English majors in China. *English Language Teaching*, *5*(7), p140.
- 129.Mohammadi, M., & Barzgaran, M. (2010). Comparability of Computer-based and Paper-based Versions of Writing Section of PET in Iranian EFL Context. *Sheikhbahaee EFL Journal*, 1(2), 1-13.
- 130.Mojarrad, H., Hemmati, F., Gohar, M. J., & Sadeghi,(2013) Computer-Based Assessment (Cba) Vs. Paper/Pencil-Based Assessment (Ppba): An Investigation Into The Performance And Attitude Of Iranian Efl Learners'reading Comprehension. *International Journal of Language Learning and Applied Linguistics World*. 4 (4). 418-428.

- 131.Murphy, E. (2009). Online synchronous communication in the second-language classroom. Canadian Journal of Learning and Technology/La revue canadienne de l'apprentissage et de la technologie, 35(3).
- 132.Muangnakin, P. (2012). 'EFL students' writing of English news articles in blogs', Proceedings of the Fourth International e-Learning Conference, Bangkok, pp. 87-95
- 133.Myles, J. (2002). Second language writing and research: The writing process and error analysis in student texts. *TESL-EJ*, *6*(2), 1-20.
- 134.Niazi, F.&Pourgharib B. (2013)The Effect of Using Email on Enhancing Iranian Intermediate EFL Learners Writing Proficiency. *International Research Journal of Applied and Basic Sciences*, 4(11), 3531-3539.
- 135.Notari, M. (2006, August). How to use a Wiki in education: Wiki based effective constructive learning. In *Proceedings of the 2006 international symposium on Wikis* (pp. 131-132). ACM.
- 136.Nunan, D. (1991). Language teaching methodology: A textbook for teachers. Edinburgh, Harlow, England: Longman.
- 137. Nunan, D. (1996). A Language Teaching Methodology. London, Longman
- 138.Nunan, D. (1999). Second Language Teaching & Learning. Heinle & Heinle Publishers, 7625 Empire Dr., Florence, KY 41042-2978.
- 139.Oczkus, L. D. (2007). Guided writing: Practical lessons, powerful results.

 Heinemann.

- 140.Oduntan, O. E., Ojuawo, O. O., & Oduntan, E. A. (2015). A Comparative Analysis of Student Performance in Paper Pencil Test (PPT) and Computer Based Test (CBT) Examination System. *Research Journal of Educational Studies and Review*, 1(1), 24-29.
- 141.Onazawa, C. (2010). A Study of the Process Writing Approach-A Suggestion for an Eclectic Writing Approach- Research Note, 153-163.
- 142.Onsoy, S. (2004). Students" and teachers" attitudes towards the use of computer-assisted language learning at the preparatory school of Celal Bayar University. *Unpublished Master*" s Thesis. Bilkent University Institute of Social Sciences, Ankara.
- 143.Ozer, O. (2004). CONSTRUCTIVISM in Piaget and Vygotsky. *The Fountain Magazine*, 48, 1-3.
- 144.Park, T. (2008). Scoring procedures for assessing writing. *Retrieved on July*, *14*, 2011.
- 145.Paltridge, B. (2001). Genre and the language learning classroom. Ann Arbor,MI: University of Michigan Press.
- 146.Panitz, T. (1999). Collaborative versus Cooperative Learning: A Comparison of the Two Concepts Which Will Help Us Understand the Underlying Nature of Interactive Learning.
- 147.Patrikis, P. C. (1995). Where is computer technology taking us. *ADFL Bulletin*,26(2), 36-39.

- 148.Pérez-Sabater, C. (2012). The linguistics of social networking: A study of writing conventions on Facebook. *Linguistik online*, 56(6/12), 82.
- 149.Peterson, E. R., & Irving, S. E. (2008). Secondary school students' conceptions of assessment and feedback. *Learning and Instruction*, 18(3), 238-250.
- 150.Pew Internet and American Life Project. (2007). Social networking websites and teens: An overview. Washington, DC: Pew Internet and American Life Project.
- 151.Pillemer, J. (1997). E-mail as a teaching tool. Retrieved March 15, 2014, from http://www.etni.org.il/jack.htm
- 152.Pincas, A. (1982) *Teaching English writing*, London: MacMillan.
- 153.Pinkman K (2005). Using Blogs in the Foreign Language Classroom: Encouraging Learner Independence. *The JALT CALL Journal*, *1*(1), 12-24.
- 154.Piper, A., (1987) 'Helping learners to write: a role for the word processor' ELT 4Journal, 41(2), 119-125.
- 155.Powers, D. E., Fowles, M. E., Farnum, M., & Ramsey, P. (1994). They Think Less of My Handwritten Essay If Others Word Process Theirs?. *Journal of Educational Measurement*, 31(3), 220-233.
- 156.Qian, X. (2010). A balanced approach to the teaching of intermediate-level writing skills to EFL students. *English Language Teaching*, *3*(2), p13.
- 157.Rastgoo, A., & Namvar, Y. (2010). Assessment Approaches in Virtual Learning. *Turkish Online Journal of Distance Education*, 11(1), 42-48.

- 158.Rahimpour, M. (2008). *Implementation of task- based approaches to language teaching*. Research on Foreign Languages Journal of Faculty of Letters and Humanities, 41, 45-61.
- 159.Raimes, A. (1983) Techniques in Teaching Writing, Oxford University Press
- 160.Reid, J. M. (1982). *The Process of composition*. Englewood Cliffs, NJ: Prentice Hall
- 161.Reid, J. (1993) *Teaching ESL writing*, Regents/Prentice Hall.
- 162.Reid, J. M. (2001). The Cambridge guide to teaching English to speakers of other languages. In R. Cater & D. Nunan (Ed.), Writing (p.23-33). Cambridge: Cambridge University Press.
- 163.Reinders, H. (2007). Big brother is helping you: supporting self-access language learning with a student monitoring system. *System*, *35*(1), *pp.* 93-111.
- 164.Richard-Amato, P. A. (1996). Making It Happen.New York: Addison-Wesley.
- 165.Richardson, W. (2005). Blog Revolution: Expanding Classroom Horizons with Web Logs. *Technology & Learning*, 26(3), 48.
- 166.Roberts, N., & Carter, R. (1988). Integrating computers into the elementary and middle school. White Plains, NJ: Prentice Hall.
- 167.Rueda, R., & Garcia, E. (1996). Teachers' perspectives on literacy assessment and instruction with language-minority students: A comparative study. *The Elementary School Journal*, 311-332.
- 168.Russell, M., & Haney, W. (1997). Testing Writing on Computers. *education* policy analysis archives, 5, 3.

- 169.Russell, M. (1999). Testing on Computers: A Follow-up Study Comparing

 Performance on Computer and on Paper. Education Policy AnalysisArchives, 7

 (20). (available online). http://epaa.asu.edu/epaa/v7n20
- 170.Russell, M and Tao, W (2004) Effects of handwriting and computer print on composition scores: a follow-up to Powers, Fowles, Farnum and Ramsey, Practical Assessment and Research Evaluation 9/1, retrieved from http://pareonline.net/getvn.asp?v=9&n=1
- 171.Sadler, D. R. (1989). Formative assessment and the design of instructional systems. *Instructional science*, 18(2), 119-144.
- 172. Saeidi, M., & Sahebkheir, F. (2011). The effect of model essays on accuracy and complexity of EFL learners' writing performance. *Middle-East Journal of Scientific Resear ch*, 10(1), 130-137
- 173. Safieddine, Z. N.(2014). Interactive Web 2.0 Technology in L2 Writing Classrooms. *Journal of Teaching and Teacher Education*, 2(2), 139-145.
- 174.Sani, I. (2012). The ESL Secondary School Student's Perceptions on the Uses of Computer in Developing Writing Skills. *International Journal of Educational Research & Technology*, *3*(2).
- 175. Sarıçoban, A. (2006). Instructional Technologies And Material Design For Foreign Language Teaching. Ankara: Anı Yayıncılık.
- 176.Sattar, S., & Nahrkhalaji, S. S. (2012). The role of email activities in EFL writing classes. *Retrieved from research. iaun. ac.* ir/pd/sattar737/pdfs/PaperC_6332. pdf (accessed 20/4/2014).

- 177. Scarcella, R. C., & Oxford, R. L. (1992). The tapestry of language learning: The individual in the communicative classroom (p. 63). Boston, MA: Heinle & Heinle.
- 178.Sheer, V. C., & Fung, T. K. (2007). Can email communication enhance professor-student relationship and student evaluation of professor?: Some empirical evidence. *Journal of Educational Computing Research*, 37(3), 289-306.
- 179.Setyono, B. (2014) Approaches in Teaching Writing Designed by High School English Teachers in Indonesia. International Journal of Sciences: Basic and Applied Research (IJSBAR). 14(1).
- 180.Sewell, D. (1990). New tools for new minds: A cognitive perspective on the use of computers with young children. New York: Harvester Wheatsheaf
- 181. Shojaei, A., & Motamedi A. (2014). Applicability Of E-Assessment In Iran As An Efl Context: From Fantasy To Reality. *International Journal of Language Learning and Applied Linguistics World*, 5(1), 112-13.
- 182.Sim, G., Holifield, P., & Brown, M. (2004). Implementation of computer assisted assessment: lessons from the literature. *Research in Learning Technology*, 12(3) 216 –229.
- 183. Skehan, P. (1998). A Cognitive Approach to Language Learning. Oxford Applied Linguistics. Oxford University Press, Great Clarendon St., Oxford OX2 6DP, England, United Kingdom..
- 184. Spandel, V. (2006). In defense of rubrics. English Journal, 96(1), 19–22.

- 185.Steele, V. (2004). Product and process writing. Retrieved on 5thSept. 2010 from http://www.englishonline.org.cn/en/teachers/workshops/teaching-writing/teaching-tips/product-process
- 186.Stiggins, R. (2005). From formative assessment to assessment for learning: A path to success in standards-based schools. *Phi Delta Kappan*, 324-328.
- 187.Swales, J. (1990). Genre analysis: English in academic and research settings.

 Cambridge University Press.
- 188. Swales, J. M. (2000). Further reflections on genre and ESL academic writing.

 In Symposium on Second Language Writing, Purdue University, Indiana.
- 189. Tangkiengsirisin, S. (2012). Approaches to Teaching Second Language Writing. LEARN Journal: Language Education and Acquisition Research Network, 3, 1-26.
- 190.Tompkins, Gail E. (1990) Teaching Writing: Balancing Process and Product.

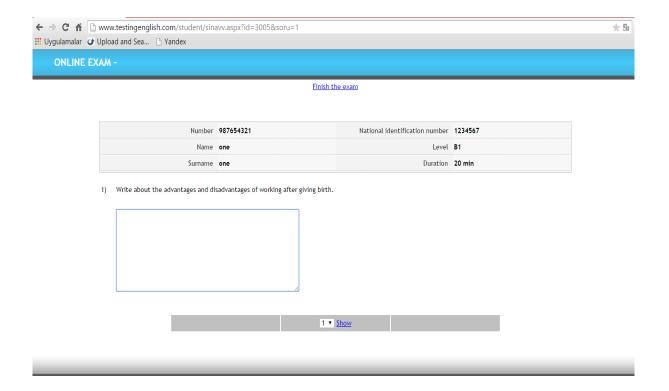
 Columbus: Merrill, Print.
- 191. Tribble, C, (1996). Writing, New York, Oxford University Press
- 192. Tsai, C. H. L. (2003). Issues of Validity in the Assessment of Writing Performance. Teachers College, Columbia University Working Papers in TESOL & Applied Linguistics, 4 (2).
- 193.Tu, C. C., Chen, P. C., & Lee, M. Y. (2007). Fostering EFL learners' writing competence through web-based guided writing. *WHAMPOA-An Interdisciplinary Journal*, *53*, 225-244.

- 194.Tuman, C. M. (1992). Literacy online: The promise (and peril) of reading and writing with computers. Pittsburgh, PA: University of Pittsburgh
- 195.Yang, S. H. (2009). Using blogs to enhance critical reflection and community of practice. *Educational Technology & Society*, *12*(2), 11-21.
- 196.Vygotsky, L. S. (1978). Mind in society: The development of higher psychological processes. Cambridge, MA: Harvard University Press.
- 197. Warschauer, M. (1995). E-Mail for English Teaching: Bringing the Internet and Computer Learning Networks into the Language Classroom. Teachers of English to Speakers of Other Languages (TESOL), Inc., 1600 Cameron St., Suite 300, Alexandria, VA 22314.
- 198. Warschauer, M. & Healey, D (1998) Computer and Language Learning: An overview. Language Teaching, 31 (2), 57-71
- 199. Warschauer, M., & Kern, R. (2005). *Network-based language teaching: Concepts and practices*. Cambridge: Cambridge University Press.
- 200. Wang, H., & Shin, C. D. (2009). Computer-based & paper-pencil test comparability studies. *Test, measurement, and research services*.
- 201. Wang, P. (2009). The inter-rater reliability in scoring composition. *English Language Teaching*, 2(3), p39.
- 202. Weedon, E. (2000). Do you read this the way I read this? British Journal of Educational Technology, 31(3), 185-197.
- 203. Weigle, S.C. (2002). Assessing Writing. Cambridge: Cambridge University Press.

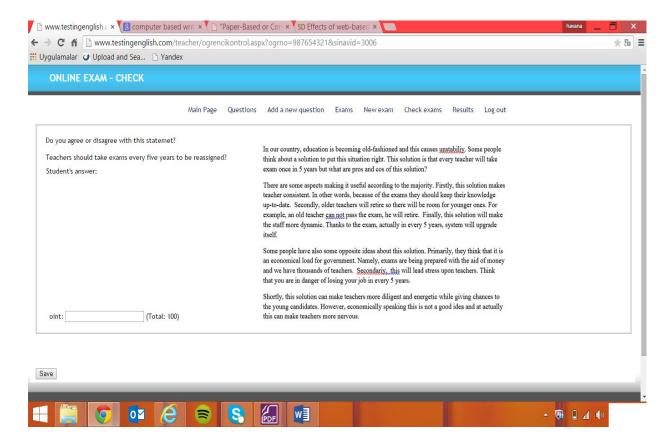
- 204.Jonsson, A., & Svingby, G. (2007). The use of scoring rubrics: Reliability, validity and educational consequences. *Educational research review*, 2(2), 130-144.
- 205. White, R., & Arndt, V. (1991). Process Writing. Harlow: Longman.
- 206. Whiteman, M. (1981). Writing: Th nature, development and teaching of written communication. Hillsdale, NJ: Lawrence Erlbaum Associates
- 207. Wilkins, D. (1990). Second languages: How they are learned and taught. *An Encyclopaedia Of Language*, 285.
- 208. Williams, J. (2005). Teaching writing in second and foreign language classrooms. Boston: McGraw-Hill
- 209.Wiseman, C. S. (2012). A Comparison of the Performance of Analytic vs. Holistic Scoring Rubrics to Assess L2 Writing. *Iranian Journal of Language Testing*, 2(1).59-92.
- 210.Wu,H.J.& Wu, P. L.(2011) Learners' perceptions on the use of blogs for EFL learning,US-China Education Review, 323-330.
- 211.Zamel, V. (1987) 'Writing: The Process of Discovering Meaning', in Long, M.H., and Richards, J.C. (eds.) Methodology in TESOL. A book of readings. New York: Newbury House
- 212.Zhang, D. (2009). The application of blog in English writing. *Journal of Cambridge studies*, 4(1), 64-72.
- 213.Zhu, E. (1998). Learning and mentoring: Electronic discussion in a distance learning course.

APPENDIX

Testing software exam view (online page)



An essay of a student on the software



Scoring Rubrics: Essay

	Maximum	Actual
	Score	Score
Format – 5 points	5	
Title centered (2),		
First line of each paragraph intended (2) margins left on		
both sides (1)		
Punctuation and Mechanics – 5 points	5	
Periods, commas, apostrophes and quotation marks (3)		
Capital letters (1)		
Spelling (1)		
Content – 20 points	20	
The essay fulfils the requirements of the assignment. (5)		
The essay is interesting. (5)		
The essay shows that the writer used care and thought. (10)		
Organization – 45 points	45	
The essay follows the outline, and it has an introduction, a		
body, and a conclusion. (5)		
Introductory Paragraph: The introductory paragraph		
begins with several general sentences and ends with a thesis		
statement. (5)		
Body		
Each paragraph of the body discusses a new point and		
begins with a clear topic sentence. (5)		
Each paragraph has specific supporting material: facts,		
examples, quotations, paraphrased or summarized		
information, and so on. (10)		
Each paragraph has unity. (5)		
Each paragraph has coherence. (5)		
Transitions are used to link paragraphs. (5)		
Concluding Paragraph: The concluding paragraph		
summarizes the main points or paraphrases the thesis		
statement, begins with a conclusion signal, and leaves the		
reader with the writer's final thoughts on the topic. (5)		
Grammar and Sentence Structure – 25 points	25	
Estimate a grammar and sentence structure score.		
Estimate a graninal and sentence structure score.		
Grand Total	100	

BİLDİRİM

Hazırladığım tezin tamamen kendi çalışmam olduğunu ve her alıntıya kaynak gösterdiğimi taahhüt eder, tezimin/ raporumun kağıt ve elektronik kopyalarının Akdeniz üniversitesi Eğitim Bilimleri Enstitüsü arşivlerinde aşağıda belirttiğim koşullarda saklanmasına izin verdiğimi onaylarım.

- □ Tezimin tamamı her yerden erişime açılabilir.
- Tezim sadece Akdeniz Üniversitesi yerleşkelerinden erişime açılabilir.
- Tezimin .. 4. yıl süreyle erişime açılmasını istemiyorum. Bu sürenin sonunda uzatma için başvuruda bulunmadığım takdirde, tezimin tamamı her yerden erişime açılabilir.

26.06 .2015

Havvana Asma

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Bilimsel Faaliyetleri :

İş Deneyimi

Çalıştığı Kurumlar : Akdeniz Üniversitesi Yabancı Diller Yüksekokulu,

İngilizce okutmanı (2010-...)

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Tarih : 26.06.2015

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In Turkish Education System, students start learning English from the 4th grade. This means that a student who has just started university has been learning English for nine years. This time span is long enough for a student to be fluent and competent in English. Unfortunately, the students who are in prep classes of most universities are not able to convey even the basic information about themselves, let alone speaking and writing about any topic. There are some reasons why they fail to learn it. A study carried out by Dincer, et.al (2010, p. 240) summarized the reasons of failure in language teaching English as

"teachers' individual characteristics, their field knowledge and teaching 20 capabilities, students' not giving importance to courses and their low motivation levels, poor curricula, insufficient course hours and materials in schools, artificial language environments and lastly negative peer factor".

liter and Guzeller (2005) also concluded that the absence of "a cross-cultural approach" in the teaching practice prevents students from being more conscious in the process. In the prep classes of Akdeniz University, there are three proficiency levels A2, B1 and B2 which are determined by Council of Europe (CoE). The students of Civil Aviation are expected to achieve A2 level, the students of other departments of 4-year-faculties are aimed to be at B1 level and the students of English Language Teaching and English Language and Literature should have a proficiency of B2 level. However, the biggest difficulty most of the students at all levels have is with writing although lots of writing practices like portfolios and online management system are employed. They cannot express themselves or their ideas using the correct 2 grammatical structures, vocabulary and appropriate organizational patterns. They even perform worse in the exams. It may be because of the exam pressure or the lack of self- confidence, literacy level and proficiency. A possible way to relieve the stress they have during the examinations could be to change the delivery mode of the tests. As they are more confident and secure with computer use, this could be benefited in helping them to show a better confidence in writing tests via computers. 1.2. Purpose of the Study As technology is gaining more importance and having a bigger role in our lives, a shift from traditional teaching and testing methods to innovative and technological is getting more inevitable. Although integration of technology is prevalent in the teaching process, the computers are not efficiently and commonly used in

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