The Impact of the Interactive Whiteboard on Medical School Students' ESL Essay Writing

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The Impact of the Interactive Whiteboard on Medical School Students' ESL Essay Writing

A Ph.D. Thesis in

"Teaching English as a Foreign Language (TEFL)"

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ABSTRACT

This study aimed to investigate the impact of the interactive whiteboard (IWB) on the Egyptian medical school students' ESL (English as a Second Language) essay writing and attitudes towards writing. The study clarified the evidence regarding Egyptian medical students' relative weakness in writing as compared to the other language skills. It therefore investigated the general areas of writing, and identified the writing skills essential for the medical students, and designed a module based on these identified skills. An experimental design was adopted. The sample was composed of sixty students randomly selected and later divided into two separate groups: one intervention group which was taught by the IWB and a control group by the traditional method which involved teaching with a pen and paper, and a whiteboard. Four instruments were used: 1) a writing micro-skill questionnaire investigating specialists' views on the skills important to the medical students; 2) a writing test assessing students' achievement in ESL essay writing; 3) a writing attitude survey assessing students' views about writing before and after both methods were used. These instruments were applied to both groups, as well as an additional IWB Attitude survey assessing students' views about the IWB before and after the intervention for the intervention group. Results reveal that twenty nine writing skills were required by students, according to the specialists' views and, more importantly, the IWB had no positive impact on the Egyptian students' attainment in ESL essay writing (a non- significant effect size of -0.18). By contrast, it is revealed that the IWB had a positive impact on students' attitudes towards both writing (effect size of 1.88) and towards the board itself.

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LIST OF ABBREVIATIONS

Abbreviation

ESL (English as a Second Language)

ELT **(**English Language Teaching)

ESP (English for Specific Purposes)

IELPII (Integrated English Language Program II)

IWB (Interactive Whiteboard)

L1 (First Language)

L2 (Second Language)

LEA (Local Educational Authority)

MFL (Modern Foreign Language)

Pc. (Present perfect)

Pp. (Past perfect)

TEFL (Teaching English as a Foreign Language)

TESL (Teaching English as a Second Language)

Vocab. (Vocabulary)

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BACKGROUND TO THE RESEARCH

The prompt that instigated the researcher to carry out research in teaching English is his experience in Teaching English as a Second Language (TESL), also sometimes called Teaching English as a Foreign Language (TEFL). Generally, there were two kinds of experience involved. The following is a record of these two kinds.

The first was his work in TESL/TEFL for thirteen years and in Applied Linguistics for nine years concurrently. This kind of experience was focused on improving the reading, writing, listening and speaking skills of the Egyptian English as a Second Language (ESL) students. During the academic year 2005 - 2006, when a number of the Suez Canal University Medical School students were interviewed on their language skills, it was observed that the writing of those students was not reaching a satisfactory level (Table (1) in Chapter I shows this). Eventually, the underlying reason for this was, and has been, that the educational policy makers in Egypt have a prevalent assumption that since these students were *Medical* School Students, then accordingly their academic written English must be excellent. Therefore, they have decided that ESL as a subject only need to be taught for the first two years of the students' academic study at any school of medicine across the entire country. This does not actually address the students' needs, as well as the other medical stakeholders' (i.e. medical instructors') requirements, for maximised, comprehensive, advanced, and communicative English of which writing stands out as a key component.

It is noteworthy that the medical students' writing is regarded as an 'important' and a 'crucial' skill. However, it is considered as somewhat neglected and as fairly not given due attention on the part of educators at the medical school (Chur-Hansen & Vernon-Roberts, 2000: 642). To quote their own words,

‘[W]riting is an important skill for practitioners and students, yet this is a skill rarely taught in a formal capacity at medical school’.

Obviously, it is also worth mentioning that a number of studies (e.g. Showalter & Griffin (2000) Chur-Hansen & Vernon-Roberts (2000), Pololi et al. (2004), Ludbrook (2006), Burch et al. (2005), Chur-Hansen (2000), Bergus at al (2006), Langford et al. (2004), Edwards et al. (2001), Moran et al. (1991), and Zhuo (1989)), have all stressed the importance of medical students’ writing of English. However, what made the teaching of writing at the school less effective was the observation that the educational technologies used there had always been the same: Data Shows, Over-Head Projectors, and Magic Lamps.

The second factor was the experience of the researcher’s study of Academic English at the Language Centre at the University of Durham to attain a good academic language proficiency level sufficient for studying in the UK. The key influence was when the researcher observed the positive attitudes of other learners who were taught by an Interactive Whiteboard (IWB). This therefore stimulated the question: why not investigate this technological invention in his home university where such a technology has not been introduced in order to find out if it might influence the attitudes of the fore-mentioned towards writing and the improvement of these students’ ESL essay writing skills?

CHAPTER I

INTRODUCTION

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CHAPTER I
INTRODUCTION

Introduction

This study attempts at identifying the impact of the interactive whiteboard on Egyptian Medical School students' ESL essay writing for the first time in Egypt. These students were enrolled in the Medical School at the Suez Canal University. The study is composed of five chapters. Chapter I both addresses the problem of the study and gives the rationale for it. Chapter II investigates and examines literature critically. Chapter III establishes the methods adopted and the procedures followed in order to attain the 'purpose of the study' (see the end of this chapter). Chapter IV analyses results statistically and discusses them in light of other research. Chapter V offers a summary of the study, draws conclusions, and offers recommendations and suggestions for further research based on the findings of the study and other research.

This chapter states the problem of the study and provides the rationale for conducting it. This is done by analysing the state of the Egyptian Medical School students' writing by drawing attention to and even providing the grounds for the intervention with the IWB to achieve the purpose of the study. This chapter also states this purpose and clarifies the significance for conducting the study.

Statement of the problem

The area of inquiry for this study has two aspects. The first emanates from the fact that the Egyptian Higher Education system in general and the Suez Canal University regulations in particular do not allow the teaching of ESL writing (whether within an English course or within another course) to the Medical School students except during their first two years. During these two years, they do little further practice on *paragraph* writing which they learn at the secondary stage. They do not know or practise aspects of *essay* writing. This has resulted in the Suez Canal University students being weak in ESL essay writing. This weakness is documented in the IELPII's (Integrated English Language Program II's) Language Skill Questionnaire Results whose data were collected by the researcher in the academic year 2005-2006. The IELPII Program was a

USAID funded program targeting a number of goals including improving the situation of the English language of the Egyptian students in general. Table (1) below shows the weakness in the students' writing as indicated by their lecturers', assistant lecturers', physicians', and current students' opinions at the Medical School at the Suez Canal University.

Table (1)

IELPII's Language Skill Questionnaire Results

Question	**Percentage of participants giving a specific answer**											
How far are you satisfied with the following language skills of the current students?	Lecturers - 10 lecturers of different specialities, e.g. Obstetrics, Anaesthesia, Orthopaedics, etc.			Assistant lecturers with teaching roles - 10 in different specialties			Graduate students/ current physicians- 10 in different specialties			Current students 20 in different specialties in 3rd & 4th years – 14 from 3rd year & 6 from 4th.		
	Very satisfied	**satisfied**	**dissatisfied**	**Very satisfied**	**satisfied**	**dissatisfied**	**Very satisfied**	**satisfied**	**dissatisfied**	**Very satisfied**	**satisfied**	**dissatisfied**
Listening	%20	%20	%60	%20	%20	%60	%10	%30	%60	%0	%25	%75
Writing	**%10**	**%20**	**%70**	**%10**	**%20**	**%70**	**%10**	**%30**	**%60**	**%5**	**%40**	**%55**
Speaking	%20	%20	%60	%10	%20	%70	%10	%20	%70	%10	%20	%70
Reading	&50	%50	%0	%50	%40	%10	&70	%20	%10	%70	%20	%10

It is, however, noteworthy that continual practice and training on writing in the second language may substantially make way for improved communication in writing (Tomlinson, 1983: 7).

Also, although for the medical school students, such a practice and training should be 'open ended' (Showalter & Griffin, 2000: 165), their problem has other aspects. Having studied only paragraph and short letter writing at an intermediate stage in their preparatory and secondary schools before being admitted to the medical school, the medical school students at the Suez Canal University find it quite challenging to follow the rules of sustained and more advanced forms of writing, and therefore, to develop

more practical writing skills after just one year at the medical school. Hence, this tends to limit their writing to the intermediate level.

Analytically, the courses of English delivered to the medical school students at the University in the first two years have in general focused on long reading passages, grammar, medical terminology, dialogues, and medical diagrams, all of which are mostly within the medical context. Although, as discussed earlier, Showalter & Griffin (2000), Chur-Hansen & Vernon-Roberts (2000), Pololi et al. (2004),
Ludbrook (2006), Burch et al. (2005), Chur-Hansen (2000), Bergus et al. (2006), Langford et al. (2004), Edwards (2001), Moran et al. (1991), and Zhuo (1989) all emphasize that writing well is crucial to the medical school students, such courses provide students with *no* time to practise writing in order to reach more demanding levels or even to maintain the same intermediate level they have achieved in their secondary schools.

Obviously, it should be made clear that time for practice is important. Furthermore, it should also be clarified that language would be 'influential' if ESL learners practised not only stressed basic rules but also more advanced ones as 'critical discourse analyses' (Cots, 2006: 336). In addition, learners of ESL writing should use 'peer feedback' to improve their writing (Rollinson, 2005: 23). Also, there should be more care about the grammatical accuracy to achieve an advanced level in writing (Vickers & Ene, 2006: 109). Thus, it can be concluded that this aspect of the problem broadly shows there are weaknesses in the Suez Canal University Medical students' writing.

The second aspect is reflected in the Egyptian universities' slow progress in using up to date technologies in teaching medical school students how to write well. It is noteworthy that the technological advances 'require teachers and administrators to review which equipment they should use' (Timucin, 2006: 262). As will be discussed intensively later, technology, such as the IWB, could make a difference once it is introduced to the language domain. Evidence for this claim is addressed below.

In a quickly changing classroom environment, the IWB has appeared as a technological innovation involved in teaching. It is worth mentioning that the IWB has the form of a special board which is integrated with other technologies so that it can perform its function. The IWB is a big touch sensitive surface which is connected to both a computer and a digital projector. The role of the projector is to transfer what appears on the computer and to make the image visible and controllable on the board. The software made available for the functionality of the board (such as Promethean's ActivStudio or SMART's toolbox), or obtained separately, provides a variety of functions, including those which replicate non-digital technologies (Kennwell & Higgins, 2007:207).' These technologies include 'flipcharts, dry-wipe boards, overhead projectors, slide projectors and video players' (Kennwell & Higgins, 2007: 207). As a name of one of the IWB software companies implies, 'SMART' appears to imply intelligent ways of dealing with a wide range of options (Stein & Nyree, 2005: 1-2).

Added to the functions mentioned earlier, additional features include 'moving, showing, hiding, highlighting, animating, retrieving objects' (Glover et al., 2005). When controlling or writing on some boards, a special pen has to be used, others are controlled by a finger touch or both. It is worth mentioning that not only can the board be used for writing but also it can be used for all language skills. For instance, Cogill (2004) mentions some characteristics of the IWB, e.g. reducing the time of scribing, exposing good display of information, having increased participation levels, and being interesting, suitable for whole-class engagement, and helpful for making revision and doing collaborative tasks. Companies manufacturing the IWB offer it with different further functionality, such as speakers or voting systems (Becta, 2003: 1-2). Although mainly referred to as an interactive whiteboard (IWB or IAW), or SMART board (one of the proprietary names), it is also sometimes referred to as an electronic or digital whiteboard However, there appears to be some controversy about the degree of benefit behind its utilization.

It appears that in the research literature there are somewhat conflicting views as for the IWB uses or the outcomes behind the uses. For instance, on one hand, according to

Kennewell & Morgan (2003: 67), 'IWBs improve standards in the classroom and increase motivation'. However, on the other hand, Robinson (2004) deduces that the use or lack of use of the IWB is not a crucial factor that improves students' achievement in mathematics.

Other contradicting views are identified. While the IWB can be seen as expensive (Smith et al., 2005: 99), it is regarded as revolutionizing learning to the extent that the UK government has been investing intensively in the equipment; Charles Clarke, the British Government's former Secretary of State for Education and Skills was quoted to have said, 'every school of the future will have an interactive whiteboard in every classroom, technology has already revolutionized learning' (Arnott, 2004). This is an argument with a longer history. However, as Gerver (1984: 11) argues that the opponents of computers state that they do not necessarily help with the improvement of learning, yet this reason is not enough to stop using them (ibid: 11).

At heart, actually, it is widely known that computers give many choices for both teachers and adult students and, therefore, they do matter for adult education (Gerver, 1984:1-2). Generally, they provide a real potential for a number of intriguing and different possibilities (ibid: 1-2) and are encouraged to be widely used for assessment purposes in humanities (McKenna, 2000: A.7). They can also provide 'attractive options' (ibid: 4) as they have the ability to introduce new content, give the opportunity to practise, revise and state mistakes (ibid: 40). Lim (2001) finds that there is a strong relationship between learners' satisfaction with computer-based learning delivered through distance education web courses and their intention to be enrolled in web-based courses given in the future. It is understood that the same may apply to the IWB as it is computer-enhanced equipment.

Rationale for suggesting the IWB as an intervention

In the following section, it will be theoretically proposed that, because the potential benefits of the IWB are so varied, whether in classes where English is taught or in other classes where other subjects are the focus, because there is no study testing the impact of

the IWB on medical school students' writing, because the general evidence drawn from computer-aided language instruction cases has shown positive impacts of other computer technologies on language instruction in general or on ESP/medical students' writing in particular, and because the technology is new to the Egyptian context, it might be possible that the invention of the IWB could have a positive impact on improving the Egyptian medical school students' ESL essay writing.

Benefits of the IWB

It is argued that the IWB generally enables teachers to "integrate ICT into their classroom". It is explicitly claimed that the board can offer them 'challenges and opportunities' (Beauchamp, 2004: 327). This is generally beneficial and results in more professional development (Somyurek et al., 2009). It is also stated that the IWB can help with developing young learners' reading and writing at a basic level and it can also be used to test their understanding (Becta, 2003). However, it is sometimes counter-argued that the position and size of the IWB is not suitable to be seen by all students (Foster, 2008; Smith et al. 2005). This can be avoided by larger size versions called symposium tablets (Foster, 2008).

From the perspective of TESL, as stated in a number of studies, teaching with the IWB may facilitate the delivery of material. According to Gerald et al. (1999), this happens in three ways: the IWB can present linguistics and socio-cultural elements, it is supportive of interactivity in the classroom, and it can help the teacher organize their materials. It is also concluded that the technology is useful to students' acquisition of language (ibid.). http://www.waukeshaschools.com (2002) states that it is an idea to "Have kids come up and make changes using editing and proofreading marks. Also use highlighter tool to highlight nouns, verbs, adjectives, etc." Kennewell and Higgins (2007: 207) further clarify that the status of the IWB is different from those of other new technologies. To quote their words,

> It is unusual to focus educational research on a particular piece of equipment, but the IWB seems to have a pedagogical and cultural status-in the UK- at

> least-which makes it different from other pieces of new ICT equipment. In particular, it has been enthusiastically adopted by almost all of the teachers who have one installed in their classrooms, and is sought after by many of the teachers who do not currently have access to one (ibid.: 207).

Another aspect of IWBs in general is that they provide multimodal opportunity for delivering information. Jewitt (2008) gives a rationale for this "multimodal representation", p. 245. Jewit's study raises the question: what is the benefit and nature of multimodal texts? According to the study, the term "multiliteracies" was introduced to educational researchers by the New London Group (1996). The study also points out that in this key position paper, a group of literacy educators asked for literacy pedagogy to conform to the global capitalism, particularly to the new demands placed on the workforce. To quote his words,

> The multiliteracies model highlights two interconnected changes in the communicational landscape that impinge on what it means to be literate. These are the increasing significance of cultural and linguistic diversity in a global economy and the complexity of texts with respect to nonlinguistic, multimodal forms of representation and communication, particularly, but not limited to, those affiliated with new technologies, p. 245.

Furthermore, students agree that the IWB embodies a medium through which useful oral activities are introduced, new experiences gained, and motivation towards learning raised (ibid). It could then be understood that the IWB has many benefits in language instruction. For further and more precise investigation, the following reviews research addressing the impact of the IWB in different areas of study, with particular focus on TEFL, which is the main area of the present study, and discusses the results.

Jones (2004) supporting the views mentioned earlier, draws the attention to the benefits of IWBs by stating that "[a]lthough this form of technology is relatively new, there is an emerging body of literature on their effective use in teaching and learning", p. 5. She also quotes Becta (2003) as stating a number of benefits for them:

- Encourages more varied, creative and seamless use of teaching materials;
- Engages pupils to a greater extent than conventional whole-class teaching, increasing their enjoyment and motivation;
- Facilitates pupil participation through the ability to interact with materials (ibid., p. 5).

In a study by Schmid (2006), the possibility of using an IWB voting system in an English language class was verified. The brand of the IWB used was called the Promethean TM System which had some software and peripheral hard tools complementing the use of the technology. The software included the ACTIVote which helped with voting through the Promethean IWB. The ACTIVote system could enable students to vote during assessment or grammar practice lessons. The teacher could know the percentage of students with both right and wrong answers and could therefore provide feedback depending on the ratios of students giving the two types of answers. It is noteworthy that this can be seen as a major improvement in knowing students' collective answers very quickly, saving much time and effort, and thus providing feedback sometimes based on the percentage of students who give wrong answers.

Schmid's study (ibid.) is thought to focus on the principle of interactivity in learning and to enhance it. Interactivity should be a basic component in a classroom, as this element is recognised as *the key to both learning and sustained interest.* Miller et al. (2004), therefore, have suggested that in order for interactivity to be effective, it should have well-organized lesson planning, with graded leaning of concepts, enough time for activities and revision of knowledge. These can make the various uses of the technology more successful. According to Glover et al. (2005), both teachers and students can learn from it towards their best use. To quote their words,

> Enhanced interactivity requires an understanding of the way in which both teachers and pupils gain from the use of technology and demonstrate there is a progression

> at all levels in learning to use the equipment and associated software to educational advantage (Glover et al., 2005:155).

However, it might be argued, although voting through the technology is important, still most of the countries all over the world do not even use the technology as it is recent – as denoted earlier. Also, when a writing class is considered, not all activities can be used through voting: the teaching process then would involve other purposes (e.g. presenting advanced sentence structure, new vocabulary, grammar, punctuation rules, etc.) which adult students may need to be shown to develop their understanding. To maintain a balance, it could be suggested that a teacher close the specific tools or functions when it is necessary. It is generally thought that voting may appear to be useful with improving interactivity, but there are other aspects to be considered, too. For instance, Levy (2000) claims that the IWB may ensure more discussion and enjoyment on the part of both teachers and the students. It may not always be the case that such interaction supports better learning, however.

In a study investigating the impact of the technology on Middle School students' mathematics, Robinson (2007) investigated the use (or lack of use) of the IWB in two seventh-grade classes teaching a unit on "transformations". One class used the IWB while the other did not use it. Results revealed that the students' attitudes towards the IWB and towards learning mathematics were raised while yet there were no differences in the pre and post scores regarding the content of the course.

In a study (which is to some extent similar to the present one) undertaken to investigate "the impact of the interactive electronic whiteboard on (*first* language) writing achievement, writing attitudes, and computer attitudes among ninety eighth graders" in junior high school during a six week period, Bell (2000) reached somewhat positive results. She had two groups, a treatment group taught by an interactive whiteboard, video, and projector and a control group taught in the traditional manner. After the experiment, she found out that the students' achievement in writing was not statistically

different in both groups, but that students' attitudes towards computer use were improved, and that their attitudes towards writing were improved, too.

It is broadly assumed that the IWB has many positive and varied uses. This is obvious in that, throughout courses, it is versatile, with applications that can be conducted for different ages, according to Smith (1999). It can be used in different types of classes, engineering, medicine, law, business, agriculture, education, for example, which makes clear its far suitability to teaching in ESP classes. Besides, it is believed that it has the ability to take both the students and the teachers out of the tedious class atmosphere that might sometimes occur in classrooms (Gerald et al., 1999), which, in turn, could be viewed as an important role the Interactive Whiteboard can play. Also, actually, there is much to be said in this respect.

Thus, it is concluded that the IWB has various benefits in teaching various subjects in general. This is clear in the many functions it has, the opportunities it provides, the challenges it creates, and the enjoyment it offers to the students. Then, it can be clearly deduced that the IWB use is useful. However, it is been seen that its impact on ESL writing/medical school students' writing has not been investigated.

The IWB and teaching ESL writing

As has been revealed from literature, the IWB has not been researched in teaching ESL writing at University level. Nor is there a study investigating the impact of the IWB on medical students' writing whether as a first or second language. This is why the present study attempts to fill up this gap – using the technology in an ESL context. Actually, as discussed earlier, the only study which investigated the impact of the IWB on junior high school students' writing, attitudes towards writing and attitudes toward computer use was conducted to L1 mathematics students by Bell (2000). Again, she found out that the students' achievement in writing was not statistically different in both groups, but that students' attitudes towards computer use were improved, and that their attitudes towards writing were improved, too.

Research investigating the impact of the IWB on L1 English (which includes writing) was also found. In 2003-4 , in one of the largest-scale studies conducted to evaluate the teaching/ learning success based on comprehensive installation of IWBs in England, a pilot program called "*Embedding ICT in the Literacy & Numeracy Strategies"* was administered (Higgins et al. 2005). In this program, data were collected from secondary school teachers and their students whose ages were eleven years old in three subject areas: English, mathematics and science in sixty seven schools in six Local Educational Authorities (LEAs). The areas of investigation were students' achievement, structured lesson observations, and the perceptions of both teachers and students. The results found that the technology use led to changes in teachers' practices. Also they clarify that the perceptions of teachers and students were very positive. The results also clarify that the impact on students' attainment on the national tests was statistically significant. However, the effect-size in English, which is the main concern in this section, was 0.04. This means that it was a very small effect.

In a later evaluation (2004) within the same program, the effect size for English was *0.02*, which is "very small and short-lived", as reported later by Higgins (2010: 8).

However, it is clear that the previous study was conducted with primary school LI students. Also, it involved the teaching of the other language skills (i.e. reading, speaking, and listening) together with writing.

Of the previous, it can primarily be deduced that, the IWB appears not to have been used in teaching ESL writing. Nor is there a study investigating the impact of the IWB on Medical School students' writing whether as a first or as a second language skill.

To investigate studies of other technologies, too, and to see if other technologies have an impact on ESL writing in general or medical school students'writing in particular, the following section addresses this issue.

Impact of other technology on writing, particularly on medical students' writing

The following will demonstrate a number of various impacts of computer-aided, or computer supported, language instruction on writing, identifying those, if any, relevant to medical school students' writing development. Actually, this kind of instruction does have an impact on writing. The following justifies this claim.

Merchant (2003: 104) states that '*the use of ICT for communicating with those not physically present in the classroom can add a new dimension to literacy work.'* They depict that the use of *e-mail* can raise the level of those who begin writing a foreign language. E-mail can make students more innovative in the ways they write to new people. It is evidently clear that email can assist teachers' work either before writing, during it, or after it happens and it can be used via an IWB connected to the Internet.

In line with the previous study, Vincent (2001: 242) demonstrates that children with a 'visual learning style' benefit when instructed with a computer assisted with a 'rich software medium'. The results of research they conducted revealed that children's writing was as rich in quantity and proficiency due to the use of animations and other visuals as when they involved in narrative tasks.

As a computer (or IWB) facility, the Web is considered a useful tool in developing second year junior college students' language skills (Yang, 2000: 85). The web can also offer a wide range of teaching and learning possibilities: the interactive appearance, abundant resources, online audio visuals can make the Web a valuable medium (ibid.).

Also, when Garrison et al. (2000: 211) delivered a medical course via the web, this kind of distance learning, according to them, was a success (ibid, 216). This reflects how such a tool is valuable in education and can overcome the barrier of distance .

Web logs were used to develop the medical school students' writing, reading, and communication skills in ESP (Arani, 2005). Forty ESL students of Medicine who were enrolled in at the Kanshan University of Medical Sciences and whose English was upper intermediate were divided into two classes. Both classes were given a course. The

first class was taught the course through a web log and the other through a traditional way. Results reveal that the web log taught class produced better work although it was their first time using a web log. Arani (ibid) states that the web log 'provides teachers with an exciting new way to approach communicative language learning, it also, despite facing challenges, gives the students a new reason to enjoy reading and writing in ESP'.

Therefore, it can be seen that, as has previously been demonstrated that many media used in computer-aided language instruction, especially in the instruction of writing to the medical school students, can be of interest and real help generally to all students and particularly to the visuals. (Also, it could be understood/ deduced that the IWB, in the capacity of being a computer, enhances E-learning possibilities and overcomes the distance barriers.)

Of what has totally been claimed and addressed, it can also be concluded that the assumption that the IWB could help with improving the writing of the medical school students is supported in many ways. For instance and in short, the technology has varied benefits and is useful. It has not been used in developing TESL writing/ the medical school students' writing. Other technology has impact on the writing of ESP. The IWB enhances e-learning possibilities in the same way other technologies do.

Thus, the IWB, which is also a medium for computer-aided language instruction, can be theoretically regarded as a useful technology which could help with developing the writing of ESP in the same way as other media did. Also, not only could it then help with writing ESP but it might also be predicted that it could be positive to *all* activities in language teaching. This sheds light on a possibility of utilising such up to date technology in new places different from those where it has been introduced.

Testing the impact of the IWB in a new context

Although it has as many positive aspects as the other computer inventions, as has been demonstrated, this technology, as mentioned earlier in this chapter, has not reached all parts of the world. For instance, it has recently been observed that the Egyptian

universities in general and the Suez Canal University, one of the regional universities in Egypt, in particular do not use the IWB in their teaching of English, nor of any other subject, at the university medical school. Even, most universities in Egypt have been noticed not to have the knowledge of how to use it mainly because the IWB is a relatively new invention recently presented in such Western countries as the United Kingdom, Germany, Canada, and otherwise. Since the IWB has many applications, e.g. presenting, saving, modifying/manipulating, integrating, erasing, and searching for information, since it also annotates, conceals, moves, and manipulates images (Levy, 2002; Thomas, 2003), and since it can bridge the gap between teaching and learning styles and visualise concepts (Dacott et al., 2000), it is *versatile with all ages across the curriculum* (Smith A, 1999) and so could make a difference in teaching. It increases efficiency though allowing resources on the World Wide Web (Walker, 2003). Since it gives the opportunity for discussion in a classroom when compared to other technologies (Gerald et al., 1999), it could be deduced that it can be of a real match to the Blackboard, and even to other aids used in teaching academic writing, such as the Overhead Projector and the Data Show which have basically still been used in Egypt for the last twenty years. Further, it could be wondered why such a technology is not used to improve the academic writing of the Medical Students whose writing was described as *at a low level*.

The educational system in Egypt has not yet benefited from the advantages of such a new technology as the IWB.

In conclusion, it has been obvious that the rationale that the IWB can be used for improving ESL medical school students' writing has been established. The problem of the study was presented: it was shown that the medical school students had relatively weak writing skills; besides, it was explained that the Egyptian government did not use up-to-date technologies.

Also, four sub-sections have been covered to establish the rationale. the first one addressed the benefits of the technology, the second the studies involving both the

technology and writing, the third the studies involving other technology and writing, particularly medical school students' writing, the fourth testing the impact of the IWB in the Egyptian context.

As has been seen in the first sub-section, there are benefits for using the IWB. This has been clear through the varied uses of the technology: IWB generally enables teachers to integrate ICT into their classroom; it may facilitate the delivery of material; it provides multimodal opportunity for this delivery; students agree that the IWB is a medium through which useful oral activities are introduced, new experiences gained, and motivation towards learning raised; the possibility of using an IWB voting system in an English language class was confirmed, the IWB provides an opportunity for and improves on interactivity; students' attitudes towards the IWB and towards learning Mathematics were raised; and mathematics students' attitudes towards computer use and towards writing were improved. All these issues confirm that the benefits at least exist.

As has been revealed in the second sub-section, there is no study investigating the impact of the IWB on medical school students' writing whether it is L1 or L2 writing. The only study which cannot be directly related is Bell's (2000) which addressed *high school* students' L1 writing and which found no impact on achievement. Also, it looks like there is no study assessing the impact of the technology neither on *L2* writing, nor on medical school students' *writing* (whether L1 or L2).

As has been recognised in the third sub-section, the media used in computer-aided language instruction, especially in the instruction of writing to the medical school students, is of interest and real help to the students: the use of *ICT* for communicating with those not physically present in the classroom added a new dimension to literacy work, the *World Wide Web* was considered a useful tool in developing second year junior college students' language skills, and *web logs* were used to develop the medical school students' writing, reading and communication skills in ESP.

As clarified in the fourth sub-section, it is noted that the educational system in Egypt has not benefited from the advantages of such a new technology as the IWB yet.

Due to the previous rationale, the present study attempts to fill the gap in knowledge observed. Hence, it is important the purpose of the study be pinpointed.

Purpose of the study

The main purpose of this study is to practically find out/ investigate the extent to which teaching ESL essay writing with the IWB, as compared to teaching it with the traditional method (in which students rely on pen and paper, and a whiteboard), is positive or negative to the Suez Canal University Medical School students' achievement in ESL essay writing (which they have not done before). This study also aims at reaching a list of writing (micro-) skills important to the medical school students. It further aims at discovering the students' attitudes towards ESL essay writing. Additionally, it aims at discovering the students' attitudes towards the IWB

Significance of the study

It is expected that this study will be significant as it may:

1. help identify the micro-skills involved in writing in general in the quest for identifying those important to the Medical School Students.
2. Level out the writing micro-skills, identify related frequencies in literature, and offer a model as to how the great skill of writing should be composed of little components at different levels from a practical point of view..
3. identify the writing micro-skills important to the Medical School Students.
4. teach *essay* writing skills for the Medical School Students for their first time in Egypt
5. teach writing skills for the Medical School Students *third year* for their first time in Egypt.
6. improve Medical School Students' writing skills
7. establish the knowledge database about the impact of such a new technology as the IWB in Egypt.

8. be a starting point for investigating the impact of the IWB on ESL essay writing
9. encourage further research on investigating the impact of the IWB on the other language skills: reading, listening, and speaking
10. develop a teaching approach to overcome the Medical School Students' weaknesses in ESL essay writing.

Therefore, the related studies of both writing and the uses of IWBs and similar technologies in teaching will be reviewed to the latest of knowledge in the next chapter. The academic literature will be critically examined for seeing how successful research to date has been in clarifying what is involved in the 'proficiency of the writing' in general and the wiring of the Medical School students in particular. Also, the components of this skill will be analysed. Also, students' attitudes towards the IWB, as a potential tool for support as clarified earlier, and towards other technology will be explored in the same way. Likewise, the impact of the IWB and of other technology in different domains, with a particular focus on English essay writing, will have a thorough investigation.

CHAPTER II

LITERATURE REVIEW

- **Writing**
  - ***Medical school students' ESL writing***
  - ***Writing Micro-skills***
- **IWB**
  - ***Students' attitudes towards the IWB as an educational tool***
  - ***A focus on impact of the IWB in different subjects***
    - **Impact in mathematics**
    - **Impact in chemistry**
    - **Impact in special education**
    - **Impact in health**
    - **Impact in music**
    - **Impact in English**
  - ***Impact in teaching in general***
  - ***Pedagogy***
- **Impact of other technology on writing**
- **The IWB – implications of change and a new culture**
- **Conclusion**

CHAPTER II
LITERATURE REVIEW

Using the IWB for improving the medical school students' ESL writing needs investigation. Although the impact (or effectiveness) of the tool on achievement and learning more broadly has been variable, it can be seen that its impact or effectiveness on student attitudes is more straightforward and there is clear evidence in favour of a positive effect. This is obvious in a large number of studies in various subject areas other than medicine (e.g. Higgins et al., 2007). However, when medicine is concerned, or more specifically, when medical school students' academic writing is considered, evidence about any effect of the IWB is absent although there is evidence that related technologies can help in improving the students' academic writing and that the IWB can support with teaching in general.

To assess this potential further, related issues on writing, IWB, and other technology will be investigated and reviewed critically. A number of related sub-issues will be addressed from the literature so far, and medical school students' ESL writing in particular will be discussed. Under the IWB section, students' attitudes towards the IWB will be identified. The impact and effectiveness of the technology in various subject areas, i.e. mathematics, chemistry, music, special education, and English, will be discussed in more depth, too. Furthermore, related issues will be discussed in terms of teaching, and the pedagogy supporting the use of the equipment will be addressed. Finally, the impact of other technologies on writing and the implications of change the equipment brings over will be highlighted.

Writing

Medical school students' ESL writing

Medical students' writing, in particular, is claimed to be a relatively distinguished and important skill which is different from other skills involved in the medical field. In this section, this skill will be highlighted. According to Showalter and Griffin (2000: 165),

> [W]riting is not just a mechanical tool that doctors need to use, like a scalpel; learning to use language well is basic to a doctor's ability to communicate deeply with patients, to find the right words for the right moment, and to address ethical problems with sensitivity and critical awareness.

They (ibid: 165), commenting on Chur-Hansen's research on developing the writing of the medical school students, see that teaching medical students to 'develop an argument' or 'critically evaluate theories' requires 'a sophisticated connection between thinking and writing that cannot be self-taught'. They clarify that, in teaching such a sophisticated connection, students should know what an argument is, how a theory can be criticized, how a record of an argued topic and evaluation be conveyed to colleagues, patients, and the public. Thus, it seems that, to Showalter and Griffin (2000: 165) at least, writing medical-related essays should concentrate on raising students' level of consciousness regarding what they will do, as this helps with attaining the overall goal of developing important skills for writing.

Medical students' writing is also considered by Chur-Hansen and Vernon-Roberts (2000) as a means of communication through which practitioners not only create written texts but also make them understood by their other colleagues as well as patients who speak English. To cite their own words, ‘the ability to communicate through the written word is a fundamental skill for medical practitioners and medical students, who must relay information to colleagues and patients’ (p. 642). It even appears that not only writing but also the other language skills are important to the medical students as far as their prospective profession is concerned. This is the reason for which such countries as the US, Canada, England, Australia, and others are investing in understanding the language of various professions, many of whose members are ESL people (Duff et al., 2002: 399).

Writing as a means of communication is believed to involve many aspects, processes and components. Drake (2006: 85) states that a writer should take into account the person to whom or by whom the text is to be read. Also, they must understand that whatever happens between a writer and a reader is also significant to the process of

writing. Partly or wholly, facets as ‘sentence structure, punctuation, vocabulary, voice, posture, and diction are important to the overall situation of successful writing’, p. 85. In another study, Chur-Hansen & Vernon-Roberts (1998: 644) consider that ‘content, jargon, values, vocabulary, tense, articles, spelling, legibility, conventions, and fluency can be used to determine success in writing. Also, writing expertise relates to having a control over discourse quality, format, material, inclusive complex processes, problem solving, and related self-autonomy (Cumming, 1989).

It is argued by Showalter and Griffin (2000: 165) that the medical students can write in a better way if they are exposed to ‘good models’ which reflect good writing. They add that such students need to undertake much practice and have peer-evaluation. They also praise the idea of having discussions and arguments. (In this context, it can be expressed that it is assumed that the IWB can have a role to play in offering such models through the information it can present, ensuring maximum benefit through saving students’ work and progress, providing peer evaluation through comparing the two texts and the two comments involved, creating a lively atmosphere for discussions and arguments through the interactive possibilities which enhance such aspects of learning.)

Showalter and Griffin (2000: 165) claim that

> [A]t a higher level, to become better writers, medical students must read more: medical articles, case histories, essays, short stories and novels. William Carlos Williams believed that a doctor must always listen to a patient's story, since only through stories can one person fully enter another's life. The medical ear must be trained to hear these stories, and understand the narrative elements in a case history, and literature has the potential to make young doctors more sensitive to the social and psychological needs of their patients, as well as offering models of written expression. Doctors need to be fluent in the specialized language and jargon of medicine, but they also need to communicate clearly and directly with the general public, and with lawmakers.

They also praise what the medical schools in the United States do regarding focusing on

writing and communication, which in a way can be the focus of this study.

In another study (Chur-Hansen & Vernon-Roberts', 1998: 351), from a different point of view, it is reported that educators complain that the medical students do not know when to use formal and informal language and that they, therefore, have difficulties with patient interactions. However, learning for form of writing to be used with colleagues and patients cannot be the only reason why the medical school students should be competent in writing. Writing is also claimed to be a medium for science and for learning about diseases, symptoms, treatments, related examination and assessment, and other issues related to the body from a medical perspective.

In other words, writing to such students, should be integrated with reading (El-Koumy, 2002: 220) to have the necessary knowledge, whether about medical knowledge or about writing itself. Also, it is believed that writing in such a learning situation as that of the medical context should focus not only on the outcomes, i.e. communication with colleagues and patients but also, in the first instance, on how far it supports a student's wider development of comprehension, usage, and broader knowledge.

Sasaki et al. (1996: 137) further found out that writers of a second language whose writing is not good tend not to care about the comprehensive format of their passage and that good writers show confidence when they write English for an academic context. This enhances what has been mentioned earlier in this respect. Sasaki et al. (1996) also maintain that writers with poor achievement had often not put down more than a single paragraph as a writing task in English while they were in high school. (Furthermore, Sasaki et al. offered an explanatory model for EFL writing ability.) Towards this and on the fluency of medical school Canadian students, Duff et al. (2002: 405) clarify that a reason which sometimes makes the students inefficient when they generally use ESL is that they have somewhat few chances to study it before they enter professional health programs. However, it could be claimed that most educational systems in the world teach ESL before the students reach university stage.

Concentrating on the difficulties which Second Language (L2) students face when learning second language writing, De Larios et al. (2006: 100) assume that it is more difficult and problematic for those students to convert their thoughts to L2 than do their counterparts in their first language. This could be argued to be a normal phenomenon as learners of L2 writing can be considered not to be as fluent as others managing their L1. Although the case might be different in the case of the Medical school students whose standard in English could be taken for granted (Chur-Hansen and Vernon-Roberts (2000:646), still L2 writing is not those students' first language.

It is worth mentioning that to explore the difficulties faced by the medical students in writing ESL, Chur-Hansen & Vernon-Roberts (1998: 351) had previously recorded a large number of tutor comments which was later classified into thirteen categories. (It is noteworthy that the number of tutors themselves is thirty six, which might create questions about measures taken to avoid experimental bias). The deficiencies which appeared in students' writing were classified into:

> [P]ersonality factors and language, lack of familiarity with colloquial language, the students' rate of speech, difficulties when to use 'professional' language and when to use informal speech (register), comprehensibility of speech, pronunciation, poor interpersonal skills and language, difficulties with patient interactions due to language skills, language and cultural problems, language skills hampering the student's ability to relay knowledge and difficulties in conversational speech. A final category included comments where language proficiency was commented upon as problematic…, p 353.

Overall, Chur-Hansen and Vernon-Roberts also (2000: 646) draw the attention to two language elements which are indispensable to the Medical Students and which should receive more focus. They point out that 'spelling and basic literacy skills are essential in medicine.' They add that 'adequate skills in the use of the English language may be taken for granted for students of medicine'. However, they argue that there is no reason for this with respect to the outcomes of their study. At a time of a real patient situation, with the help of a language specialist, Chur-Hansen and Vernon-Roberts found out that

'few examples' of students' writing, as tested by a 'Written Language Rating Scale', were 'highly competent, succinct, accurate, cohesive and stylish', p464. By contrast, their finding regarding a vast majority of pieces of the 'poor' and the 'poor to adequate' students' writing was so clear and worrying to them that they suggested such a type of students be given extra written courses when errors were predicted. It is clear, however, and it might be argued that Chur-Hansen and Vernon-Roberts's study (2000) proving weaknesses in medical students' academic writing actually diagnoses 'diseases' without offering appropriate intervention methods when such students are determined during their regular courses. (It is important it be mentioned that intervention is necessary once *diseases or weaknesses* are pinpointed or identified, which gives a rationale for and a hint towards what the present study will attempt to do.) Besides, in their study they mention that the assessment of writing was done by one assessor, which can cast doubts on the rater reliability and therefore the results could be vulnerable.

Even further, Chur-Hansen (2000) did another descriptive study investigating medical students' essay-writing skills. A writing exercise was undertaken, rated once by a rater and then another by the student. Finally, the student was given a set of criteria for a good essay as formative feedback and the strengths and weaknesses of the writing were analysed. (It is noteworthy that such a kind of study would have been of more practical value if, again, it had concentrated on trying to raise students' levels in essay-writing. Although this was not the aim of the study, it should have been. Also, technology was not suggested in the study, which is a difference between Chur-Hansen's (2000) and the present study.)

From this analysis, it is clear that the number of experimental studies attempting to develop medical students' writing is small. Also, it can then be concluded that the writing of the Medical school students is important and distinguished. This gives the present study the momentum to take insights into the components of this skill: writing micro-skills.

Writing Micro-skills

In terms of developing a curriculum for writing for medical students it looks like a comprehensive list or inventory containing all micro-skills which can support the writing process from all aspects is missing. In this section, an investigation related to writing micro-skills will be conducted. This is necessary in order not only to see these skills and to find out each researcher's contribution in this respect but also to decide whether lists or taxonomies provided in this area are comprehensive or not. Also, this coverage will help identify the areas which the micro-skills address and which are of particular interest to a certain researcher. The investigation in general is a step forward towards identifying the micro-skills necessary for the medical school students (as will be presented and explained later in Chapter III).

Also, as far as medical school students' writing skills are concerned, although many studies state the importance of writing to these students, as mentioned earlier in this chapter, when it comes to the micro-skills embedded in writing, it is claimed that none of the studies investigated the micro-skills necessary for such students in detail. From another perspective, when it comes to writing with respect to any university or college level students other than writing for Medical Students, there emerge many skills. The following also sheds light on the previously-raised issues.

The writing micro-skills have proven popular, reflecting varied levels as well as processes involved in writing. McCarthy, Meier & Rinderer (1985) focus on the ability to 'use grammar successfully, the ability to use the right word/ words, the ability to compose a sentence/ a paragraph/an essay, the ability to punctuate a passage on one page, the ability to weave sentences into a paragraph to produce a theme'. These are mostly important micro-skills. It is worth mentioning, however, that punctuation as a facet of good writing should not cover only one page, but it should be extended to the whole composition as well. Also, having a clear, right introduction,

body, and conclusion of the writing as well as elements of coherence can be argued to be very important, too.

Some studies focus on skills related to writing a story, e.g. writing down the feelings of a main character, describing the setting, (Graham & Harris, 1998a). Other studies such as Pajares & Johnson (1994); Shell et al. (1995: 161) address such abilities as completing a term paper, making up a short a little fiction story, writing composition in a letter form to a friend.

Southern Illinois University (2007) provides a checklist including items representing some writing micro-skills. These include 'the ability to fully respond to an assignment, the ability to present a clear topic statement, the ability to show proper critical thinking, the ability to express the aim manifestly in a convincing way, the ability to use facts in a good sequence, the ability to provide supporting details, the ability to show a unity, focus and organization, the ability to use suitable language appropriate to the audience, the ability to resort to decisive sources when necessary, the ability to document and use citations properly, the ability to use grammar, punctuation, words, spelling and format perfectly, the ability to display original and creative thinking' (ibid). The following Table (2) shows the areas or types of micro-skills they stress:

Table (2)

Source of Micro-Skill/s	**Area/Type of Micro Skill Stressed**													
	Grammar	**Spelling**	**Vocabulary**	**Punctuation**	**Composition**	**Development**	**Writing a letter**	**Writing a story**	**Creative Writing**	**Style**	**Format and Organization**	**Research-related**	**Culture -related**	**Other**
Southern	√	√	√	√	√	√	√	√	√	√	√	√		

Illinois (2007)														

Similar to the previous skills, some micro- skills of academic writing were reached in a 'Writing Workshop' in Fenapupae Conference (2007). These include the following:

1. the ability to abide by the conventions of spelling, punctuation and capitalization.
2. the ability to write correct vocabulary and appropriate word order
3. the ability to use correct grammatical rules (e.g. tense, agreement)
4. the ability to write down a particular meaning in different ways, with a variety of sentence structures
5. the ability to use connectors in written discourse
6. the ability to utilize the rhetorical forms and rules for written discourse
7. the ability to appropriately carry out the communicative functions according to form and goal
8. the ability to show links between events and make intelligible such relations between main ideas, supporting details and evidence, new input, given information, generalization and even exemplification
9. the ability to distinguish between literal and deduced meanings when writing
10. the ability to use culture meanings correctly in the context of the written text
11. the ability to develop and utilize a number of writing strategies, such as accurately evaluating the reader's interpretation, using pre-writing strategies, using paraphrases and synonyms, seeking peer and instructor feedback and using these all in a final draft.

The following Table (3) shows the areas or types of micro-skills they (ibid) stress:

Table (3)

	Area/Type of Micro Skill Stressed

Source of Micro-Skill/s	Grammar	Spelling	Vocabulary	Punctuation	Composition	Development	Writing a letter	Writing a story	Fluency writing	Creative Writing	Style	Format and Organization	Research-related	Culture -related	Other (i.e. register, rhetoric, cohesion)
Fenapupae Conference (2007)	√	√	√	√	√	√								√	√

SIL International Writing Skill (Orwig, 1999) comes up with somewhat similar skills. Their list entails the writer to

- use the orthography correctly. This includes the script, and spelling and punctuation conventions,
- use the right forms of words. This may mean using forms that express the right tense, case or gender,
- follow a correct word order,
- use vocabulary correctly,
- use the style which deals appropriately to the genre and audience,
- form up the main sentence constituents, such as subject, verb, and object, clear to the reader,
- distinguish the main ideas from supporting ideas or information,
- make the text coherent, so that other people can follow the development of the ideas, and
- judge how much background knowledge the audience has on the subject and make clear what it is assumed they do not know.

Style, genre, and audience are clear in the above list – which are not there in Fenapupae Conference list (2007). This may show an emphasis on format, vocabulary, and audience for an essay. Orwig (1999) identifies other skills/kinds of skills which show scrutiny in trying to include a wider range of possibilities to embrace all types:

- Comprehensibility skills for writing which seem to be based on the understanding that writing is communicating messages or information. In other words, this type of skills concentrates on language as doing it communicative function or as conveying comprehensible meanings.
- Fluency skills which appear to some extent to focus on scrutiny. These skills are
    - recognizing the linear sequence of sounds
    - mastering writing motions and letter shapes
    - recognizing the chunking of words
    - recognizing the need for space between words
    - writing quickly
- Creativity skills which contain the ability to write freely anything the learner wants to write.

The following Table (4) presents all the areas or types of micro-skills Orwig (1999) stresses:

Table (4)

Source of Micro-Skill/s		**Area/Type of Micro Skill Stressed**													
	Grammar	**Spelling**	**Vocabulary**	**Punctuation**	**Composition**	**Development**	**Writing a letter**	**Writing a story**	**Fluency skills**	**Creative Writing**	**Style**	**Format and Organization**	**Research-related**	**Culture -related**	**Other**
Orwig (1999)	√	√	√	√	√	√			√	√	√	√			

Also, it is reported that such skills as 'organizing ideas, writing introductions, conclusions, paragraph structure, understanding essay titles, timed writing, using source material, and producing text for such functions as definition, cause and effect, and exemplification' are ones that can compose writing (Garnet Education, 2007: 2). The following Table (5)

presents all the areas or types of micro-skills Garnet Education, (2007) stresses:

Table (5)

Source of Micro-Skill/s	Area/Type of Micro Skill Stressed														
	Grammar	**Spelling**	**Vocabulary**	**Punctuation**	**Composition**	**Development**	**Writing a letter**	**Writing a story**	**Fluency skills**	**Creative Writing**	**Style**	**Format and Organization**	**Research-related**	**Culture -related**	**Other , i, e. genre, coherence**
Garnet Education, (2007)					√	√						√	√		√

Ranelli (1998: 229) used a number of micro-skills of writing which he edited on a scale to test pharmacology students' self efficacy in their writing. These micro-skills were used to test the students' 'communication confidence for specific tasks and their confidence on performing writing mechanisms'.

Communication confidence for specific tasks:

Prepare a resume describing your employment history and skills

Write a one- or two-sentence answer to a specific test question

Compose a one- to two-page essay in answer to a question

Write a term paper of 15 to 20 pages

Write a scholarly article for publication in a professional journal in your field

Write a letter to the editor of the daily newspaper about a health-care topic

Write useful class notes

Prepare a paper that reads as a balanced account on a controversial topic

Compose a paper summarizing a reading assignment

Confidence on performing writing mechanics:

Correctly spell all words in a one-page paper

Correctly punctuate a one-page paper

Correctly use parts of speech (that is, nouns, verbs, adjectives)

Correctly use plurals, verb tenses, prefixes, and suffixes

Write a paper with good overall organization (e.g., ideas in order, effective transitions)
Choose words that a reader can understand
Know how the reader will use your document
Use vocabulary appropriate to the subject and purpose of the writing
State the purpose of the writing to the reader
Research the subject
Identify problems to be solved that the topic suggests
Make clear statements of ideas
Avoid common grammatical errors of standard written English
Quote sources accurately
Write effective introductions and conclusions
Write effectively under pressure
Paraphrase properly
Collaborate with others during reading and writing on a given project
Revise to improve word choice
Revise awkward phrasing and vague language
Follow a revision strategy to select, add, substitute, or delete information when the prospective readers to the paper have changed, p.229.

The following Table (6) presents all the areas or types of micro-skills Ranelli (1998) stresses:

Table (6)

Source of Micro-Skill/s	**Area/Type of Micro Skill Stressed**														
	Grammar	**Spelling**	**Vocabulary**	**Punctuation**	**Composition**	**Development**	**Writing a letter**	**Writing a story**	**Fluency skills**	**Creative Writing**	**Style**	**Format and Organization**	**Research-related**	**Culture -related**	**Other , i, e. writing notes**
Ranelli (1998)	√	√	√	√	√	√	√			√	√	√	√		√

Thus, it can be deduced that none of the previous studies dealt directly with writing micro-skills related to the medical school students in particular, nor handled them in detail.

Apparently, it is quite obvious that researchers' focus was centred around a certain perspective, i.e. when looking on writing micro-skills. It is, then, obvious that there are no efforts made to help produce a comprehensive inventory/chart/list of all the possible micro-skill embedded in the writing process.

In order to reach the goal of providing a questionnaire inventory to form a basis upon which the procedures of this study - as will follow in Chapter III - can be conducted, and in order to gather all lists in one comprehensive list from a practical point of view, the following Table (7) is designed in order to do this and in order to show the exact number of frequencies each micro-skill has been mentioned in literature from a particular source/s, too:

Table (7)

The Writing Micro-Skills Inventory One

Source of Micro-Skill/s	**Micro Skill (No. 75)**	**Frequencies in the literature**
McCarthy, Merier & Rinderer (1985)	the ability to use grammar successfully	12 (Each related frequency is mentioned below and they are marked with the character "i")
	the ability to use the right word/ words	10 (Each related frequency is mentioned below and they are marked with the character "$ ")
	the ability to compose a sentence/ a paragraph/an essay	4 (Each related frequency is mentioned below and they are marked with the character "^")
	the ability to punctuate a passage on one page	5 Each related frequency is mentioned below and they are marked with the character "?")
	the ability to weave sentences into a paragraph to produce a theme	4 (^)
(Graham & Harris, 1998a)	the ability to write a story, e.g. writing down the feelings of a main character, describing the setting	2 (each one is mentioned below and their frequency marked with the character " ' ")
Pajares & Johnson, 1994; Shell et al. (1989, 1995)	the ability to complete a term paper	13 (Each related frequency is mentioned below and they are marked with the character " +")
	the ability to make up a short a little fiction story	2 (')

	the ability to write composition in a letter form to a friend	4 (^) & (--)
Southern Illinois (2007)	the ability to respond fully to an assignment	1
	the ability to show proper critical thinking	2 (Each related frequency is mentioned below and they are marked with the character " _")
	the ability to present a clear topic statement	3 (Each related frequency is mentioned below and they are marked with the character " <")
	the ability to express the aim manifestly in a convincing way	3 (<)
	the ability to use facts in a good sequence	4 (Each related frequency is mentioned below and they are marked with the character " ;")
	the ability to provide supporting details	3 (Each related frequency is mentioned below and they are marked with the character " @")
	the ability to show a unity, focus and organization	4// (Each frequency related to *unity or coherence* is mentioned below and the frequency marked with the character " //"), 4(;)
	the ability to use suitable language appropriate to the audience	10 ($)
	the ability to resort to decisive sources when necessary	13(+)
	the ability to document and use citations properly	13(+)

	the ability to use grammar, punctuation, words, spelling and format perfectly	12 (i), 5 (?) & 10 ($), 4 (;), 4(-) Each frequency related to *spelling* is later marker with the character (-)
	the ability to display original and creative thinking	2 ( )
Fenapupae Conference (2007)	the ability to follow conventions of spelling, punctuation and capitalization	5 (?), 4(-)
	the ability to use an acceptable core vocabulary and appropriate word order	12 (i) & 10 ($)
	the ability to use acceptable grammatical systems (i.e. tense, agreement), patterns and rules	12 (i)
	the ability to express a particular meaning in different grammatical forms, with a variety of sentence structures	12 (i), 10 ($)
	the ability to use cohesive devices in written discourse	4 (//)
	the ability to use the rhetorical forms and conventions of written discourse.	2 Each "holistic micro-skill" is later marked with the character (%)
Fenapupae Conference (2007)	the ability to convey links and connections between events.	4 (//)
	the ability to communicate such relations as main ideas, supporting ideas, new information, given information, generalization and exemplification	3 (@)

	the ability to distinguish between literal and implied meanings when writing	1
	the ability to correctly convey culturally specific references in the context of the written text	1
	the ability to develop and use a battery of writing techniques, such as accurately evaluating the audience's interpretation, using pre-writing devices, using paraphrases and synonyms, soliciting instructor and peer feedback and using feedback for revising and editing	10 ($), 13 (+), 2 Each frequency related to *feedback* from others is mentioned below and they are marked with the character (“)
Orwig (1999)	the ability to use the orthography correctly, including the script, and spelling and punctuation conventions.	2 Each frequency related to *orthography* from others is mentioned below and they are marked with the character (&), 4 (-), 5 (?),
	the ability to use the correct forms of words. This may mean using forms that express the right tense, or case or gender	12 (i)
	the ability to put words together in correct word order.	12 (i)
	the ability to use vocabulary correctly	10 ($)
	the ability to use the style appropriate to the genre and audience	1
	the ability to make the main sentence constituents, such as subject, verb, and object, clear to the reader	12(i)
	the ability to make the main ideas distinguished from supporting ideas or information	3 (@)
	the ability to make the text coherent, so that other people can follow the development of the ideas	4 (//)
	the ability to communicate a message or information	1
	Recognizing the linear sequence of sounds	1

	Mastering writing motions and letter shapes	2 (&)
	Recognizing the need for space between words	1
	Writing quickly	1
	the ability to write freely what you want to write	1
	the ability to judge how much background knowledge the audience has on the subject and make clear what it is assumed they don't know	1

Ranelli (1998)	the ability to write a one- or two-sentence answer to a specific test question	2 (%)
	the ability to compose a one- to two-page essay in answer to a question	4 (^)
	the ability to write a term paper of 15 to 20 pages	13 (+)
	the ability to write a scholarly article for publication in a professional journal in your field	13 (+)
	the ability to write a letter to the editor of the daily newspaper about a health-care topic	2 (--)
	the ability to write useful class notes	1
	the ability to prepare a paper that reads as a balanced account on a controversial topic	13 (+)
	the ability to compose a paper summarizing a reading assignment	13 (+)
	the ability to correctly spell all words in a one-page paper	4 (-)
	the ability to correctly punctuate a one-page paper	5 (?)

	the ability to write a paper with good overall organization (e.g., ideas in order, effective transitions)	13 (+), 4 (;)
	the ability to correctly use plurals, verb tenses, prefixes, and suffixes	12 (i)
	the ability to research the subject	13 (+)
	the ability to correctly use parts of speech (that is, nouns, verbs, adjectives)	12 (i)
	the ability to identify problems to be solved that the topic suggests	1
	the ability to make clear statements of ideas	1
	the ability to avoid common grammatical errors of standard written English	12 (i)
	the ability to quote sources accurately	13 (+)
	the ability to write effective introductions & conclusions	1
	the ability to write effectively under pressure	1
	the ability to paraphrase properly	13 (+)
	the ability to collaborate with others during reading and writing on a given project	2 (“)
	the ability to revise to improve word choice	10 ($)
	the ability to revise awkward phrasing and vague language	10 ($)
	the ability to choose words that a reader can understand	10 ($)
	the ability to know how the reader will use your document	1
	the ability to state the purpose of the writing to the reader	3 (<)

	the ability to follow a revision strategy to select, add, substitute, or delete information when the prospective readers to the paper have changed	13 (+)

(N. B. The color of a micro-skill or part of it matches the color of its relevant character as well as of similar micro-skills or similar parts of micro-skills)

The number of micro-skills reflecting the contribution of each of the researchers can then be known. Graham & Harris, (1998a) focused on one skill. McCarthy, Merier & Rinderer (1985) stressed five. Pajares & Johnson (1994) and Shell et al. (1989) presented three. Southern Illinois (2007) listed thirteen. Fenapupae Conference (2007) offered eleven. Orwig (1999) stated fourteen while Ranelli (1998) provided twenty eight. This reflects that Ranelli (1998) is the one with the most comprehensive contribution in this area.

It is noteworthy, as clear in the table, that each of the researchers covered a number of areas within writing embedded in the micro-skills. The following Table (8) contents reveal these areas (or types of micro-skills each researcher addressed):

Table (8)

The Writing Micro-Skill Inventory Two

Source	Area/Type of Micro Skill Stressed													
	Grammar	**Spelling**	**Vocabulary**	**Punctuation**	**Composition**	**Development**	**Writing a letter**	**Writing a story**	**Creative Writing**	**Style**	**Format and Organization**	**Research-related**	**Culture -related**	**Other**
McCarthy, Merier & Rinderer (1985)	√		√	√	√√	√								
(Graham & Harris, 1998a)								√						
Pajares & Johnson, 1994; Shell et al. (1989, 1995)					√√ √		√	√				√		
Southern Illinois (2007)	√	√	√√		√√ √√	√√ √ √√			√√	√	√√	√ √		
Fenapupae Conference (2007)	√√√ √	√	√√ √	√	√√	√√ √√								√
Orwig (1999)	√√√ √	√√ √	√	√	√√	√√			√					
Ranelli (1998)	√√√	√	√√ √	√	√√ √√ √ √√ √ √√	√	√		√		√√	√ √ √	√	√

From this analysis, it is obvious that the researchers' focus areas are grammar, spelling, vocabulary, punctuation, composition, development, style, format and organization, research, culture, critical thinking. Also, types or genres of writing address writing a letter as well as writing a story.

Generally, it looks like the claim that a more comprehensive list (such as either of the previous two) which contains all the various writing micro-skills embedded in writing or areas involved was *not* offered by any of the previous researchers or specialists, is then supported. This also explains why such a comprehensive list was developed during the course of this investigation. Also, more precisely, it appears that a list of micro-skills important for the Medical School students has not been previously documented, either. This will be later addressed in Chapter III in order to fill up this gap, based on the investigation and analysis in this chapter.

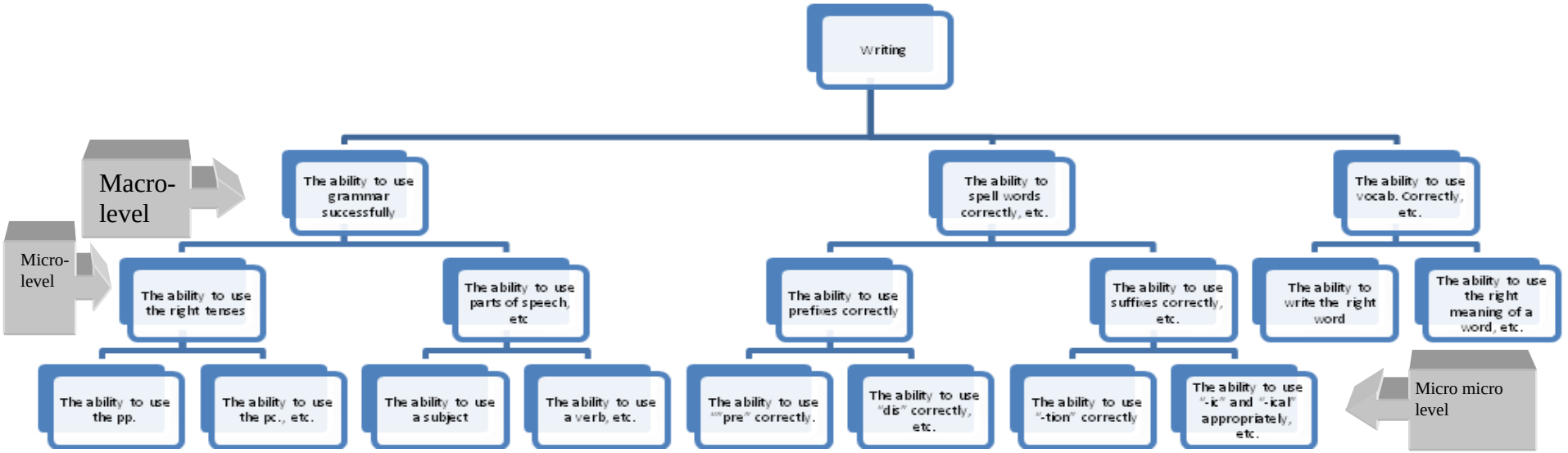
Furthermore, it can be observed that the level of skills provided by researchers or specialists is not the same. This means sometimes a researcher offers what is previously - and can be - called in this study "a macro" skill of writing" (i.e. the ability to use grammar successfully) which can itself be broken into other smaller skills while the same researcher offers another skill (i.e. the ability to use the right word/ words) within their other skills obviously at a *micro skill* level. This is done so far by *all* researchers and specialists – as can be seen in the skills they have stated: evidence to this claim of inconsistency can be clearly seen in the skills McCarthy, Merier & Rinderer (1985), Pajares & Johnson, 1994, Shell et al. (1989, 1995), Ranelli (1998), Fenapupae Conference (2007), and Southern Illinois (2007).

It is also noticed that a number of the previously-mentioned specialists did not specify certain skills of one applicable *component* separately. For instance, the spelling and punctuation were used in *one* skill, e.g. Fenapupae Conference (2007). Also, "the ability to use grammar, punctuation, words, spelling and format perfectly", e.g. as in Southern Illinois (2007), contains several skills together. Besides this overlap, there is no ample

consideration of the level the skill represents, i.e. macro or micro, although a number of those specialists above have used the prefix "sub" which is seen in the present study as *inaccurate* because a skill which is a *sub*-skill to another can be itself a "*macro*" to a smaller one or a *micro* to a bigger one. A number of those specialists did not even state any level the skill is at at all. However, it is also noticed that Graham & Harris (1998a) produced both levels, i.e. macro & micro, in one developed sentence (in their offered skill above) although they did not frankly state the two levels.

Actually, the way the skills should be looked at and developed, as suggested, is demonstrated in the following organisation chart from a practical point of view. It also summarises the findings on micro-skills and how they should relate to writing development.

Figure (1)
The Writing Skill Development Tree



Back to the literature, it is moreover observed that there is no distinction between the skills which can be seen -and could be called - as "genre-related" (these stand at *macro*-level), "transverse" (these stand at all levels), or "genre-specific (these only stand at the micro and the micro-micro-levels)." Actually, this distinction is claimed to emanate from the role and nature the skills have. For instance, "the ability to compose a sentence/ a paragraph/ an essay" (regardless of the argument that they are seen as more than one macro-skill in one sentence), "the ability to write a story, the ability to write a letter", "the ability to write a scholarly article", "the ability to write a travel brochure (Harmer, 1983: 16), etc" - all express a genre-related direction related to *one* piece of composition which is quite different in characteristics from the other types. The transverse skills can be represented by "the ability to use grammar successfully", "the ability to use the correct vocabulary", "the ability to correctly punctuate a piece of writing", "the ability to spell words correctly", "the ability to show style", etc. – all of which can be used in *any* piece of writing: they are used across all pieces of writing and can have other skills embedded under them. From another perspective, the genre-specific skills can be stated as those which are only related to one "genre-related" piece, i.e. a story, a letter, a brochure etc. Writing a story, for example, requires such skills as showing "the ability to make up a short a little fiction story" (which is, again, another genre-related skill at the micro-micro-level), "the ability to write a novel", which is also at the micro-micro-level), "the ability to portrait the characteristics of a certain character", "the ability to set the scene well" – all are genre-specific to story writing. Likewise, "the ability to paraphrase properly", "the ability to quote sources accurately", "the ability to document and use citations properly", etc. all are solely related to scholarly paper or article writing. Thus, the grounds for a clear distinction between the natures of writing skills can be established in this way.

Although a categorisation of types, levels and variations of writing skills stated in previous literature is not evident, the following attempts to categorise and level them out.

- **The ability to use grammar in a right way – one macro- and eleven micro-skills**

The following shows the levels of this skill: the ability to use *grammar successfully* (McCarthy, Merier & Rinderer 1985), the ability to use *grammar*, punctuation, words, spelling and format *perfectly* (Southern Illinois, 2007), the ability to use an acceptable core vocabulary and *appropriate word order,* the ability to use *acceptable grammatical systems (i.e. tense, agreement), patterns and rules,* the ability to express a particular meaning in different *grammatical forms*, with a variety of *sentence structures,* the ability to use the rhetorical forms and *conventions of written discourse* (Fenapupae Conference, 2007). (there is no criterion involved in this micro-skill) , the ability to use the correct forms of words, i.e. using forms that express the *right tense, or case or gender*, the ability to put words together in *correct word order*, the ability to make *the main sentence constituents*, such as *subject, verb, and object*, clear to the reader (Orwig, 1999), the ability to correctly use *plurals, verb tenses, prefixes, and suffixes,* the ability to correctly use *parts of speech (that is, nouns, verbs, adjectives)*, the ability to avoid *common grammatical errors* of standard written English (Ranelli, 1998).

- **The ability to use vocabulary correctly – ten micros**

The following shows the variations of this skill: the ability to *use suitable language* appropriate to the audience (McCarthy, Merier & Rinderer 1985), the ability to *use suitable language appropriate* to the audience, the ability to use grammar, punctuation, *words*, spelling and format perfectly Southern (Illinois, 2007), the ability to use an acceptable core *vocabulary* and appropriate word order, the ability to express a *particular meaning* in different grammatical forms, with a variety of sentence structures, the ability to develop and use a battery of writing techniques, such as accurately evaluating the audience's interpretation, using pre-writing devices, using paraphrases and *synonyms*, soliciting instructor and peer feedback and using feedback for revising and editing (Fenapupae Conference, 2007), the ability to use *vocabulary* correctly (Orwig, 1999), the ability to revise to improve *word choice,* the

ability to revise *awkward phrasing and vague language*, the ability to choose *words* that a reader can understand (Ranelli, 1998).

- **The a**bility **to compose a sentence, a paragraph, an essay – three macros and should be broken into three macro-categories**

The following shows the levels of this skill: the ability to compose *a sentence*/ a paragraph/an essay, the ability to *weave sentences into a paragraph* to produce a theme McCarthy, Merier & Rinderer (1985), the ability to write *composition* in a letter form to a friend Pajares & Johnson, 1994; Shell et al. (1989, 1995), the ability to *compose* a one- to two-page essay in answer to a question Ranelli (1998). It is well observed that the first skill contains three macro-level skills (i.e. genres) and each should stand alone. The same applies for the rest of the skills, with the observation that the second is included in the first.

- **The ability to punctuate writing (not different at a sentence, paragraph, or essay level) four macros and one mixed**

The following shows the levels of this skill: the ability to *punctuate* a passage on one page (McCarthy, Merier & Rinderer, 1985), the ability to use grammar, *punctuation*, words, spelling and format perfectly (Southern Illinois, 2007), the ability to follow conventions of spelling, *punctuation* and *capitalization* (Fenapupae Conference, 2007), use the orthography correctly, including the script, and spelling and *punctuation* conventions (Orwig, 1999), the ability to correctly *punctuate* a one-page paper (Ranelli, 1998)

- **The ability to write a scholarly paper - five macros and eight micros -**

The following shows the levels of this skill: the ability to *complete a term paper* Pajares & Johnson, 1994; Shell et al. (1989, 1995), the ability to *resort to decisive sources* when necessary, the ability to *document and use citations* properly Southern Illinois (2007), the ability to develop and use a battery of writing techniques, such as accurately evaluating the audience's interpretation, using pre-writing devices, using *paraphrases* and synonyms, soliciting instructor and peer feedback and using feedback for revising and editing Fenapupae Conference (2007), the ability to write a *term paper* of 15 to 20 pages, the ability to write *a scholarly article* for publication

in a professional journal in your field, the ability to prepare *a paper* that reads as a balanced account on a controversial topic, the ability to compose *a paper* summarizing a reading assignment, the ability to write *a paper* with good overall organization (e.g., ideas in order, effective transitions), the ability to *research the subject,* the ability to *quote sources* accurately, the ability to *paraphrase properly,* the ability to follow a revision strategy to select, add, substitute, or delete information when the prospective readers to *the paper* have changed (Ranelli, 1998). It is clear that Ranelli (1998) is the study with the most contributions as far as writing a scholarly paper is concerned.

- **The ability to spell words correctly- four macros and micros (combined)**

The following shows the variations of this skill: the ability to use grammar, punctuation, words, *spelling* and format perfectly

Southern Illinois (2007), the ability to follow conventions of *spelling*, punctuation and capitalization Fenapupae Conference (2007), the ability to use the orthography correctly, including the script, and *spelling* and punctuation conventions (Orwig, 1999), the ability to correctly *spell* all words in a one-page paper (Ranelli, 1998).

- **The ability to write a story – one macro and another micro**

The following shows the levels of this skill: the ability to write a *story*, e.g. writing down the feelings of a main character, describing the setting (Graham & Harris, 1998a), the ability to make up a short a little *fiction story* (Pajares & Johnson, 1994; Shell et al. (1989, 1995).

- **The ability to write a letter – two macros**

The following shows the levels of this skill: the ability to write composition in a *letter* form to a friend (Pajares & Johnson, 1994 & Shell et al. (1989, 1995)), the ability to write a *letter* to the editor of the daily newspaper about a health-care topic (Ranelli, 1998).

- **The ability to develop a piece of writing – all micro-skills**

The following shows the levels of this skill: the ability to present *a clear topic statement,* the ability to express *the aim* manifestly in a convincing way, the ability to

use facts in *a good sequence*, the ability to provide *supporting details* (Southern Illinois, 2007), the ability to communicate such relations as main ideas, *supporting ideas*, new information, given information, generalization and exemplification, the ability to develop and use a battery of writing techniques, such as accurately evaluating the audience's interpretation, using pre-writing devices, using *paraphrases* and synonyms, soliciting instructor and peer feedback and using feedback for revising and editing (Fenapupae Conference, 2007), the ability to make the main ideas distinguished from *supporting ideas or information*, the ability to communicate a message or information (Orwig, 1999), the ability to state *the purpose* of the writing to the reader, the ability to *paraphrase properly*, the ability to make clear statements of ideas (Ranelli, 1998).

- **The ability to show unity and coherence – two macros and two micros**

The following shows the levels of this skill: the ability to show a *unity*, focus and organization Southern Illinois (2007), the ability to use *cohesive devices* in written discourse, the ability to convey *links and connections* between events Fenapupae Conference (2007), the ability to make the text *coherent*, so that other people can follow the development of the ideas Orwig (1999).

- **Organisation – 1 macro, 1 mixed, and 1 micro**

The following shows the levels and variations of this skill: the ability to show a unity, focus and *organization*, the ability to use facts in *a good sequence* (Southern Illinois 2007), the ability to write a paper with good overall *organization*, e.g., ideas *in order*, *effective transitions* (Ranelli, 1998).

- **Format – one macro**

The following shows the level of this skill: the ability to use grammar, punctuation, words, spelling and *format* perfectly (Southern Illinois, 2007).

To sum up, this section has shown the micro-skills researchers provided in chunks and then gathered them as a whole (probably for the first time). It also revealed the numbers and errors with these skills. Then, it criticised the way the writing skills have been addressed by specialists or researchers. It has finally addressed the issues

of levelling those writing skills out. It has also categorised them at the same time and offered a practical writing development model. It is important here to clarify that writing, including medical students' writing, should incorporate most of the previous skills at all levels.

Also, from another perspective, the literature makes it clear that an intervention with such a tool as an *IWB* in order to be used in developing medical school students' writing/essay writing does not exist. This raises a question as to whether IWB's can help in the overall learning process for these students. In the following section, quite a thorough investigation will be made in order to see whether this tool can have an impact on student's *writing* as the main focus of this study. Besides, a number of related conclusions will also be drawn.

IWB

Students' attitudes towards the IWB as an educational tool

From literature, it appears that research related to investigating students' attitudes towards the IWB has been generally in favor of the use of such a piece of technology with students. Features such as students' increased level of motivation and interest and enjoyment and attraction are recorded.

A number of studies confirm the previous claim. For instance, Beeland's (2002) study found that both students and teachers were positive about the tool (but they concluded that further research was needed in order to identify how to reach an increased level of learners' achievement in the same way positive attitudes were obtained). Also, Robinson's research results (2007) show that students' level of motivation increases and their interests are raised when this technology is used in mathematics classes while Gerald et al. (1999) find out that it not only positively influences motivation but also really supports the skills of speaking, the processes of knowledge, and the emulation of the students. Also, it is found that, as a further investigation, students at primary schools clarify that the IWB has many uses, is interactive, and creates an enjoyable atmosphere in the classroom. However, they comment that there are related shortcomings such as not using the technology themselves and having technical difficulty dealing with the technology (Higgins, 2005: 102).

In a study by Smith et al. (2000), there is evidence that the IWB can make students' motivation levels higher. 78% of the students reported they had their motivations improved, having being instructed by the tool. It is also reported that students were excited and enthusiastic about learning with the board (ibid.). However, there is evidence that students may lose interest when they become accustomed to the board (ibid.). This view is supported by Moss et al. (2007). They clarify that the novelty caused by the introduction of the IWB into classroom was welcomed by the students, but revealed that students' increased level of motivation decreased over time a while after the introduction of the technology.

Other studies investigating students' response to material delivered via the IWB appear to be mostly in favor of the equipment. Charman & Elmes (1998); Erwin &

Rieppi (1999); Bell (2000) Jason, Kennedy & Taylor (2001); Shuell & Farber (2001); Tate (2002); Robinson (2007) reported positive increase in students' interests, enjoyment, and enthusiasm to learn after they had been taught with an IWB. However, the question *how* such a technology can cause positive changes in students' learning subsequent to positive changes in attitudes may arise and is noteworthy. Ehrmann (1999) demonstrates that it is *how* equipment is utilized which makes it beneficial or not. He clarifies that it is impossible for technologies to have an impact set before hand, and stresses that it is the *how* of using them which determines the degree of benefit obtained. This declares that the practices of teachers inside a classroom are in the lump a crucial factor which determines the extent to which the IWB (or any other equipment) can cause positive effects whether on attitudes or on achievement. Conversely, it also appears that it is the *use* which can cause even no or negative effects.

Tate (2002: 5) found out that there were no significant differences among her experimental groups using the IWB and control groups using traditional methods. However, she reports that:

> [S]tudents in the technology enhanced sections self reported more enthusiasm and interest in the course than did the students in the traditional sections, and perhaps as a result, the retention rate in the experimental sections was much higher than in the control sections.

Students' positive interaction with material delivered through the IWB can be attributed to the claim that the technology covers a rage of students' varied learning styles which other methods of delivery might fail to. This view is supported by Easley & Hoffman (2001) who also add that multimedia in general provide 'visual reinforcement of the instructors' auditory delivery' This is assumed to be one of the most important reasons why students like multimedia, but although they like them, there is evidence that teenagers do not like to leave their desks in order to go to the board, contrary to what primary school children do (Thomas, 2003).

Also, it is found out that students questioned in some research (Easley & Hoffman, 2001; Krygier & Reeves, 1997) state teachers in multimedia classes are inclined to

moving more quickly than they do in other classes. Also, they report that it was a difficulty taking down notes while the instructors were teaching either because the time was too limited or because they had to engage in multimedia presented to them. Also, when the teacher was not well trained enough to support and catch the students' attention from the beginning of the class, their enthusiasm and will started to fade (walker, 2003b, 2).

This reflects that sometimes for such reasons as those which have just been mentioned, students might not sometimes feel at ease when multi-media are used. However, it could be claimed that since research discussed earlier makes clear that students' motivation, interests, enjoyment, enthusiasm, as well as retention, are increased, then such students' views in the last two studies can be considered of limited value compared to other reverse evidence for positively changed attitudes in literature.

Even, Robinson (2007: 33-34) claims that a number of students in Middle School mathematics class 'longed for' the board to come back to the class and they became 'less interested' when the computer and the LCD Projector were used without the IWB being in class, after they had been taught with the board and became familiarized with it.

It is even clear, as in Robinson's (2007: 37-45) study, that students have strong views regarding the IWB. In the investigation of the impact of the IWB on the students' attitudes (e.g. interests, enjoyment and motivation) towards the technology and towards mathematics, it is revealed that the board was a source of good help to the students. It was commented by one of Robinson's students that 'I can comprehend the mathematics because it [the IWB] helps me visualize what happens and how to do it'. It was also reported by a large number of his students that they understood Mathematics much better due to the use of the IWB. He, as well as Bell (2000), recommended that students' attitudes towards other subject areas and the technology be explored, which gives further rationale for the present study. On the whole, Robinson's study result agrees with Tate's (2002) and Bell's (2000) as previously shown. Apparently, all the previous studies demonstrate the capabilities underlying the technology.

Bell (2000) indicates that the high school eighth grade students who were taught with the IWB showed 'consistent gains' in their attitudes towards computer use as well as towards writing when compared to those not taught with the technology. However, it could be argued that the engagement of an *attractive, new* equipment causes positive attitudes towards itself and towards the subject matter, but, back to what was mentioned earlier in this chapter, it appears that it is the *uses* applied by a competent instructor that determine the success of a certain tool, which Bell and Robinson agree to themselves.

However, from a more cautious perspective, Higgins et al. (2007: 220) implicitly arguably see that this optimism should be constrained by more research on classroom pedagogy and interactivity as there is a much smaller amount of research which has attempted to establish empirical grounds for such optimism.

Thus, it can be understood that the strongest points which can make positive students' attitudes are the ability of the tool to cater for different learning styles, in addition to the novelty, and attractiveness. When used correctly and effectively, it seems that the board can raise students' motivation, interests, enjoyment, and enthusiasm, as well as retention.

A focus on impact of the IWB in different subjects

Impact in mathematics

It seems that the IWB is effective as far as attitudes are concerned although this is not quite always the case as far as achievement is concerned. The following clarifies this issue.

In a project conducted to investigate the impact of the IWB on primary mathematics teaching and learning (Latham, 2002), although it is stated that the tool is effective in teaching and learning, the questionnaire verifying students' attitudes towards learning mathematics with the tool did not seek students' opinions about specific aspects or details about what they liked while being taught with the IWB. This could have been done through adding open-ended questions to the questionnaire seeking students' answers.

Back to Robinson's study (2004), which was earlier discussed in this chapter, it seems that the IWB did not appear to be a significant factor in achievement in mathematics. Both experimental and control groups did not show gains in students' post test scores. However, it is verified that there was perceived benefit regarding raising students' attitudes towards the IWB. Robinson (2004: 44) states that:

> …Students were also more interested in the technology being used (a computer, LCD projector, and an interactive electronic whiteboard) in the control class where the board was being used, as compared to the experimental class where the board was not being used. Students were less attentive and awe-stricken when the computer and LCD projector were used. The collaborative and interactive means of presentation and learning with the electronic whiteboard provide a positive boost in students' attitudes towards the use of the technology.

This appears to be supported by a number of studies, e.g. Tate (2002). However, in Robinson (2004), the tool through which the data regarding students' attitudes was gathered is not found in the study and it could be argued that more detailed information for the specific areas where improvements in attitudes were made should have been provided. Back to the findings of the study, Robinson (2004: 7) states that a dynamic atmosphere for learning 'has the ability to foster positive attitudes of students towards learning'. Even, in a previous study, Fernandez and Luftglass (2003) denote the finding which is supported by many other studies, e.g. Bells' (2000), Tate's (2002), Knight's (2003), BECTA (2003). In particular reference to BECTA (2003), it is claimed that students become encouraged when the board is utilized in their class because 'students enjoy interacting physically with board, manipulating texts', which allows discussions and interactions (p. 3). However, it seems that this finding could be controversial as it could in some ways represent a Hawthorn effect. This view can be enhanced by such studies which cast doubts on technology use and argue that the encouragement to incorporate technology in teaching and learning is extremely based on 'unfounded and anecdotal evidence' (Jones and Paolucci (1998: 6) Nonetheless, as earlier stated, the IWB has varied uses.

Unlike Robinson (2004), it is seen that in a study sponsored by industry, Clemens et al. (2001) found higher levels of achievement of low-attaining learners' achievement at the beginning of their school career. In another by Hennessy et al. (2001), it is shown as assisting in providing classroom conditions favourable to guided participation in mentally challenging activity.

In another study investigating the impact of IWBs on classroom teaching of mathematics at the secondary stage – ages 11 to 12 (Glover, Miller, and Averis, 2003: 1), it was found out that

> [R]esults suggest that lesson effectiveness hinges on the technological capability of the teacher in responding to divergent needs, and that the process of exposition, demonstration, exemplification and conceptualization is best managed through the use of the IWB as a means of revisiting earlier material. (ibid.: 1)

Also, it was seen that 'interactivity has been seen as an aid to traditional teaching rather than the driving force for understanding' (ibid.: 2). However, to reach these results, which in some ways conform to many findings discussed earlier, the researchers focused on six lessons which were filmed. It could be argued, then, that this number of lessons cannot provide thoroughly reliable information regarding the size of impact which researchers can definitely rely on.

In Robinson's study (2007) mentioned earlier this chapter, the impact of the use (or lack of use) of the IWB in two Middle School seventh grade classes teaching a unit on "transformations" was investigated. A class used the IWB while the other did not use it. Results revealed that there were no differences in pre and post scores regarding as far as achievement is concerned. This study result could seem to be useful but suspicions over the experimentation could be directed as well. It is evident that there was a course and therefore this course could be argued to have had an effect together with that of the IWB. Also, as far as the students' achievement is concerned, it could be argued that the individual differences had a role to play in the final results. This sheds light on the necessity that individual differences should have been controlled for as much as possible from the beginning. It can be stated that controlling has the maximum advantage especially when doing experimental or

quasi-experimental research. Otherwise, studies adopting such approaches will be open to criticism.

Hwang et al. (2006) developed a web-based multimedia whiteboard system to help with students' learning of mathematical problem solving. Their purpose was to promote an online mathematical model which helps them with their learning. This model helps them not only to put down their answers on the IWB, but also to record their voices through the recording function on the tool and, thus make them listen to some explanations they give on their answers. The model requires that the students criticize one another's answers and that they could communicate whether to give answers or to express what they think on the answers using the tool functions on the IWB. The sample was sixth grade primary pupils. To evaluate the experiment, Hwang et al. (2006) conducted a questionnaire to assess the pupils' satisfaction with multimedia model. The results show that pupils were satisfied with the use of the multimedia whiteboard model as it helped them with learning "fractional division", p.105. The results also further show that most students liked the collaborative learning they did. However, the study results also revealed that female outperformed male in problem solving and in the discussions about the mathematical answers they gave.

In order to find out whether IWB-equipped classrooms really used IWB's or not in teaching mathematics and in order to investigate the pedagogies used in ICT equipped classrooms where mathematics as a subject is taught and IWB-equipped classrooms with the same purpose, using video data, Zevenbergen & Lerman (2008) analyzed teaching done in forty five classrooms using ICTs and fifteen classrooms using IWBs. They video-taped lessons and also they had transcripts telling of what would happen in the lessons and teacher-student interactions. Zevenbergen & Lerman (2008) confirm that their own data confirm what Smith et al. (2006) stated before and mentioned earlier: they claim that whole class teaching was dominant in IWB-aided lessons. They then confirm the findings of Smith et al. (2006):

> …where we could observe the level of questioning being used by teachers in lessons. It was of a lower level format where teachers were asking more recall questions than those requiring deeper levels

> of understanding. This type of questioning also allowed for a quicker pacing of the lesson since teachers were able to ask quick fire questions where there was little depth in the responses required. The predominant approach used by teachers when using the IWBs was that of whole class teaching, p.113.

Zevenbergen & Lerman (2008) describe such a setting as that in which a teacher runs a lesson inviting students to take part and to "manipulate objects", p. 113. They report that students' participation was very limited: only one student participated at each invitation. However, they noticed that the students were focused on the talk and actions of the teacher and they claim that this particular observation was prevalent in all the lessons and schools. In fact, they declare, this observation shows how students are following the course of their lessons.

Zevenbergen & Lerman (2008) also summarize the points when, where, or what teachers use IWBs. They state that teachers used them in quickly paced introductions, in lessons where other teachers have developed their content, in availing the functions of calculator, clock, or fractions). They also report that the teachers used the packages that came with the boards and these packages were used by all the teachers across all lessons and schools.

Zevenbergen & Lerman (2008) declare that the board was useful in teaching students fractions and the mathematical shapes, e. g. circle, rectangle, and square. Using the fraction tool on the IWB, for example, which gives out a number of shapes for the teacher to choose from, the teacher could teach students fractions. However, it could be argued that other tools or functions; for example, the highlighting tool was not used in lessons.

Zevenbergen & Lerman (2008) enhanced their observations with a qualitative tool. They employed three observers' ratings in order to identify how much pedagogy was used on a scale from zero to five where zero reflected that teachers employed no pedagogy at all and five maximum employment of pedagogy.

They also sought to assess the quality of teaching in terms of intellectual experiences and social learning in the same way QSLRS did (Education Queensland, 2001). It is worth clarifying that QSLRS indicated that teachers "were very good at providing a supportive learning environment but that the intellectual quality was quite poor", p. 115. Thus, Zevenbergen & Lerman (2008) carried out an analysis for the assessment. They reported that the learning environment in mathematics was considered the least enjoyable; consequently, they inferred that the 'intellectual quality and social learning in mathematics (across all years of schooling) was poor', p. 115.

Arguably, it could be claimed that Zevenbergen & Lerman (2008) found that while the use of ICTs as tools to support the learning of numeracy resulted in very low levels as far as quality learning was considered, the use of IWB's to attain the same purpose was even lower. According to them, the IWB methodology was particularly poorer with respect seven dimensions: "problem-based curriculum; knowledge integration; description; academic engagement; self regulation; explicit criteria; and social support", p. 115.

Zevenbergen & Lerman (2008) actually suggested that the use of IWB's provided "little autonomous/independent learning opportunities for students" in mathematics classroom, p. 115. However, it is not clear literature provides evidence that the same is true in a language classroom.

As reported by Higgins et al. (2005) as mentioned earlier in this chapter, in one of the biggest scale studies conducted to evaluate the teaching/ learning success based on vast installation of IWBs in England, a pilot program called "*Embedding ICT in the Literacy & Numeracy Strategies"* was administered in 2003-4. Data were collected from primary school teachers and their students whose ages were eleven years old in three subject areas: English, mathematics and science in sixty seven schools in six Local Educational authorities (LEAs). The areas of investigation were students' achievement, structured observations, and the perceptions of both teachers and students. The results found that the technology used led to changes in teachers' practices in teaching mathematics. Also they clarify that the perceptions of teachers and students were even much more positive. However, the results also show that the

gain in the students' attainment on the national tests was very small. For example, the effect-size in mathematics was *0.10*.

In a later evaluation (2004) within the same program – this time with eighty schools participating and students' ages 9-11, the effect size for mathematics was *0.00*. This was described as "very small and short-lived", as reported later by Higgins (2010:8). Also, results found that the technology used led to "significant changes in teachers' practices and in aspects of classroom interaction", p.1. Also they clarify that the perceptions of teachers and students were much more positive. However, the results also show that the gain in students' attainment on the national tests was "very small and short-lived."(p.1)

Thus, of all the previous studies, it is deduced that the IWB is generally seen as enjoyable, useful, and satisfactory in teaching mathematics. However, its impact on achievement does appear to be somewhat variable.

Impact in chemistry

In chemistry, a study comparing the differences in achievement between college students who taught six organic chemistry lessons in an experimental group benefiting from a constructivist, technology-rich teaching environment on one hand and other students in a control group taught in a traditional method on the other (Dhindsa and Emran, 2006:
175). The study took place in Brunei and the sample was 115 students in the total of both groups. The ages were 16-19. The group with the higher achievement was the experimental: the results reveal that statistically significant gains for students who were taught using IWBs were attained, with the IWB group's effect size 2.68 and the control group's 2.16. It is noteworthy that, based on these figures, the study suggested that the IWB should be used for raising students' achievement.

Therefore, the previous suggestion can, in a way, be of a further boost to this study's claim that the IWB might help with raising the medical students' achievement in academic written English. Also, it can be understood that literature on the impact/effectiveness of the IWB in chemistry is limited. However, the fore-

mentioned study shows positive impact regarding achievement, which can support the views in this direction.

As investigated later and as related, it was apparently found that the program "Embedding ICT in the Literacy & Numeracy Strategies*"* (Higgins et al. 2005) reached slightly different results in science. As mentioned earlier in this chapter, the program aimed at evaluating the teaching/ learning success after the installation of IWBs in England. Data were collected from secondary school teachers and their students whose ages were ten and eleven years old in three subject areas: English, mathematics and science in sixty seven schools in six LEAs. The areas of investigation were students' achievement, structured lesson observations, and the perceptions of both teachers and students. The results found that the technology use led to changes in teachers' practices. Also they clarify that the perceptions of teachers and students were much more positive in all subjects. However, the results also clarify that the students' gain in attainment on the national tests was very small. For example, the effect-size in science, which is the main concern in this section, was *0.11*.

In a later analysis (2004) within the same evaluation the effect size for English was -*0.11*. This was described as "very small and short-lived", as reported later by Higgins (2010: 8). Also, results found that the technology used led to "significant changes in teachers' practices and in aspects of classroom interaction", p.1. They further clarify that the perceptions of teachers and students were much more positive. However, the results also show that students' gain in attainment on the national tests was "very small and short-lived.", p.1.

Impact in special education

It appears that the use of the IWB in special education is different. This is obvious in the literature dealing with this area. It was found out that the IWBs are positive in attracting students to learn and engage them in activities (Alfieri, 2006: 6). The board is said to be providing a 'wide range of special needs' to the students, p 6. This can be linked to another similar issue which is found not only in special education learning but also in all kinds of learning. That is, the board is claimed to offer options for students' different learning styles and approaches to learning. This view is

supported in many studies, e. g. Bell (2002), SMART Technology Inc (2004: 6); Cuthell, (2005a); Cuthell, (2005b); Alfieri (2006: 2); Smith et al 2005: 7). Highlighting this issue, the last study states that the reason why IWBs cater for different learning styles lies in part in that they enable teachers to use 'the visual, verbal, and sequential material' (p.4). From a different perspective, with regard to the medical school Education, utilizing multimedia, as is the case of the present study, for the medical school students should be stressed (Stensaas, 1994:133) as books have some drawbacks, e.g. they do not animate (ibid.: 134). She suggests that faculty not having much knowledge about multimedia should have new skills. This can be considered as self-evident.

Impact in health

In health, Langlois (2006) did a study assessing the effectiveness of the computer concept mapping technique on a SMARTBoard compared to the traditional PowerPoint technique. It is reported that forty six final year nursing students were divided into one experimental group and another control group and that the post test study results revealed that no statistically significant differences were found between the two groups. Out of this, it might be claimed that the sample of this study is not as large as should be as forty six students could be said not to generalise results elsewhere. It is worth mentioning that to be able to generalise, a researcher should depend on a considerable number of individuals in a specific population. This might lead us to think of the importance of significant and fair representation of a certain population in scientific research.

Impact in music

In the teaching of music, Nolan (2008) used the IWB as a tool for supporting interactivity and assessment. She taught music lessons with the board in her general elementary classroom in a program called OMA (Tucson Unified School District's Opening Minds through the Arts) for three years. During the three years, she piloted the use of the IWB and tested the possibility of using various applications on the tool. Also, she succeeded in training other teachers to used the board into every classroom within the program devoted to the integration of arts. She declared that the tool was confined to the mathematics and science subjects in her district, but, by discovering

new application which can enhance music instruction, she, as well as the other teachers, could use the tool within music classes, p. 3.

She points out that "The use of a finger—or included digital pens—controls the computer, enabling even young students, who may be unable to control a mouse or hold a pen, to operate the board successfully", p. 4. She explains that the board is useful students' interaction with music software:

> Through IWBs, teachers can also expose students to available music software. In my classrooms, I enjoy using the programs Music Ace and Finale with students. As an example of one such lesson plan, I have included the lesson entitled "Writing Alternate Lyrics to 'Twinkle Twinkle Little Star' using Finale," as an example of how music software can enhance classroom learning with the aid of an IWB. Fingers or the digital pens become the computer mouse as students explore composing and music lessons using modern software. The possibilities are truly endless with how a teacher uses IWBs, p. 4.

She adds that the tool has benefits for a wide range of students and that:

> Unlike a traditional whiteboard or chalkboard, teachers can appeal to aural and musical learners in the classroom by controlling sound and playing music from the interactive
> whiteboard using music software such as Windows Media Player or iTunes, p.4.

She concludes that the board can bridge the gap different learning styles within the classroom. She denotes that enables students to do various tasks suitable to them: it makes them hear music, describe it, move in line with the musical rhythms, draw musical phrases, and ' manipulate these drawings to fit musical interpretations', p. 4.

Also, she claims that IWBs enhance the assessment of creativity and produces instant results for individuals. She claims that:

> The function to save whatever is on the screen aids in instruction, assessment, and content review. By saving all progress—taking a snapshot

> of the screen—lessons can resume exactly where they left off with all notes, markings, and drawings saved to the file, which is impossible with a traditional whiteboard. One of the great benefits for teachers is the ability to use the same material with each class but to save each class' progress under a different file name; this allows each class to create its own markings, and the lesson progresses in a constructivist manner without altering the original files. This becomes vital when I teach back-to-backclasses; each class maintains individuality throughout the lesson, yet I do not have to create new posters or materials for each class, p. 4.

Thus, it is concluded that although the number of studies related to investigating the impact of the IWB tool in music looks limited, they are in favour of the tool.

Impact in English

In a study (whose main purpose is similar to one in the present one) to investigate "the impact of the interactive electronic whiteboard on writing achievement, writing attitudes, and computer attitudes among (90) eighth graders" in junior high school during a six week period, as earlier mentioned in Chapter I, Bell (2000) reached mixed results. She had two groups, one taught with an IWB, video, and projector and a control group taught in the traditional manner. She found out that the students' achievement in writing was not statistically different in both groups, but that students' attitudes towards computer use were improved, and that their attitudes towards writing were improved, too. These study results, however, apply to high school students in an L1 class. Also, the study sample is *not* university students in an *ESL* class as will be the focus of the present study.

Conversely, in the teaching of academic writing of English, as shown earlier, Bell (2002) had positive results regarding the use of the IWB when determining its impact on attitudes for students in an eighth-grade writing class. The attitudes of the students in the group into question was positively changed towards both computer use and writing instruction (Bell, 2002). This may show what could be described as 'assistive technology' (Wood, 2001; Turbull, 2002: 418) could do.

In a study by Campbell & Mechling (2008) for the evaluation of presentation of target and non-target letter sounds to a small group of students on a large IWB using a 3s CTD (Constant Time Delay) procedure, there appeared to be some effectiveness of the two elements. The study was a step ahead in the evaluation of incidental and observational learning as well as in multisensory instruction. The students, who had learning disabilities, were allowed to simultaneously see, say, hear, and touch the letter sounds displayed on large interactive touch screen. The researchers claim that "Although multisensory instruction was established in the 1920s, there has been a paucity of research in the area", p.48.

The study (ibid) investigated the instruction of fifty-two letter sounds, and also fifty two letter names were screened on an individual basis by presenting letters in both cases: upper and lower to each student on a PowerPoint slide presented on the IWB. In each session, Campbell & Mechling (2008) demonstrate, fifty two letter sounds. Trials were displayed on the IWB screen by presenting one lower or upper case letter and students were asked, "What sound?" when the fifty-two letters were presented, not in an alphabetical order, students were asked, "What letter?" The researchers used trials which amounted to 104 in each screening session with a total of three sessions and they selected number of eighteen letters from the number of unknown letters across the three students. Results, again, show the effectiveness of the interactive white board technology and the 3s CTD procedure in teaching letter sounds to students with learning disabilities:

> "Upon introduction of small group instruction with SMART Board technology plus CTD for each letter sound set, unprompted correct responding increased to criterion level for each student. Criteria was reached within six sessions for Sets 1 and 2, whereas Set 3 required 12 instructional sessions. Jessica had difficulty with naming the sound for letter "E." She confused the sound with the letter sound for "A" in her same set and the sound for letter "i" from Michael's Set 2. Maintenance probe sessions indicate that all students maintained their ability to name the sounds of their target letter sets up to 50 days for Set 1, 31 days for Set 2, and 3 days for Set 3", pp. 53-54.

Campbell & Mechling (2008) also reveal that it appears that through observation all students learned some of the other students' target sounds by presenting instruction via the SMART Board and CTD. They clarify that although correct reading of non-target, observational letter sounds remained low until letter sounds were presented during small group instruction, data indicate that each student was able to name a number of sounds related to other students before the introduction of new sets.

It is worth mentioning, however, that Campbell & Mechling's study (2008) focused on quite disabled siblings naming the sounds or reading them. Their focus was, again, not university students, neither did it focus on the overall writing skills, no matter how much successful in raising the pupils' achievement in reading/ pronunciation.

As reported by Higgins et al. (2005), and as mentioned earlier in Chapter I, in one of the largest studies conducted to evaluate the teaching/ learning success based on comprehensive installation of IWBs in England. The areas of investigation were students' achievement, structured lesson observations, and the perceptions of both teachers and students. The results found that the technology use led to changes in teachers' practices Also they clarify that the perceptions of teachers and students were much positive. However, the results also clarify that the students' attainment on the national tests was very small. For example, the effect-size in English, which is the main concern in this section, was *0.04.*

In a later evaluation within the same program in 2004 - this time with eighty schools participating and students' ages 9-11 - the effect size for English was *0.02*. This was described as "very small and short-lived", as reported later by Higgins (2010: 8). Also, the results found that the technology used led to "significant changes in teachers' practices and in aspects of classroom interaction", p.1. Also they clarify that the perceptions of teachers and students were much more positive. However, the results also clarify that the students' attainment on the national tests was "very small and short-lived.", p.1.

It is obviously important it be clarified that the previous effect size was related to primary school students and involved all the skills of reading, writing, listening and speaking (which is different from the nature of the present study).

Actually, results of research incorporating the use of the IWB is not always consistent as far as teaching writing is concerned. Although the tool, in addition to 'interactive talking books', was used for improving whole class writing of a number of six primary children in Scotland (Martin, 2007: 26), it was found out that not all the class benefited from this approach to the highest degree. This being put into account together with evidence from previous research stating that some features on IWBs are not utilised in lessons and therefore their interactive capabilities are abandoned (Miller, 2006: 1) suggests that more investigation should be considered. Besides, when impact on learning and teaching is limited, it is very likely that teachers do not maintain the balance between interactivity and pedagogy (Glover & Miller, 2001: 257). This suggests that a skilful teacher needs to be aware of *when* to use the tool. Miller, Glover, and Averis make clear that when technology is used separately from, not integratedly in, teaching, this makes interaction limited and harms learning (McCormick & Scrimshaw, 2001). IWBs do not fundamentally require changes from the conventional pedagogical paradigm (Smith et al., 2006).

Impact in teaching in general

It is found that literature in this respect suggests that although some impact of the technology may sometimes appear, it is temporary and not extensive**.** For instance, in the Isle of Wight, the impact of the IWB was investigated in a number of schools. It is reported that 'the IWB makes the most impact when it is used within effective and creative teaching approaches and is not viewed as better for teaching in every instance.' However, from another perspective, it is revealed that IWBs have started to have an impact on the teaching-learning process on the Isle of Wight. This can raise questions regarding how far and in what ways this impact stands.

Smith et al. (2006) reported the impact of the '*Embedding ICT'* project (reported above) with respect to classroom interaction. According to them, significant differences were found between lessons (n = 184) using IWBs and those not using it. The lessons involving the technology contained more whole-class teaching and less group work, and this was true for both mathematics and literacy lessons. With regard to the frequency of discourse moves (Sinclair & Coulthard, 1975), the lessons involving IWBs had significantly more open-end questions, answers from pupils and

evaluation by the teacher. All the three moves together (the typical Initiate-Respond-Feedback structure) contributed to a faster pace in the lessons with an IWB (a percentage of 16 % increase in total moves). The frequency of answering in IWB lessons was higher, but it was declared that the percentage contribution of the answers to the lesson remained the same; in other words, there were more but shorter answers in IWB lessons. The amount of evaluation by the teacher the lessons involving the tool increased, along with uptake of questioning (where teachers embed a pupil's response in any subsequent question) although presentations from pupils were less frequent in lessons involving the tool. No gender differences were found between lessons with an IWB and lessons without it. There was no interaction effect between gender, IWB involvement and the subject taught. They conclude, 'While our findings support some of the claims being made for IWBs, they do not suggest a fundamental change in teachers' underlying pedagogy' (p. 454).

In other words, Smith, Hardman, and Higgins (2006) investigated the impact IWBs on teacher-pupil interaction in the National Literacy and Numeracy Strategies at Key Stage 2. The findings there seem to indicate an 'impact on students on the discourse moves used in whole class teaching'. However, this impact is not as extensive as that claimed by those who advocate the use of IWBs. Nonetheless, they clarify that classes where the board was used spent less time and had faster pace when the students worked in groups. To achieve their aims, they (ibid.: 443) did observations in a huge number of lessons distributed over two years to find out the extent of the differences in classroom interaction when a teacher used an IWB compared to when they did not'. They reached a conclusion that there was an increase in whole-class teaching and decreased group work,
and a tendency to reduce the length of student responses (Smith et al., 2006). In fact, this point can be considered a weakness, but it should be weighed against the overwhelming strengths mentioned earlier and later.

Although Smith et al.'s (2006) efforts seems to be huge, it may be argued that, while turning it into fact, they observed every teacher *once*, which could be considered as not enough for a thorough investigative observation. However, in total, the study can be seen as a positive step forward in the number of lessons covered as well as in the

identification of interaction taking place in classes using IWBs and in those not using it.

From another perspective, in the field of teacher education, student teachers were asked to air their views on the use of the IWB in the elementary schools in which they train. They all express similar attitudes and possibilities of future use. They reveal they are enthusiastic about using the board and willing to utilize the interactive features it has. It is also deduced that such training enhances student teacher's understanding of the technology for both teachers and children, particularly in children's early years (Kennewell & Morgan, 2003; Higgins et al., 2007).

According to Higgins et al. (2007: 219-220), in their review of literature on the impact of the technology, there are no clear conclusions in favour of an impact on achievement. They made it clear that there were *optimistic views or assumptions* that the tool would have an impact not only on students' attitudes but also on their achievement. They (ibid, 2007: 220) also, as stated earlier in this chapter, argued that research on classroom pedagogy and interactivity was *not* so much and enough for the attempts to establish empirical grounds for such optimism.

In fact, Higgins et al.'s (2007) carefulness is rewarded in Moss et al. (2007). Moss et al. found that, having conducted their related statistical analysis, there was no identifiable impact on pupil achievement after the first year of a project in which London secondary school core subject (English, mathematics and science) departments were fully interacting with the technology.

In a large-scale project study conducted by Marzano Research Laboratory (2009) across the USA, the effect of the Promethean ActivClassroom on students' achievement was examined in fifty schools in the year 2008-2009. This massive scale did not only cover a big number of schools, but also it included a full coverage of the subjects taught at those schools. It is reported that the sample of the study was 1716 students in the treatment group and 1622 in the control group. According to them, the treatment group used the Promethean ActivClassroom while the control utilized materials and strategies from instruction without the use of Promethean ActivClassroom. Eighty five action research studies conducted by teachers were

statistically considered. The sub-aims were to find answers to a) whether the Promethean ActivClassroom has effect on students' achievement in the subject matter, b) If any, whether the Promethean ActivClassroom effect differs between school levels, c) whether the Promethean ActivClassroom effect differs between grade levels. d) whether the Promethean ActivClassroom effect differs between academic content areas e) whether the Promethean ActivClassroom effect differs according to the experience time of the teacher, f) whether the Promethean ActivClassroom effect differs according to how much time the technology is used in the classroom g) whether the Promethean ActivClassroom effect differs based on the instructional time the technology is utilized in the classroom h) whether the Promethean ActivClassroom effect differs according the teachers' confidence in using the technology.

Marzano Research Laboratory (2009) state results show that the average effect size for the 85 independent studies was statistically significant ($p < .0001$) and when corrected for attenuation, the percentile gain associated with the use of Promethean ActivClassroom was 17 percent. The laboratory then reached the inference that the overall effect of a 17 percentile point gain was probably not a function of random factors that were specific to the independent treatment/control studies; to them, rather, the 17 percentile point increase represented a positive change in student learning. Their meta-analytic findings suggested relatively large percentile gains in student achievement under four conditions:

- a teacher has 10 years or more of teaching experience
- a teacher has used the technology for two years or more
- a teacher uses the technology between 75 and 80 percent of the time in his or her classroom
- a teacher has high confidence in his or her ability to use the technology

Marzano Research Laboratory (2009) shows that at school level, the weighted mean effect size for the elementary, middle, and high schools embedded in the sample was statistically significant for elementary school ($p < .0001$) and high school ($p < .001$), but not middle school. They also state that the percentile gain for all the three levels was positive.

At grade level, the sample covered grade levels, K-12, Marzano Research Laboratory (2009) state that the weighed mean effect size was statistically significant for six grade levels: fifth and ninth grades ($p < .001$) and first, second, third, and sixth grades ($p < .05$). They reveal that the percentile gain was positive for nine grade levels. However, they declare that not all grades were included in the statistics because some teachers had taught more than one grade.

Marzano Research Laboratory (2009) reveals the random effects for four academic content areas: language arts, mathematics, science, and social studies. They state that mean effect size was statistically significant ($p < .01$) for language arts, mathematics, and science, but that this was not the case for social studies and that the percentile gain was positive for all four academic content areas.

With respect to the teacher experience effect, it is reported that the mean effect size was statistically significant for the second and third quartiles ($p < .01$) and the first and fourth quartiles ($p < .05$) and that the percentile gain was positive for all four quartile ranks.

With respect to the time the teacher has utilized the technology, Marzano Research Laboratory (2009) state that the mean effect size was statistically significant for the fourth quartile ($p<.001$), the first quartile ($p < .05$), and the second and third quartiles ($p < .01$). They also add that the percentile gain was positive for all the four quartile ranks.

With respect to whether there is an effect based on the instructional time the technology was utilized in the classroom, they reveal that the mean effect size was statistically significant for the third quartile ($p < .0001$) and the second quartile ($p < .01$), but it was not for the first and fourth quartiles. They also add that the percentile gain was positive for all the four quartile ranks.

With respect to whether there is an effect based on teachers' confidence in their utilization of the technology, Marzano Research Laboratory (2009) state that the mean effect size was statistically significant for confidence rank 5 ($p < .001$) and

confidence ranks 3 and 4 ($p < .01$), but it was not for confidence rank 2. They also add that the percentile gain was positive for all the four reported confidence levels.

However, it is important it be mentioned that the independent teacher studies involved action research which might itself have led to improvement and that the teachers themselves undertook the attainment tests, which might thus involve a degree of experimental bias.

From another perspective, it should be said that the previous study has a highly significant importance not only for its big scale of survey, but also for the type and uniqueness of information it gives.

Pedagogy

Generally, there appears to be *three* kinds of approaches used by teachers with the IWB. These are described as 'the supported didactic, the interactive, and the enhanced interactive' (Becta, 2005: 12; Miller, Glover & Averis, n.d.: 2). These teachers' roles vary to some extent. According to Becta, (2005: 12) and Miller, Glover & Averis (n.d.:2), these roles are identified as follows:

- The supported didactic

The teacher uses the board as a boost to visualise material, not as an integral part in developing concepts. Students are not involved in discussions and they do not use the interactive capabilities of the tool. Not all the board features are utilized well. This kind of teacher does not much develop materials using the capabilities of the board and students still feel the board is a novelty (Becta, 2005, 12).

This kind of teaching is claimed to be traditional because interactivity is limited (Miller, Glover & Averis, n.d.: 2). The present study supports this claim as the interactive capabilities of the board should be woven into lessons. In other words, the interactive capabilities of the board should be woven into pedagogy.

- Interactive

This kind of teacher tends to use the board to stimulate students' responses and to visualise some concepts. Students are urged to think a lot through 'the use of a variety of verbal, visual, and aesthetic stimuli'. More capabilities of the board are used in the lessons and more software is there. However, sometimes, when interactivity is used a lot, there is 'a fallback to conventional teaching' and the board is looked on as a normal facility in lessons (Becta, 2005: 12).

However, Miller, Glover & Averis (n.d.:2) state that this kind of teacher sometimes lacks confidence and does not use all the features of the board.

- The enhanced interactive

This kind of teacher is fluent in using several techniques to employ the board to the best as an integral part of the lesson. They use the different capabilities of the board and allow more discussions at all levels and stimulate students' responses. They also develop various hypotheses, structures and use various applications to test understanding. They also use internet resources and home prepared materials as well as IWB software and commercial applications (Becta, 2005: 12).

Becta (2005: 12) imply that these kinds of teachers can become stages, with the enhanced interactive as the biggest aim for teachers using the board to aspire after. However, Miller, Glover & Averis (n.d.:2) mention them as 'outcomes' or 'patterns of pedagogy'. The present study sees either name possible according to the perspective, that is, whether it is the teacher or the pedagogy.

Armstrong et al. (2005) support the view that teachers are the highest level controllers or masters who can affect the technology presentation either positively or negatively according to their management and prior good preparation. They (ibid. 2005) present the outcomes of an Economic and Social Research Council (ESRC)-funded research project whose purpose aimed at capturing, analysing and communicating the complex interactions between students, teachers and technology which occur in the classroom. Both teachers and researchers utilised an innovative research design developed by the InterActive Education project (Sutherland et al., 2004). Videoed case studies were conducted in four classrooms, focusing on the use of the IWB for teaching and learning. The teachers involved in the study developed

coding systems with the research team, based on the learning aims and objectives of their particular lessons.

In more detail, Armstrong et al. (2005) used two video cameras 1) to record interactions with the tool within a range of classroom lessons which were given by four teachers and 2) to capture a whole view of the class during the lessons. Using edited software, the researcher made up a whole picture from the two cameras where all pictures could be seen simultaneously. They then gave it on a compact disk to all the teachers involved. From all the lessons, researchers selected a number of interesting clips for teachers to view. The teachers also viewed the related video data and both were displayed simultaneously. Also, teachers provided a number of videos from their own practices. Both researchers and teachers participated together in an analysis session. In order to maintain 'transparency' while conducting analysis, the researchers used Lesh and Lehrer's (2000) model for the iterative analysis of video tapes. Both teachers' observations and researchers' views were made use of.

According to Armstrong et al. (2005), alongside the class sessions, detailed semi-structured interviews with the four teachers were administered together with six pupil two focus groups in each class, after the range of lessons had been videoed and fully transcribed. The joint sessions between researchers and teachers were also video-taped and transcribed and used to help with analysis.

To examine the complex classroom interaction when the tool was used, both researchers and teachers in the study agreed on a set of categories to be detected. The team developed iterative codes for this investigation using their video recordings. The teachers' data were applied to the categories which were

- Questioning: this includes any question asked by the teacher or students.
- Subject Vocabulary: this includes 'vocabulary that matched with the learning objectives and were clear examples of students' use and understanding of subject language and subject knowledge
- Teacher instigated subject-specific vocabulary
- Pupil instigated subject-specific vocabulary

- Instructional/Directional: these were statements that related to the manipulation of the software and ICT and were not related to subject language, p.460.

Their case studies demonstrate that the introduction of IWBs into the classroom is more complex than just the installation and the software. The researchers make it clear that teachers are 'critical agents' who manage the software and who ensure the related integration into any subject lesson aims and the appropriate handling of the technology in order to promote quality interactions and interactivity. They also argue that training, in addition to ongoing support, is required for teachers to appropriately make use of such technology and to give them a better opportunity to choose suitable software. Their conclusion is that the potential uses of the technology are often not attained.

Armstrong et al. (ibid.) sees that the IWB can afford interaction if the teacher sees it as a tool which can achieve a certain purpose in their lesson. Conversely, they make clear that the tool 'may not afford interaction if it is perceived as a 'presentational tool only', p. 459. They also explain the basis for interaction:

> Our use of the term interaction foregrounds the give and take between pupils and teachers, which goes beyond a superficial learning scenario to a stimulating interplay which leads to new formulations and new understanding. We use the term interactivity to focus on the functional aspects that technology and software provide. An IWB can afford interactivity by making use of the different ways of manipulating the applications running on the screen, p. 459.

It appears that there is a central idea that the potential affordances of the tool can be achieved only if a sensitive, experienced teacher who believes in its relevant features presents material, letting students interact with the tool where appropriate. Armstrong et al. sum up this view:

> In other words, what students learn relates to how a technology is used in the classroom, and how a technology is used relates to the teacher's (and

> students') perceptions of how it can be used, which also relates to their previous experience of similar technologies, p. 459.

Generally, Modern Foreign Language (MFL) Teachers, as teachers who use the technology, operates various applications on an IWB. These teachers are reported as using CD ROMs, websites, and Windows Office files, such as Word files and PowerPoint slides on the board to clarify, annotate, move, take out, manipulate, and hide linguistic items (Thomas, 2003, 2).

To sum up, to maintain balance, teachers of all subject areas, especially those of English Essay writing who are the focus of this study, can benefit from both interactivity and pedagogy rationally, as appears from literature. The literature also states that there also seems to be three kinds/stages of IWB teachers (including teachers of essay writing who are related to the present study): the supported didactic, the interactive, and enhanced interactive. The most professional is the enhanced interactive.

It then looks that using IWBs - through the software on them - on the part of an understanding, capable teacher of essay writing could be of substantial benefit to learners' writing. This also makes us question whether other technology than the IWB could be obviously as supportive of the efforts of teachers who use it. Therefore, the following section will investigate this issue,

Impact of other technology on writing

A number of studies report on whether computer/computer related technologies can enhance writing. It is observed that literature in question is in favor of computers/computer-related technologies. Lindblom-Ylanne et al. (2003), for example, state that in their study on 25 law students, good essay scores were related to the use of computer-networked environment. Despite this, they reveal that students fell in two categories: one group who were enthusiastic about the sharing of their drafts and another who felt embarrassed because they did not want to share their unfinished work with their peers. However, the earlier finding is argued to be quite supported by Merchant's later-discussed finding (2003): that email enhances writing, too, in that seeing drafts in a network is not much different from seeing them

after they have been sent in an e-mail. The outcome is the same. Further studies follow.

As a revolutionary tool, Wiki can enrich learner's discussions and learning. In other words, Wiki is a piece of server software which allows users to freely create and edit Web page content using any Web browser. Wiki is hyperlink-supported and has simple text syntax for making up new pages and cross links between internal pages on the fly.

In general, Wiki is an unusual fad among group communication mechanisms as it allows the organization of contributions of group members to be edited in addition to the content itself. "Different wiki services offer different features, although they commonly include the ability to compare previous versions of a page, discuss issues prior to making changes and track who edited what and when.", as expressed in www.en.wikipedia.org (2005). Obviously, Wikis are a good means for collective work. They enable learners to share their opinions and overcome barriers of distance and learners can, then, complement other classmates' views about a certain topic or contribute to assignment remotely.

Also, the web involved in distant learning proved effective, e.g. when Garrison et al. (Garrison et al., 2000: 211-216) delivered a *medical course* via the web, this kind of distant learning, according to them, was a success. This reflects how such a capability is valuable in Education and can overcome the distance barrier. Another related application is as valuable.

As created on the web, 'Web logs' were used to develop medical school students' writing, reading, and communication skills in ESP (Arani, 2005). Forty ESL students of Medicine who were enrolled in at the Kanshan University of Medical Sciences and whose English was upper intermediate were divided into two classes. Both classes were given a course. The first class was taught the course through a web log and the other through a traditional way. Results revealed that the web log taught class produced better work although it was their first time dealing with a web log and writing on it themselves. Thirty students preferred writing on the weblog to the

traditional written journal. The majority of students believed that the weblog can improve their English. Arani (ibid.) states that web log offers enjoyable circumstances for learning and adds that it can motivate students towards reading and writing ESP. (Actually, this is a study where students write on the tool themselves, not where teachers use it for presentation purposes)

Other evidence indicates that the writing of first year neuroscience medical students is improved when they type their essays or, if requested, revise versions and submit them through their university campus *network* (Holmes et al., 1992: 83). This happened when forty one students wrote essays on pre-determined topics and sent them through computers (ibid.: 84). It appears, however, that pre-determined topics might not reflect real, transparent fluency in writing and are not as useful as more instant and varied ones.

Merchant's (2003: 104) study states that 'the use of ICT for communicating with those not physically present in the classroom can add a new dimension to literacy work'. They depict that the use of *e-mail* can raise the level of those who begin writing a foreign language. E-mail can make students more innovative in the ways they write to new people (ibid.: 104). It is evidently clear that email also can assist teachers' work either before writing, during it, or after it happens and even it can be used via an IWB connected to the Internet. Overall, as Garrison et al. (2000: 211) suggest web-based learning is claimed to provide developments in learning which is different from the formal learning.

In line with Merchant (2003), Vincent (2001: 242) demonstrates that children with a 'visual learning style' benefit best when instructed with a computer assisted with a 'rich software medium', p. 242. The results of research they conducted revealed that children's writing was as rich in quantity and proficiency due to the use of animations and other visuals as when they involved in narrative tasks. Thus, it is implied that, IWBs as rich software media, can help the visual students as they can show animations and other visuals. It well noted that the board can offer multimodality, too. Kennewell & Higgins (2007: 209) advocate that multimodality is thought by teachers to boost 'less able' learners' difficult concept learning. However, it is the custom that when a new technology is introduced, some challenges appear in

the process of *change.* The following section will then handle the implications of change and the new culture the IWB has created.

The IWB – implications of change and a new culture

It is observed that a number of researchers have used the terms of "change" and "culture" in their description of the differences IWB's have brought to teaching. In this section, the studies of Glover & Miller (2003) and Glover & Miller (2007) will be investigated as they have addressed the two terms and related issues. It is reported that a considerable investment in the installation of IWBs has taken place in a number of countries, as stated earlier. This was the case in the United Kingdom, again as manifested earlier. Consequently, according to Glover and Miller (2003), this investment needed to be monitored within the partnership schools of the Department of Education at Keele University. Thus, Questionnaires and structured interviews were then conducted with the partnership schools case studies undertaken of a school with an intensive level of provision and in the schools in a zone of optimal use. According to Glover and Miller (2003), data were then obtained from two-hundred and twenty teachers, forty-six teachers in training, eleven secondary head teachers, five primary heads, three local authority administrators and one-hundred and twelve pupils. The project considered in detail the dynamics of *change* in eight secondary and three primary schools. According to Glover and Miller (2003), there were remarkable types of individuals who appeared in the management of the change:

- **Missioners** – those are described as staff who use the technology to a maximum, encourage their friend to use it, receive training on the it, and are basically interested in the technology. Glover and Miller (2003) also report that more than fifty percent of the staff in five secondary schools and in one primary school within the sample appeared to have this particular viewpoint.
- **Tentatives** – those who have some knowledge of use about the IWBs and who have access to places with the technology, but the researchers maintain that they are held back because they think they need more training or because they claim that they need much time to become highly

capable of using the technology. The researchers make clear that this type is a majority in two of the secondary schools and in one primary school.

- **Luddites** – those are described as teachers who, despite having had training and access to the technology, were opposed to its use partly out of fear of the unknown and partly because it would require some re-consideration of classroom management. According to Glover and Miller (2003), this appeared to be the general attitude in one secondary and one primary school.

- **Revolutionaries** – those are reported to be convinced of the value of the importance of availability of the new technology and have to some extent lead the introduction of pilot studies so that staff can be aware of what is intended. Glover and Miller (2003) state that these members are determined to plan for change and undertake much missioner job as a prelude to this. They are claimed to have achieved what they wanted with little collegiality in policy making. Three secondary and one primary head-teachers out of the whole sample of the survey fitted this description.

- **Gradualists** – were reported as aware of the need for change. However, they feared that financial budgets, the slow development of staff and the concerns about the new technology would lead to the possibility that change had to be made slowly. According to Glover and Miller (2003), this group were more pragmatic in approach but it looked like they used development planning as a shield against a sudden change. This type, they maintain, represented the attitudes of three secondary and two primary head teachers in their survey.
- **Reactionaries** – were described as doubtful of the capabilities of the new technology and were reported to hinder real development by using development planning and time-consuming consultation. According to Glover and David (2003), two secondary head teachers fitted into this category. They were generally opposed to the change.

Out of all the previous categories, Glover and Miller (2003) see that the missioners had more positive views in evaluation of the feature of whiteboard use although

they admitted having problems with the preparation time, and they declared being harsh in their self-evaluation of the technological aptitude. Glover and Miller (2003) also report that they were in the process of changing their teaching method to adapt to the requirements of the new technology in order to have the maximum benefit of interactivity. This view is highly supported by the present study as in the process of change, staff such as the missioners as described do play a supportive role not only in using the equipment to its maximum but also in encouraging, explaining the potential of the new technology to, and helping other staff and preparing them for the change.

In the survey, Glover and Miller (2003) also report that four "patterns of change" appeared due to the interaction between head teachers and staff in the process of change, p.22:

A. Peer Persuasion.

B. Driven.

C. Chance.

A head-teacher changing their view from opposition to usage of the technology.

C. Inertia.

In a secondary school the combination of Luddite staff and reactionary leadership set obstacles to further development of the technology.

This view which expresses varied teacher attitudes towards the introduction and installation of the technology - but this time from a quite a different direction: towards the need to change their teaching methods to adapt to the requirements of the new technology - is also supported by Glover & Miller (2003, 2005), p. 21. They even see that this intensive introduction has created a "culture" out of "the totality of learning experience", p. 21.

Even at an experimental level, when part of a research project conducted by Glover and Miller (2006) on the introduction of IWBs into teaching rooms in mathematics departments in seven secondary schools, subsequent result analysis shows that the

experience of pupils appears to be changing when teachers have become more competent in teaching with the IWB. It is reported that 46 lessons were video-recorded six months after the introduction of IWBs and this is why this experience is recognized by students. According to Glover & Miller (2007), this experience is affected by the way a teacher believes or is made to believe in the capabilities of the technology for changing pedagogy in order to achieve a maximum benefit of the technology and by the way departments share professional developmental knowledge. They describe the experience with the technology at schools to be one of three:

1. "individualist" which means with the initial introduction, there were highly capable teachers who cared for interactivity, the experience is not shared between departments and there is no coordination in action.
2. "incrementalist" which means with a more intensive introduction and teachers at varied understanding and abilities and the teacher's speed towards interactivity dependent on external factors rather than on the teachers themselves, the departments of those teachers showed a degree of experience sharing when momentum is given from the external sources, or
3. "innovatory" which means with technology spreading across all teaching rooms in all departments and teachers caring for pupils' varied styles, this school have achieved change and it helps with development and experience is shared across the departments, p.21.

In the process of change –or in this new experience or culture, as Glover & Miller (2007) call it - several factors have been affected by the introduction of new whiteboard technology according to Glover & Miller (2007), these factors include

_ classroom organization;
_ the classroom as a learning environment;
_ pupil–pupil interaction;
_ teacher–pupil interaction;
_ pair, collaborative and group learning;
_ selection and use of software;
_ selection and use of other learning materials;
_ teacher understanding of pedagogy;
_ the impact of external pressures such as

> examination requirements;
> _ teacher understanding of stepped conceptual development and cognitive understanding;
> _ the IWB as the focus for activity;
> _ the link between activities 'at the interactive whiteboard', 'on the desk' and 'in the pupil's head';
> _ indeterminate but evident rapport between learners and the subject, p.22.

In fact, these factors are seen as ones supporting an effective change. They can make the classroom or a teaching room different to quite a far extent and create a different atmosphere. This gave the momentum to Glover & Miller (2007) to observe the new "culture" they saw emerging at schools. They comment on the previous factors, "All these appear to generate a culture of learning within each classroom. This varies according to the relationship between the factors listed above". They also identified the types for this culture; they state that

> From our work to date we can identify traditional cultures (marked by didactic teaching, routine exposition with worked examples, some class misbehaviour and pupil assertion of boredom), through those which are generally lively (marked by some variation in activity and with episodes where pupils are engaged in productive learning), to interactive cultures (marked by interactive learning, exploration of ideas, group activity and pupil enthusiasm), pp.22-23.

On adopting the previous guidelines, Glover & Miller (2007) classified the forty-six video-recorded lessons according to their point of view on the new emerging culture given birth by the introduction of IWB's into teaching rooms: "traditional, transitory or interactive overall", p. 22, and they took into account the constituent factors they clarified above.

However, according to Glover & Miller (2007), in the process of change, it is implied that there are other elements - excluding the IWB - which can affect the process itself. However, they did not mention them. To quote his words,

> The extent to which changes in the classroom environment, teaching and learning approaches and motivation and attainment can be related solely to the IWB is questionable, p.23.

Back to the process of change, it appears, then, that this process has created a culture based on this change. This culture includes not only classroom organization and management and teaching materials but also other aspects in school. According to Glover & Miller (2007), this culture has reflected changes in "relationships, work patterns and lesson preparation", p 23.

The results of Glover & Miller's study (2007) have shown that "there is a difference when the technology becomes the focus of teaching and learning and there is a pedagogic shift from the didactic to the experiential", p. 23. Also, they claim that their observations in IWB interactive lesson, a number of features were constantly seen. These include

- The teacher had established and then did not deflect from a set of known relationship practices and courtesies.
- The room had been arranged in such a way that the equipment complemented rather than intruded upon the learning environment.
- The lesson preparation had been undertaken in such a way that stimulating software had been integrated into a stepped learning process with a variety of pupil activity revealing a much greater degree of pedagogic understanding than in didactic lessons.
- Although incidentally developed, there was a teacher's awareness of the need to assess individual progress throughout and to offer alternative explanations and at each stage there was concern that there should be a link between 'brain', 'desk' and the interactive whiteboard to ensure learning and consolidation.
- It was evident that the teacher would always be demonstrative, embracing and aware of all pupils, but the use of the interactive whiteboard placed a further requirement for lively interpretation of lively material – in short pupils expected and got a lesson in which mathematics came to life, p. 23.

However, it could be argued that culture embraces other factors other than those created by the interaction with the IWBs, for example, children's backgrounds taken to the classroom. However, Glover & Miller (2009) argue that there is evidence that the technology enhanced with professional development can make a positive change (p.24).

Conclusion

It is clear that technology is a valuable means to enhance teaching and learning. IWBs are relatively new technology which provides opportunities to develop more effective teaching. There has been evidence that they can be beneficial across all subject areas in causing students' positive attitudes towards the tool and towards learning. However, when it comes to raising students' achievement level, there is a lack of rigorous evidence. The subject of English, and even in particular, essay writing, is no exception.

Also, the literature reviewed can lead to a number of deductions. It makes clear that although academic writing is essential to the medical school students, it is not given so much attention on the part of educators. It also claims that little literature has addressed the issue of developing the medical school students' writing. It further tells that writing skills to such students are an important component of their learning in dealing with colleagues and patients and therefore seems like a valuable area to study; however, it appears that no intervention methods were followed to improve the situation although a number of weaknesses are identified, e.g. Chur-Hansen and Vernon-Roberts's study (2000) and Chur-Hansen's (2000). Also, it looks like literature failed to produce comprehensive lists of all the micro-skills and/their related types forming up writing (Nonetheless, attempts to gather such skills and their related types, identify the areas and numbers they represented and the sources they came from, state their frequencies as in literature, analyse them and create practical ways for using them were made during the investigation).

The research further shows that students in all ages like the use of IWBs and have positive attitudes towards them. However, it focuses mainly on *children* and their attitudes and that they always have positive views about the technology, but not widely on *university* students and their attitudes and *never* on medical school

students in particular. It also reveals that computer-assisted learning, particularly the web as a technology and e-mail as a web-powered facility in addition to campus computer networks and computer simulation as aids, can all help with medical school student's writing, but that such an attempt as to assess the impact of the IWB on these students' writing was not made. When focusing on *adults'* learning with IWBs, it appears that the literature does not cover other subject areas than mathematics, health, special education, and chemistry. It does not cover adults' learning of English, history, psychology, for example. Generally, it is observed that a considerable amount of literature is focused on mathematics students either children or adults.

Other conclusions can even be drawn. It can be seen that literature so far in general did not deal sufficiently with the area of the medical school students' academic writing or writing micro-skills, nor with their other language skills, i.e. reading, listening, and speaking, for example. It even seems that improving medical school students' writing as a process was either absent or limited, too. Also, the literature reviewed appears limited in showing a considerable number of studies testing the impact of the IWB as a tool on *improving* students' achievement across various subjects, particularly essay writing of English, which is the pivot focus of this study; or, in a sense, the results of the few studies done still need confirmation – probably except in mathematics teaching in whose area most studies were done. This gives the present study the momentum to fill this gap, attempting to deal with the issue of improving the students' writing in *six* ways, depending on the other conclusions drawn earlier: a) through caring about a neglected skill (writing) which is important to the medical school students and whose improvement intervention methods are almost absent so far b) through intervening with advanced technology whose impact on students' achievement (i.e. on students' essay writing) still needs further investigation and c) through using a tool which has not been tried on the medical students in Egypt and whose impact was never tested on these students in a writing class before, d) through testing the impact of this tool on adult (*not child*) university students, e) through assessing the impact of the board on *ESL* students, probably for the first time, and finally f) through teaching essay *(not paragraph)* writing to the Egyptian Medical School students for the first time.

Based on the above rationale, the following Chapter III will endeavour to utilise and discuss proper methodology and procedures related to testing the impact of the IWB on the Egyptian Medical students' ESL essay writing.

CHAPTER III

METHODS & PROCEDURES

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CHAPTER III
METHODS & PROCEDURES

Introduction

This chapter provides the whole setting for the experimental phase of the study. It will deal with the methods used in the study and the procedures followed to attain its purpose. This is to ensure that the experiment is established and conducted properly. The chapter will therefore describe the subjects, the design, the setting, the instruments (including instrument design procedures), the treatment, a proposed module design, and the procedures of the study. It will also address related issues, such as the validity and reliability related to the design of tools, and 'control' over variables and circumstances crucial for the accuracy of later results.

The subjects of the study

The subjects on whom this study has been conducted are medical school students in the School of Medicine in Ismailia, Suez Canal University. They had graduated from public secondary schools from various local environments. They had studied English for six years before they were admitted to the medical school in order to be physicians at various clinics and hospitals in Egypt. They satisfied the conditions set by the Medical School in Ismailia for admittance, which were mainly having a total Secondary Stage General Point Average of 96.9% and belonging to the Science Section in the Stage. They are preparing to be future doctors in Egypt.

The subjects (n=60) were these students who had been randomly assigned to form an experimental and a control group. They came from the same cultural, social, economic, and social backgrounds – the City of Ismailia where they had lived all their lives with their parental origins either from Ismaila or from Sharkaya, a neighbouring governorate famous for rural activities. Both groups were taught by the researcher conducting the study and one of his colleagues, an English language instructor (the colleague taught the experimental group the first half of the module and the control group the second half; the researcher taught the experimental group

the second half and the control the first, for protection against bias). Since thirty students had attended the experiment in each of the two groups, data from this number of students who completed both the pre-test and the post-test for

the experiment were statistically treated.

The experimental design

The experimentation involved two groups: one control and one experimental. Group A was the control group that first did a test assessing their writing micro-skills, had a survey assessing their attitudes towards writing and was then taught an 'essay writing' module which was based on the micro-skills they needed, in the traditional method. Finally, they did the same writing test and had the same survey again. Group B was the experimental group taught with an IWB. They, in turn, first did the test and had the same survey in addition to a questionnaire assessing their attitudes towards the IWB. Then, they were taught the module with an IWB. Finally, they did the test, the survey, and the questionnaire again. The following table (9) clarifies the design used in the experiment for both groups.

Table (9)

The research design

Group A (Control group)	Writing pre-test	Writing module (traditional)	Writing post-test and a writing attitude survey
Group B (Intervention/ experimental group)	Writing pre-test	Writing module with IWB	Writing post-test, writing attitude survey, and IWB attitude questionnaire

Reasons for choosing a one group experimental control design

There are several reasons why a one group experimental control design was adopted. First, it was adequate for the purposes of the study; it could identify whether there were statistically significant differences between the mean scores of the both groups contained in the design. Second, according to Trochim (2006), such a design is appropriate for assessing impact. He also adds that the design (with one experimental having the intervention and one control group not having it) can not only inform the

impact but it also isolates the whole experiment (i.e. program) from all of the potential causes that are likely to affect the outcome (ibid., 2006). In other words, it helps avoid type one error. (It is noteworthy that this is a crucial point as impact needs to be attributed to the treatment only and not to anything else). Third, it provides control over variables, it is utilised in the best interests of the population, helps to gain insight into teaching methods (Colorado State University, 2010). Finally, it is far from anecdotal evidence (ibid., 2010).

Considerations related to sample size

This study was limited to sixty students from the Medical School at the Suez Canal University (as representing 123 (third year) student population and as randomly selected). However, a power analysis indicates that the design has a 0.8 chance of detecting a 0.75 effect size with 30 students (Lipsey, 1990; Cohen, 1977). The randomised design was chosen so that causal inferences could be drawn (Ibid). Also, it is well known that increasing the sample size is *not* the only way to increase test power. (e.g., it can be increased by increasing the significance level and the true value of the parameter assessed, as well as avoiding type two error which is accepting a null- hypothesis while it is wrong (StatTrek.com, 2010). Furthermore, as a reason of a different nature, the Egyptian government's approval for the experiment to be done was delayed, so it was almost impossible for the researcher to gather more students and, hence, to have a bigger student sample to increase the chances of the effect size and a full power being found in the population. Additionally, no other learners were available in the summer when the experiment was conducted. Finally, given the circumstances of the Suez Canal University, with *one* School of Medicine serving three governorates whose total area exceeded 150.000 square miles, it was impossible to have other medical students involved at summer time, the time of the experiment.

Questions of the study

The present study aimed to answer the following research questions:

1. What are the essay writing micro-skills necessary/important for the Medical School students?
2. What does a module which addresses the essay writing micro-skills necessary for the medical school students look like?

3. To what extent is teaching ESL essay writing with an IWB compared to teaching it traditionally effective in improving the Suez Canal University Medical School students' essay writing?
4. To what extent do the Suez Canal University Medical School students' attitudes towards essay writing change, from before to after applying both of the previously-mentioned methods?
5. To what extent is there a difference between the experimental group and the control group in the change in attitudes towards writing (if any) after applying the previously mentioned two methods?
6. To what extent do the Suez Canal University Medical School students' (i.e. the experimental group's) attitudes towards the IWB change, from before to after applying both methods?

Hypotheses of the study

The following hypotheses were stated in an expected answer to the last four questions:

1. Teaching ESL essay writing with an IWB is more effective than teaching it in the traditional method, as shown by statistically significant differences (at both the 0.05 and 0.001 statistical significance levels) in the mean scores of both the experimental and control groups on the writing post-test in favour of the experimental group post-test at a moderate practical significance level.

(The following hypothesis addresses an expected answer for both questions four & five.)

2. Teaching ESL essay writing with an IWB changes the experimental group students' attitudes towards writing more positively than teaching essay writing in the traditional method (as proved by statistically significant differences at both the 0.05 and the 0.001 statistical significance levels between the mean scores of both the control and experimental groups on the post-test) in favour of the experimental group post-test at a moderate practical significance level
3. Teaching ESL essay writing with an IWB changes the experimental group's attitudes towards the IWB (as proved by statistically significant differences in the students' mean scores at the 0.05 statistical significance level) at a high practical significance level at the pre-post-test stages in favour of the post-test stage.

The setting of the study

The implementation of the study was carried out in the computer technology lab at the Technical School for Information Technology in Ismailia, Egypt. The treatment was conducted during the summer of the year 2008.

Instruments

Four major instruments were developed and used:

1. The Writing Micro-Skill Questionnaire ('Micro-Skill Questionnaire')
2. The Writing Micro-Skill Pre-Post Test ('Writing Test').
3. The Attitude towards Writing Pre-Post Questionnaire ('Writing Attitude Survey')
4. The Attitude towards the Interactive White Board Pre-Post Questionnaire ('IWB Attitude Questionnaire').

The following will address these four instruments in detail in terms of aim, design, administration, and results.

1. The Writing Micro-Skill Questionnaire

The aim of the micro-skill questionnaire was to reach the micro-skills necessary for the medical students and, hence, the ones upon which a writing module which addresses students' needs can be developed. To do this, an inventory containing the micro-skills in research was reached during the nvestigation of writing micro-skills (i.e. as in Table (7) in Chapter II – The Writing Micro-Skills Inventory One). Seventy-five micro-skills were identified from literature and then used in order to design the micro-skill questionnaire (i.e. Appendix A). It contained all the micro-skills identified in the inventory. The questionnaire was submitted to eight jurors to validate it; that is, to rate whether the skills were **not important, less important, important or very important** for the Medical Students, and to comment on the micro-skills. The rationale and purpose of this questionnaire was a real need to satisfy a need for an informed verdict regarding the micro-skills important to the medical students.

As the questionnaire shows, a rating of 4 was given to **very important** skills and a

rating of 3 to **important ones**, while a rating of 2 was given to the **less important** and a rating of 1 to the **not important** ones. As there were 8 jurors, the minimum possible score to identify important micro-skills was 24, as this reflected the lowest possible level at which a micro-skill was considered as important for the medical students. Therefore, whenever the total score of the eight jurors regarding a certain micro-skill reached 24, the skill was deemed to be important and, consequently, taken to be later considered for the writing module which was about be devised.

After the micro-skill questionnaire was distributed to the eight specialist jurors (their areas of expertise were Linguistics, English Curriculum and instruction and Psychological Measurement), the feedback which was received (for a detailed, collective record of the points jurors gave to each skill, see Appendix B) reveals that they considered sixteen of the micro-skills as either not important or less important for Medical Students. These are as follows:

1. *The ability to write a story, e.g. writing down the feelings of a main character, describing the setting*
2. *The ability to make up a short little fiction story*
3. *The ability to write composition in a letter form to a friend*
4. *The ability to respond fully to an assignment*
5. *The ability to express the aim manifestly in a convincing way*
6. *The ability to resort to decisive sources when necessary*
7. *Expressing a particular meaning in different grammatical forms, with a variety of sentence structures*
8. *Using cohesive devices in written discourse*
9. *Distinguishing between literal and implied meanings when writing*
10. *Developing and using a battery of writing strategies, such as accurately assessing the audience's interpretation, using pre-writing devices, using paraphrases and synonyms, soliciting peer and instructor feedback and using feedback, for revising and editing*
11. *Recognizing the linear sequence of sounds*
12. *Writing a one- or two-sentence answer to a specific test question*
13. *Composing a one- to two-page essay in answer to a question*
14. *Writing a letter to the editor of the daily newspaper about a health-care topic*
15. *The ability to complete a term paper*

16. Composing a paper summarising a reading passage

These were later excluded and the remaining ones (56) were thought to be ones important to the students, (see the end of Appendix C).

There was another criterion for further Micro-Skill exclusions from being embedded in a writing module. This was the suitability for the type of the course itself and, as a precautionary measure or procedure, the avoidance of the impact of prior knowledge from another course on the experimental design. Students have a separate *research* course for conducting academic research as a subject; accordingly, all research related micro-skills were taken out. Another reason for exclusion was that students would not have expected the instructors of the writing module to teach them material which they thought belonged to a research-based module rather than English-related. The skills excluded because of this were six:

1. *The ability to document and use citations properly*
2. *The ability to display original and creative thinking*
3. *The ability to write a term paper of 15 to 20 pages*
4. *The ability to write a scholarly article for publication in a professional journal in your field*
5. *The ability to research the subject*
6. *The ability to quote sources accurately*
7.

Only one skill was excluded because of time considerations:
The ability to show proper critical thinking

It is noteworthy that the whole time for teaching both groups was too limited to detect such a skill together with a rather big number of other micro-skills. For more detailed insight into exclusion of other inappropriate skills and the reasons why they were excluded, see Appendices C, C1, &C2.

The micro- skills in the proposed module

After excluding the unsuitable micro-skills (as explained in Appendix C and Appendix C2), the micro-skills that were to be embedded in the module were ready:

they were twenty nine. For a full list of these micro-skills, their representation weights in the module, and their assessment points for the writing test, see Appendix D. Micro-skill relative representation weight in the module content depended on the *load of* points given to the micro-skill by jurors in the micro-skill questionnaire, i.e. it was divided by four and the result was then added to the frequency of micro-skill in literature as shown earlier in Table (7) in Chapter II.

2. The Writing Test

Since the writing micro-skills which were selected overlapped and since they needed to be assessed separately at the pre post test stages, the writing test (Appendix F) does the assessment. (The assessment points for each micro-skill was later determined as will be explained in '***The module description***' in this chapter.) In order to make the test usable for the research, the following two issues were addressed: the validity and reliability of the test.

The Writing Test Validity and reliability

A questionnaire was designed and given to one applied linguist and one measurement psychologist in order to validate the test, i.e. see Appendix E. In the questionnaire, there were three columns, one for **the question**, a second for **the micro skill/s the question assesses** and a third for **does the question really assess the micro-skill/s?** The questionnaire was given to the two experts who agreed that the writing test was valid.

The number of test questions used to assess the micro-skills was two. It was decided that the grade a student would have on the test would be given on the basis of how important a micro skill had been (according to its total points as in Appendix D): more important micro-skills were given more points while important ones were given less, according to both jurors' views on the Micro-Skill Questionnaire and frequency of a skill in literature)

With the split-half method (Cohen and Swerdlik, 2005), the test reliability (internal consistency) was conducted after the test was administered to thirty randomly-chosen students. The scores of those students were obtained and then statistically treated. The correlation co-efficient was 0.71. This (Kaplan and Saccuzzo, 2001) led to the claim that the test was reliable and then ready to be administered.

To confirm and boost any emerging results from the intervention and the control groups on the writing test and to investigate students' attitudes towards writing after the two methods (the IWB vs. the traditional method) were used, an attitude survey was used, based on the literature reviewed in Chapter II. The survey was taken from Ranelli (1998: 229) who used a number of micro-skills of writing which he edited on a scale to test pharmacology students' self efficacy in their writing. The following discusses how this happened.

3. The Writing Attitude survey

The survey in Ranelli (1998: 229) contained items which were used, as previously mentioned in Chapter II, to test the students' 'communication confidence for specific tasks and their confidence on performing writing mechanisms'. Initially, an item from Ranelli's was excluded: 'prepare a *résumé* describing your employment history and skills'. The reason why this item was excluded was that this did not match up with the purposes of the present study which is based on *essay writing skills, not résumé writing*. Then, the survey only had twenty six items after this exclusion.

The scale in the survey is *no chance, somewhat confident, confident, and very confident* where the first option received zero point, the second one, the third two, and the fourth three. The maximum total score was seventy eight points. Each student was requested to see and select which case applied to them. To see the whole of the survey, see Appendix G.

Since the survey was based on one used by Ranelli (1998), there was no need to test its validity and reliability as both were then established. The writing attitude survey (i.e. see Appendix G) and was ready to be administered.

To know students' attitudes towards the IWB, which is an area of query for the present study, a survey which assessed out students' towards the IWB as a tool in the teaching/ learning process was used.

4. The IWB attitude questionnaire

It is worth mentioning that a questionnaire such as one assessing attitudes towards the IWB has never been conducted in Egypt before the summer of 2008. This kind of questionnaire aimed at investigating students' views about its usage in leaning/teaching essay writing and it contained seven items. A scale of five options to represent each student's attitude level towards each item was used: Extremely = 4 points, Mostly = 3 points, To some extent = 2 points, Barely= 1 and N/A or Never = 0 point.

The questionnaire is composed of seven items. These items test such aspects as to whether the IWB is useful, easy to use and interact with, etc. The maximum points a student could have were a total of twenty-four points. Each item was repeated in different wording. The reason why this is important was to find out any haphazard or random answers given by the students and try to exclude any suspicious ones. For example, items one and four are the same. Furthermore, items two and six are closely related. Finally, items three and five express the same idea. The complete items (or questionnaire) are shown in appendix H.

The validity of the questionnaire was checked by passing it to two specialists who added a number of suggestions, such as adding an item which asked students about their views. These suggestions were acted on by adding the last item to the questionnaire.

To test the reliability of the questionnaire, a reliability test was conducted on scores obtained from 30 students who were randomly selected and who did *not* later participate in the experiment in order to avoid the impact of any undesirable student familiarity with the tool. This was a precautionary action against experimental inaccuracy allowing any factors other than those intended to later affect the study results. All the students' answers showed that they were not aware what an IWB was and, thus, they did not understand its usage, capabilities, etc. They simply innocently wondered what it (the technology) was.

The treatment

Using the "Essay Writing Module" taught with the instructors using the IWB was the intervention given to the experimental group in 15 sessions, with each session two hours long, over the summer of 2008. The control group was taught the same module(in the same period with same teaching time) in the same teaching methods, using pen, paper and a traditional whiteboard in 15 sessions, with each session two hours long, too. To avoid students meeting one another and thus influencing the study results/ validity and reliability, both groups were taught on a different schedule on different days; also, both groups were taught during the summer vacation, which was necessary anyway, when the least chance of meeting was possible. As a further precaution, both groups were asked that they should not meet up and discuss any issues related to any aspect embedded in the study. The teaching took place in Ismailia.

The goals behind the interventions were to test the module effects caused by both methods (IWB vs. the traditional) on improving the medical school students' essay writing skills.

Teaching the "Essay Writing Module" via the IWB

To use the IWB together for the developed module incorporating micro-skills was developed with the help of the usual instructor (for detailed features of the module, see the following section below). To reduce the possibility of experimenter bias (Cohen, Manion and Morrison, 2007) an instructor and the researcher taught the module to both groups: the experimental and the control. Both instructors taught half of the module to both groups in order to reduce any impact of a single researcher (and similarly assessed half of every test later on to achieve the same end (i.e. to reduce rater bias).

The "Essay Writing Module"

When designing the proposed module, the following criteria were taken into account*:*

1. The inclusion and coverage of the micro- skills which were obtained from the micro-skills questionnaire results (Appendix B) and refined after final

exclusions (Appendices C, C1 & C2). For the list of the module aims, see the beginning of Appendix K.

2. A greater emphasis in the instructional material was given to the micro skills whose frequency in the literature and whose juror points on the micro-skills questionnaire was higher, as outlined in Appendix D.

3. The material was presented in a structured way, i.e. first, language-related skills were stressed first. After that, paragraph writing was addressed. Then, essay writing was handled. Later on, all three types interchanged so as to develop overall coherence in the teaching approach.

The module description

The module looks like the following:

1. The module consists of a ***Students' Handbook*** (See Appendix K)
2. The ***Students' Handbook*** includes units covering all micro-skills reached as resulting from both literature and the writing test, as explained earlier.
3. Most of the module is selected or adapted from different internet sources. However, a number of tasks were designed by the researcher. (See the ***Students' Handbook***).
4. Moving from simpler micro-skills to more complex ones is considered.
5. The total time for teaching the module is 28 hours distributed over 14 sessions (i. e. 2 hour sessions).
6. The assessment for the module was done using the writing test and the assessment points for each micro-skill were determined according to the relative weight of the skill represented in the module, see Appendix D.

To obtain feedback about students' attitudes towards each session (also, to support the results of this study), a Session Evaluation (S.E.), i.e. Appendix I, was conducted at the end of every session.

The Module Validity

A questionnaire, Appendix J, was developed asking for expert opinions as to whether the writing micro-skills selected for and represented in the module were fairly represented. It consists of three parts: one giving the desired micro-skill representation weights and percentages, another asking jurors to see the writing

module, and a third asking for the degree of micro-skill representation in the module, as seen by an expert (on a scale of 1-4). The whole questionnaire was given to two experts. The results led to a number of modifications, including more representation and better format. These modifications took place according to the experts' advice.

The distribution of the micro-skill weights over the module

As stated earlier**,** according to the literature reviewed and the results obtained from the micro-skill questionnaire the points each micro-skill received (i.e. see Appendix D) were considered to determine the possible weight of representation in the module.

Teacher training for using the IWB

In order to make teachers comfortable with incorporating any technique/s in their classrooms, they need considerable exposure to training. The other instructor (i.e. a colleague whose major was Curriculum and Instruction of English from the Ismailia Faculty of Education) together with the researcher had enough training on the IWB in workshops addressing the relatively new technology: the latter had workshops at the University of Durham and the former was trained in a six-time one-hour practical sessions conducted later by the latter.

Procedures of the study

The experimental design

A one group experimental-control design was adopted.

The experimental group (group B) took the writing test, the intervention (the module taught with the IWB) and finally the writing test and the Control group (group A) took the writing test, then the traditional method (the same module delivered via a whiteboard, pen and paper), and finally the writing test

Also, the experimental group took the writing attitude survey and the IWB attitude questionnaire on both before and after the teaching of the module while the control group only filled out the writing attitude survey.

Study protocol

The following procedures were followed to achieve the goals of this study.

Four procedures were followed to answer the first question:

1. Reviewing literature on both IWB and writing, with particular focus on writing micro-skills to identify them.
2. Developing a questionnaire (i.e. the Micro-Skill Questionnaire.) including the writing micro- skills identified
3. Submitting those micro-skills to eight jurors to identify which ones were important/very important to the Medical School Students
4. Obtaining the final list of those micro-skills and setting down "relative importance weights" to them according to their relative importance as revealed by frequency in literature and decided by jurors

The following six procedures were followed to answer the second question:

5. Searching for relevant material for a module which could develop the selected micro-skills
6. Representing the selected micro-skills in the shape of teaching material, according to the relative representation weight of each micro-skill, thus reaching a primary form of a module to be taught (and assessed, i.e. based on the relative importance weights) to the Medical students
7. Submitting the primary module to two experts to validate it
8. Responding to advice regarding modifications
9. Reaching the final shape of the "Essay Writing Module"

Twenty five procedures were followed to answer the remaining four questions and to enable hypothesis check:

10. Creating a primary pre-post writing test
11. Submitting it to experts for validity purposes
12. Acting up to experts' advice regarding any suggested or necessary modifications and reaching the final shape of the writing test
13. Writing a primary questionnaire investigating students' attitudes toward the IWB
14. Submitting it to jurors for validity purposes

15. Acting up to jurors' advice regarding any suggested or necessary modifications
16. Travelling to Egypt, to the School of Medicine at the Suez Canal University
17. Selecting a random sample of thirty students who would not later participate in the experiment.
18. Applying the pre-post test onto them for the test reliability purposes and conducting a split-half analysis
19. Undertaking any necessary modifications in order to make the test reliable
20. Applying the IWB attitude questionnaire to the assigned thirty students to calculate the IWB attitude questionnaire reliability
21. Calculating the reliability and reaching the final shape of the IWB attitude questionnaire
22. Identifying a random sample of sixty other students than those who had participated in the pre post test reliability procedures
23. Dividing the students in equal number into control and experimental groups
24. Setting a place where an IWB was available for teaching and setting another where an IWB (experimental setting) was not present and a pen and paper, and whiteboard (Control-setting) were present instead.
25. Conducting the writing test to both groups as a part of the pre-test stage and rating results with the help of another rater
26. Conducting the writing attitude survey adapted from Ranelli (1998) to the two groups - as a part of the pre-testing stage and rating results with the help of another rater
27. Conducting the IWB attitude questionnaire to the experimental group only - as a part of the pre-testing stage and rating results with the help of another rater
28. Teaching the "Essay Writing Module" to both groups together with an assistant teacher (i.e. the same rater)
29. Conducting the writing test- at post-test stage
30. Conducting the writing attitude survey - as a part of the post-testing stage and rating results with the help of another rater
31. Conducting the IWB attitude questionnaire -as a part of the post-testing stage and rating results with the help of another rater
32. Conducting statistical analyses
33. Analysing results

34. Writing summary and conclusions
35. Writing recommendations and suggestions for further research.

The pre- test

The writing test was administered in the summer of 2008. Before the experiment, it was taken into account that there should be statistical analysis for the pre-tests of both groups to ensure that almost no statistical differences between the mean scores of the two groups were there and, therefore, that any later effect would be contributed to the treatments only.

The students' scores were obtained (See Appendix L). Table (10) & (11) show the means, standard deviations, t- value and significance between the experimental and control groups on the pre-test.

Table (10)
Mean, Standard Deviation & t-Values of the Experimental and Control Groups on the Pre-Test

group	N	Mean	Std. Deviation	Std. Error Mean
A	30	38.17	14.515	2.650
B	30	39.30	16.497	3.012

Table (11)
Independent Samples t-test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Tot.	Equal variances assumed	.165	.686	-.282	58	.779	-1.133	4.012	-9.164	6.897
	Equal variances not assumed			-.282	57.075	.779	-1.133	4.012	-9.167	6.900

Tables (10 & 11) show the mean scores, standard deviations, t- values and their significance of both the control and experimental groups on the pre-test. The value of t is -.282 which is non-significant at the 0.05 statistical level. Also, as shown in Table (11), the difference in means is minor (-1.33). 95% Confidence Interval of the Difference further implies a high confidence level that the differences are so minor. This indicates that there were no significant differences between both the experimental and control groups on the pre-test and that the two groups were equivalent, which is appropriate for the experiment to be conducted. In other words, this means that type I error is eliminated regarding students' prior level in essay writing.

The post-test

Since an experimental-control group design was used in the study, a post-test had to be used. (Statistical analysis for the results after this test was conducted will be discussed later in Chapter IV.)

Challenges for implementing a one group experimental control design

There were a number of challenges which were encountered before implementing the design. The most challenging was gathering the sample of the study. Also, group communication before and/ after sessions had to be prevented and this purpose was fully attained: every possible effort was made in order not to allow students to meet. Strict measures were followed: different schedules for both groups were followed. Furthermore, it was not allowed for students in a group to share material with any other student from outside the group. By nature, even further, the summer helped not to make students meet anyway as it was holiday time. It is known that possible meetings between students could influence the accuracy of the results obtained from both groups. Regarding the size challenge, it was still relatively possible to do the experiment, having only had this size: the original population was merely 123 students. As explained earlier in this chapter, it was summer time and only sixty students agreed to participate. To increase the sample size anyway, I would have needed a further year to obtain the State Security Department's approval to do the experiment as everything, was subject to their approval imposed by political

circumstances. Also, the bigger the sample I might have asked for, the more difficult the approval would have been issued. However, the small sample size available at the time of the experiment offered a relaxed atmosphere away from any political pressure as a disadvantage of the experimental research method (Colorado State University, 2010)

Data analysis techniques

The Statistical Package for Social Sciences (SPSS) was used to calculate the t-values and significance for the two groups and to find whether there are any differences between them. The purpose of the examination was to examine the results at the pre-post testing stages for both groups. To calculate the effect size in the extent of the differences between the two groups on the post-test stage for both groups, an effect-size calculator on the same program was utilized[1].

Summary

This chapter has dealt with a) subjects of the study, b) design of the study, considerations related to sample size, and reasons for choosing a one group experimental control design, c) setting of the study, d) instruments of the study, e) the treatment adopted, f) module design and, g) procedures to attain the treatment, pre-test, post-test and h) challenges for implementing a one group experimental control design and methods.

The following Chapter IV will present and discuss the analysis of the data obtained after the experiment has taken place. It will also attempt to answer the questions of the study and test the hypotheses of the study, and compare the findings of the present study with the other studies in literature.

[1] http://www.cemcentre.org/evidence-based-education/effect-size-calculator

CHAPTER IV
RESULTS AND DISCUSSION

- **Introduction**
- **Results and discussion**
  - ***Questions of the study***
    - **Answer to the first question**
    - **Answer to the second question**
    - **Answer to the third question**
    - **Answer to the fourth question**
    - **Answer to the fifth question**
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  - ***The second hypothesis***
  - ***The third hypothesis***

CHAPTER IV
RESULTS AND DISCUSSION

Introduction

In this chapter, based on the statistical analysis of the data collected, the results of the study will be presented. This will be accompanied with a discussion of the data in terms of the answers to the questions raised in Chapter III. Also, the hypotheses of the study will be tested against the results. Furthermore, these results will be compared with other results from the literature so that the contribution of the present study can be made clear. A separate section will present an analysis of students' mistakes in essay writing and show examples of their writing in order to show the development and progress made. Finally, an analysis of the writing test assessment, as drawn from representative examples, and implications and contentions from the analysis will follow.

Results and discussion

Questions of the study

The following deals with the results and their discussion. *In **answer to the first question**,* "*What are the essay writing micro- skills necessary /important for Medical School students?",* findings from the preliminary procedures of the study provided an answer to the question and a list of 56 micro-skills was reached from a synthesis of the literature and from the opinions of jurors who had expertise in this area. *Appendix C* shows these important skills according to the jurors' views. This addresses question one. Even further, during the same procedures, a writing module with identified objectives was developed. The Essay Writing Module is presented in *Appendix K*. ***This answers the second research question:*** *"What does a module which addresses the essay writing micro-skills necessary for the medical school students look like?"*

The answer to the third question "*To what extent is the teaching with an IWB compared to teaching in the traditional method (in which the tools used are a whiteboard, a pen and paper) effective in improving the Suez Canal University Medical School students' essay writing?"* is concerned with the difference between the experimental group and control group students' scores on the post-test. Table (12) presents the mean scores and standard deviations of the experimental and control groups on the writing post-test. Both means, compared to the pre-test means shown

in Chapter III, are higher, indicating that the *module* was effective in improving the students' essay writing skills.

Table (12)
Mean Scores and Standard Deviations for both the Experimental and Control Groups on the Post-test

Group Statistics

group	N	Mean	Standard Deviation (SD)	Std. Error Mean
control	30	86.17	18.278	3.337
experimental	30	82.90	18.005	3.287

1=control 2=experimental

As shown in Table (12), both groups improved relative to their pre-test mean scores. The control group mean appears to be slightly higher than that of the experimental group. As shown in the table, both mean scores are 86.17 and 82.90, respectively, while on the pre-test application, as pointed out in Chapter III, they were 38.17 and 39.30, respectively. Basically, again, this difference in mean scores on the pre-post test for both groups can be attributed to the "Essay Writing Module" which was taught to the students, bearing in mind the students had had no exposure to any essay writing module ever before.

The results of both groups on the post-test showed that they both improved. However, the mean score of the control group was slightly higher. This slight difference between the groups, as indicated earlier, is non-significant and may be attributed either to the experimental group students' interest in the board (rather than the content presented) or to the instructors' relative inexperience in using the technology. The difference in the mean scores from the pre-test to the mean scores on the post test is, most likely, attributed to the "Essay Writing Module" which was taught to both groups during the experimentation and had not been taught earlier. To identify the extent of the difference, the effect size was calculated which indicates the magnitude of the differences between the post-test results of both groups which was calculated using a spreadsheet program[2] (See Chapter III). The study was small scale so unlikely to identify significant differences between the groups unless the

[2] http://www.cemcentre.org/evidence-based-education/effect-size-calculator

effect was large. However, this calculation is still valuable as it enables the data from this study to be included in any subsequent meta-analyses of the impact of IWBs on learning and writing in particular. Table (13) shows the results of this calculation.

Table (13)

The Experimental-control post-test mean scores, effect-size and effect Size Level

Group	Post-test mean scores	Effect-size difference	Confidence intervals		Effect-Size level
Control	86.17	-0.18	lower	upper	Very small negative effect
Experimental	82.90		-0.68	0.33	

The previous table shows that there is a difference between the results of the experimental and control groups on the post-test at a very small, but *non-significant*, level. The effect size (Hedges g) is negative and very small. Also, the confidence intervals tend towards a negative side. To identify whether this difference is significant, Table (14) shows the t-value and significance, the mean difference.

Table (14)

The experimental control t-value and significance for the writing micro-skill test at the post-test stage

			Levene's Test for Equality of Variances		t-test for Equality of Means						
			F	Sig.	**t**	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
										Lower	Upper
	Post1	Equal variances assumed	.000	.989	**.697**	58	**.488**	3.267	4.684	-6.110	12.643
	Post2	Equal variances not assumed			**.697**	57.987	**.488**	3.267	4.684	-6.110	12.643

Independent Samples Test (1=control & 2=experimental)

Table (14) shows that the t-value is the same for both groups (.697), and the significance is also the same (.488). This means that the differences are not significant at both the 0.05 and 0.001 statistical levels. ***This answers the third question***.

The answer to the fourth question *To what extent do the Suez Canal University Medical School students' attitudes towards essay writing change from before to after applying both methods the IWB and the traditional?*, can be derived from the following Table (15) through to Table (24) and from Chart (1), Chart (2) and Chart (3) (embedded between the tables) and the related analyses below.

Table (15) shows the control group's mean scores and standard deviations on the writing attitude survey on the pre-post-test stages:

Table (15)

The control group's mean scores and standard deviations, & the size effect for the writing attitude survey on the pre-post-test stages

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean	Effect size
Pair 1	Pre-test	31.3000	30	7.51160	1.37142	1.2
	Post-test	40.2667	30	7.69654	1.40519	

The table above shows the control group's mean scores and standard deviations, & the size effect for the writing attitude survey at the pre-post-test stages. It is seen that the mean at the post-test stage is higher, the standard deviation is not wide, and the effect size 1.2 (Hedges g) which is positive. This means there a change in attitudes which happened in favour of the post-test. To see t-value and t-significance for the writing attitude survey on the pre-post-test stages in order to identify the difference in mean scores and in order to se whether this difference is statistically significant, table (16) presents relevant data.

Table (16)

The control group students' t-value and significance for the writing attitude survey on the pre-post-test stages

Paired Samples Test

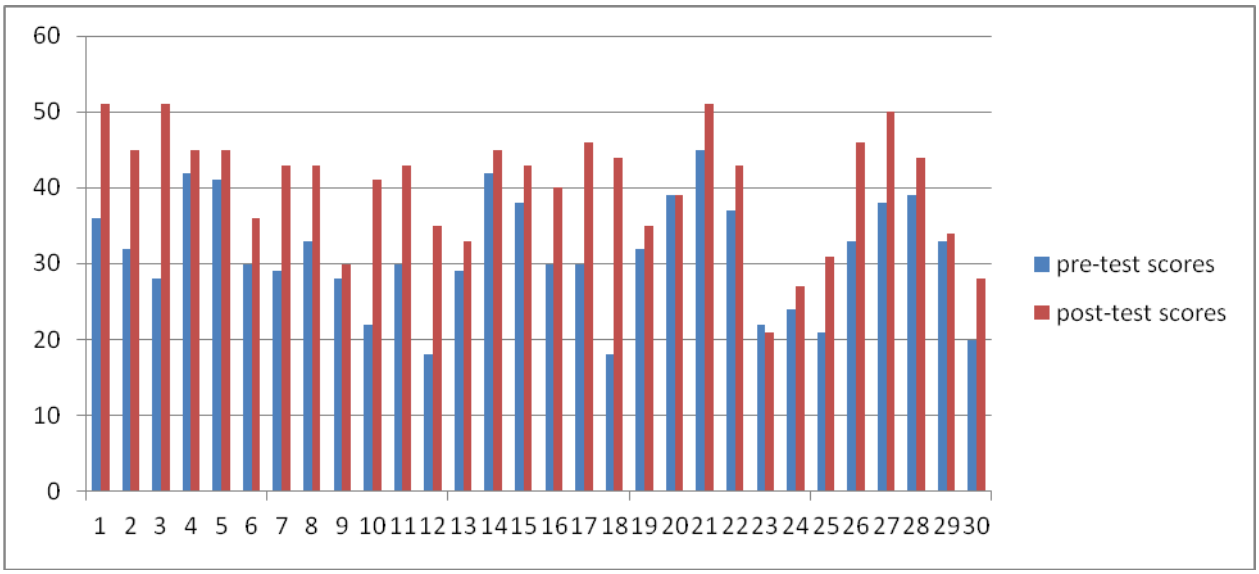
		Paired Differences					t	df	Sig. (2-tailed)
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	VAR00001 - VAR00002	-8.96667	6.86562	1.25349	-11.53033	-6.40300	-7.153	29	.000

Table (16) shows the control group students' t-value and significance for the writing attitude survey on the pre-post-test stages. The difference in mean scores is in favour of the post-test. The t-value is -7.153 which means that the difference in the mean scores is statistically significant at the 0.05 level. This implies that the module taught by the traditional method changes students' attitudes towards writing to a significant

standard. To see the volume and direction of this change in the scores of individual students (also, see Appendix L), the following chart (1) informs this.

Chart (1)

Change in control group students' attitudes towards writing



Of the above graph, it can be seen that eight students (out of thirty – the total number of the control group) are above 38 which is the average for seventy eight, the maximum total point a student can have (as mentioned in Chapter III section for designing the writing attitude survey). Of this, it can be understood that the pre-test for the control groups showed that they had low attitudes towards writing. However, when it comes to the post-test for the same group, it is found that there is a considerable change in attitudes. The numbers of students who have more than average are twenty one students. Although this is clear in the graph, a comparison between the students' frequencies, percentages, & cumulative percentages on both pre & post tests is essential. This comparison is drawn through the data shown in the following Table (17) & Table (18). This even helps to understand the change in attitudes better.

Comparison between control group pre & post test results on the writing attitude survey:

Table (17)

The control group's pre-test scores, frequencies, percentages, and cumulative percentages

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18	2	6.7	6.7	6.7
	20	1	3.3	3.3	10.0
	21	1	3.3	3.3	13.3
	22	2	6.7	6.7	20.0
	24	1	3.3	3.3	23.3
	28	2	6.7	6.7	30.0
	29	2	6.7	6.7	36.7
	30	4	13.3	13.3	50.0
	32	2	6.7	6.7	56.7
	33	3	10.0	10.0	66.7
	36	1	3.3	3.3	70.0
	37	1	3.3	3.3	73.3
	38	2	6.7	6.7	80.0
	39	2	6.7	6.7	86.7
	41	1	3.3	3.3	90.0
	42	2	6.7	6.7	96.7
	45	1	3.3[tot. 23.4]	3.3	100.0
	Total	30	100.0	100.0	

Comparison between control group pre & post test results on the writing attitude survey:

Table (18)
The control group's post-test scores, frequencies, percentages, and cumulative percentages

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	21	1	3.3	3.3	3.3
	27	1	3.3	3.3	6.7
	28	1	3.3	3.3	10.0
	30	1	3.3	3.3	13.3
	31	1	3.3	3.3	16.7
	33	1	3.3	3.3	20.0
	34	1	3.3	3.3	23.3
	35	2	6.7	6.7	30.0
	36	1	3.3	3.3	33.3
	39	1	3.3	3.3	36.7
	40	1	3.3	3.3	40.0
	41	1	3.3	3.3	43.3
	43	5	16.7	16.7	60.0
	44	2	6.7	6.7	66.7
	45	4	13.3	13.3	80.0
	46	2	6.7	6.7	86.7
	50	1	3.3	3.3	90.0
	51	3	10.0[tot. 66.5]	10.0	100.0
	Total	30	100.0	100.0	

As shown in the two tables above, again, twenty students have had more than thirty eight points on the post-test, as compared with eight on the pre-test. This is a percentage of 66.6 compared with a percentage of 23.4 on the same test. This shows that at post-test, most students had more than the average of the pre-test. Possibly, this change can be referred to the "Essay writing module" as most students mentioned that the module really addressed their needs and that "we needed the right structure of an essay very much" and added that "we should have obtained it a long

time age". These comments and similar ones were obtained from the S.E. where students had to give feedback on each session they had. Of all the previous, it is clear that the control group achieved better on the writing attitude survey on the post-test than on the pre-test. To examine the results of the experimental group on the same test and analyse them in order to allow the same comparison, and in order to establish the grounds for a better understanding of a control experimental group result comparison and analysis at the post-test stage, it is required that the pre-post-test results for the experimental group be considered first. Table (19) presents the mean scores and standard deviations of this group on the survey at the fore-mentioned stages.

Table (19)

The mean scores and standard deviations of the experimental group on the writing attitude survey at the pre post stages

Pre-test Mean and SD	Post-test Mean and SD
Mean: 30.56 SD. 8.17	Mean: 55.73 SD. 8.50

Table (19) shows that there is an increase in experimental group students' mean scores from before to after the intervention was applied. This indicates a *change* in students' attitudes towards writing for the control group students. This could be attributed to the "Essay Writing Module". To determine if there is a change in the experimental group students' attitudes towards writing, tables (21) & (23) have relevant data. Table (20) shows the experimental group students' t-value and t-significance for the writing attitude survey on the pre-post-test stages.

Table (20)

Differences of the experimental group students for the writing attitude survey

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	VAR00001 - VAR00002	2.51	10.38	1.89	21.28	29.04	**13.272**	29	**.000**

As shown in the table above, the t-value is 13.272 which is found to be *significant* at both statistical levels: *0.05 and 0.01*. To identify/ compare each student's change in attitudes towards writing, the following *Chart (2)* shows the change in each student's attitudes.

Chart (2)

Changes in individual experimental group students' attitudes towards writing

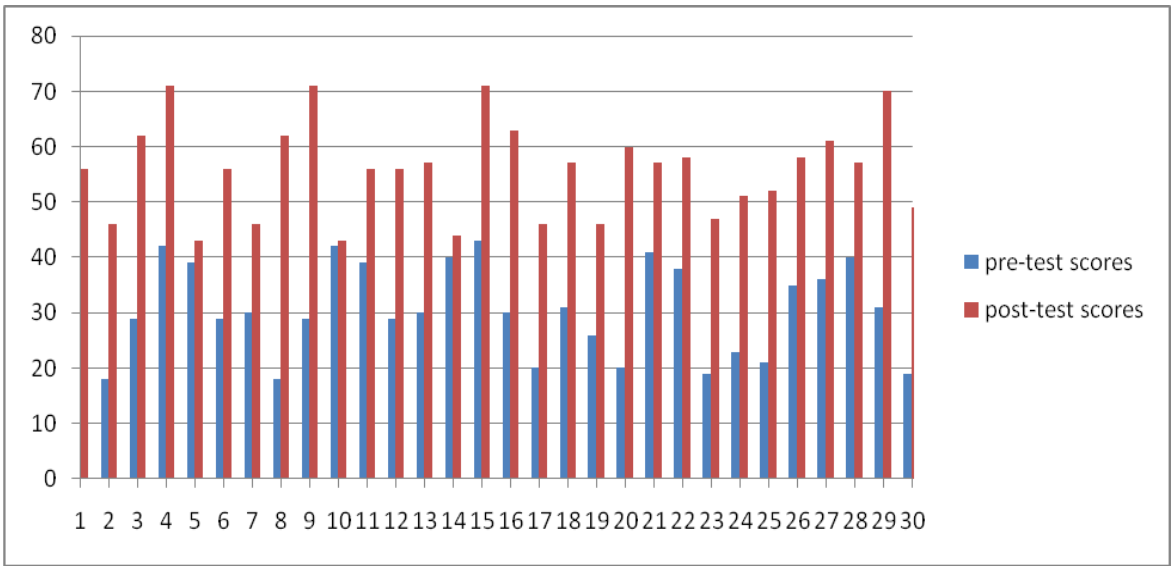


Chart (2) shows that the maximum point a student had on the first administration of the writing attitude survey is 43 while the maximum point on the post stage is 73, an increase of 20 points in favor of a positive change. In order to identify how many

students on the pre-test stage scored which points and percentages, Table (21), clarifies this issue.

Table (21)

The experimental group's pre-test scores, frequencies, percentages, and cumulative percentages on the writing attitude survey

	(Pre-test scores)	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18	2	3.3	6.7	6.7
	19	2	3.3	6.7	13.3
	20	2	3.3	6.7	20.0
	21	1	1.7	3.3	23.3
	23	1	1.7	3.3	26.7
	26	1	1.7	3.3	30.0
	29	4	6.7	13.3	43.3
	30	4	6.7	13.3	56.7
	31	2	3.3	6.7	63.3
	35	1	1.7	3.3	66.7
	36	1	1.7	3.3	70.0
	38	1	1.7	3.3	73.3
	39	2	3.3	6.7	80.0
	40	2	3.3	6.7	86.7
	41	1	1.7	3.3	90.0
	42	2	3.3	6.7	96.7
	43	1	1.7	3.3	100.0
	Total	30	50.0	100.0	
Missing	System	30	50.0		
Total		60	100.0		

As shown in Table (21), for the highest scores, a majority of the students scored between 29 and 43 (out of a seventy eight maximum total, as earlier revealed in Chapter III) with a percentage of % 56.7. Also, the table shows that the maximum frequencies (4 and 4) were obtained by the scores 29 and 30. Not only do these scores do so, but also they have a total percentage of 13.4. Other frequencies of scores came at lower percentages, e.g. the frequency 2 was obtained by %23 of the total group. In order to identify how many students on the post-test stage scored which points and percentages, Table (22), clarifies this issue.

Table (22)

The experimental group's post test scores, frequencies, percentages, and cumulative percentages on the writing attitude survey

VAR00002 (post test scores,					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	43	2	3.3	6.7	6.7
	44	1	1.7	3.3	10.0
	46	4	6.7	13.3	23.3
	47	1	1.7	3.3	26.7
	49	1	1.7	3.3	30.0
	51	1	1.7	3.3	33.3
	52	1	1.7	3.3	36.7
	56	4	6.7	13.3	50.0
	57	4	6.7	13.3	63.3
	58	2	3.3	6.7	70.0
	60	1	1.7	3.3	73.3
	61	1	1.7	3.3	76.7
	62	2	3.3	6.7	83.3
	63	1	1.7	3.3	86.7
	70	1	1.7	3.3	90.0
	71	3	5.0	10.0	100.0
	Total	30	50.0	100.0	
Missing	System	30	50.0		
Total		60	100.0		

As shown in Table (22), for the highest scores, a majority of the students scored between 52 and 71 with a percentage of % 66.7. Also, the table shows that the maximum frequencies (4, 4, & 4) were obtained by the scores 46, 56 & 57. In fact, not only do these three scores do so, but also they have a total percentage of 40.2. Other frequencies of scores came at lower percentages, e.g. the frequency 2 was obtained by % 19.8 of the group. Thus, of the previous, it is obvious that the experimental group statistically had better scores on the post-test than the ones it had on the pre-test. Question four has then been answered.

The answer to the fifth question *"To what extent is there a difference between the experimental group and the control group in the change in attitudes towards writing (if any) after applying the previously mentioned two methods?"* requires a

comparison between the experimental group post-test results with the control group post-test results, in order to compare the mean scores of both groups on the same test. Table (23) shows experimental-control-group post-test means, standard deviations, & effect size.

Table (23)

Experimental control group post-test means, standard deviations, & effect size on the writing attitude survey

Group Statistics

	N	Mean	Std. Deviation	Std. Error Mean	Effect size	Confidence intervals	
						lower	upper
control	30	40.2667	7.69654	1.40519	1.88 Positive	1.27	2.49
Exper.	30	55.7333	8.50125	1.55211			

Clearly, as shown in the table above, there is a difference in the mean scores at the post-test stage between the two groups. The standard deviations in both groups were 7.70 for the control group and 8.50 for the experimental, so the distribution of scores was similar. Both of the deviations reflect they did not move much far from the means. Also, the difference as an effect size was 1.88 (Hedges g) with a confidence interval of 1.27-2.49. Consequently, it can be said that the difference in mean scores is positive (in favour of the experimental group). To see whether this difference is statistically significant, Table (24) presents t-value and significance for the two groups on the post-test.

Table (24)

The experimental and control group students' change in attitudes towards writing

Independent Samples Test

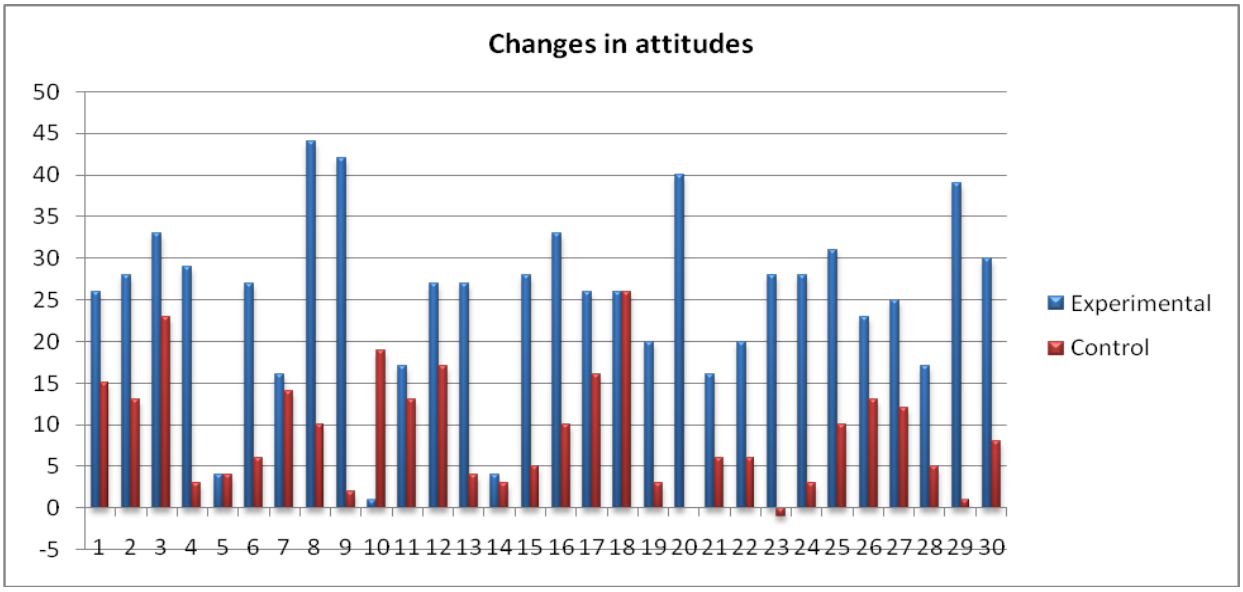
		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Difference	Equal variances assumed	.103	.750	-7.387	58	.000	-15.46	2.09	-19.65	-11.27
	Equal variances not assumed			-7.387	57.43	.000	-15.46	2.09	-19.65	-11.27

Table (24) shows that the difference is statistically significant. The t-value is -7.387 as the "mean difference" is -15.46. This is difference statistically significant at is .000, as implied in the last two cells. The difference is significant at the 0.05 level in favour of the experimental group at post test. This indicates that the change in attitudes towards writing was more positive in the experimental group than in the control group and that this difference is statistically significant.

To compare both group students' change in attitudes towards writing and see the difference in volume, the following *chart (3)* shows this.

Chart (3)

Differences in change in attitudes towards writing between the two groups on the post-test stage



As shown in the graph above, the relative difference is clear. For most of the students (54 students in both groups), there is a change. However, for two students (18) in both groups, there was not any. Their attitudes remained the same. This means the impact of the module with the traditional method was the same as that of module with the IWB for two students. For another four students (5 & 14), the impact of the module with the traditional method was higher than that of the module with the IWB. Again, this is quite normal as it cannot be expected that the impact of the module with the board would be consistently positive. Overall, the change is evident at a percentage of % 90 of the whole sample which is big.

Thus, it is concluded that the experimental group had a *greater* change in attitudes towards writing than the control group on the post-test. This answers the fifth question.

The answer to the sixth question, *To what extent do the Suez Canal University Medical School students', i.e. the experimental group's, attitudes towards the IWB change, from before to after applying both methods: the IWB and the traditional?,* is given below. The original intention was to use the IWB attitudes survey as a pre- and

post- test. However the sample of students felt unable to comment on the value of the IWB prior to experiencing its use (scoring zero for the questions). After the teaching of the module they completed the survey, so it was clear that their attitudes to the IWB changed.

A further question related to the nature of the students' positive change in attitudes arises. Which aspects of the features of the IWB did the students value most? In order to identify the number of students giving a specific answer to a particular item and in order to determine which item/s students liked the best on the IWB attitude survey on the post-test stage, a cell & item result analysis is provided in Table (25).

Table (25)

A cell & item result analysis for the IWB attitude survey at the pre-post stages

	Frequencies					**Total points per item**
Item	**Extremely** (4 points)	**Mostly** (3points)	**To some extent** (2 points)	**Barely** (1 point)	**N/A or Never** (0 points)	
1. The SMART Board was useful in the teaching/learning of essay writing	**7**	**13**	**7**	**3**		**84**
2. The SMART Board was easy to see and interact with	**13**	**8**	**5**	**4**		**87**
3. The SMART Board was an unconventional way of presenting information	**19**	**8**	**1**	**2**		**104**
4. The SMART Board as a tool for teaching/learning helped with improving my essay writing	**9**	**12**	**7**	**2**		**88**
5. The SMART Board had unusual capabilities	**19**	**6**	**4**	**1**		**103**
6. The navigation and the switch over between screens on the SMART Board was easy	**14**	**10**	1	**5**		**93**
	Comment		**Frequency**			

7. What I want to add is	1. The screen needed to be better seen 2. All teachers who use the board in the future should be skilled at using it	3 1	

The table above shows results for each item in the IWB attitude survey. It provides the frequencies each cell choice received per item. It also provides the total each item received from all the students. As indicated in Chapter III, each item was repeated in different wording. Therefore, the analysis will depend on explanations of resulting frequencies in light of the related item frequencies. Clearly, items three and five prove to have the highest student ratings.

The total point per item results show that items three and five are 103 & 104 respectively. The students thought that the board was an unconventional way, or had unusual capabilities. This implies they were fascinated with its novelty. However, a small number of students reported on some related difficulties (which perhaps supports understanding why the experimental group students achieved slightly lower on the writing post-test – as discussed earlier).

Item 7 received different feedback as it requested different information. The comments provided by the students were given by a small minority of them: only four students, three of whom stated that they needed the board to be better seen. Actually, sometimes, a number of students told the teachers that the board dazzled their eyes, so they were asked to change the place they were sitting. However, this is not an unusual issue with the board as discussed earlier in Chapter II (also National Union Of Teachers, 2006). One student asked that teachers be skilled if the IWB was used in future teaching at the School of Medicine. This indicates that students may have queries over how equipment in the classrooms is used as there is a prevailing opinion that Egyptian lecturers do not tend to make use of equipment.

After the questions of the study have been answered, just as they have, the hypotheses related to the last three of them need to be checked up. In the next section, these hypotheses will be verified and their results discussed in light of other studies.

Hypotheses of the study

As for the hypotheses of the study, they are answered by the t-test results. In the following, the two hypotheses of this study are tackled one by another.

The first hypothesis which states that

> *teaching ESL essay writing with an IWB is more effective than teaching it in the traditional method, as shown by statistically significant differences (at both the 0.05 and 0.001 statistical significance levels) in the mean scores of both the experimental and control groups on the writing post-test in favour of the experimental group post-test at a moderate practical significance level.*

is checked up in both tables (13) and (14) shown earlier in answer to the first question. Table (13) proved that the practical significance was very low, not moderate. Table (14) showed whether there were significant differences between the two groups on the post-test or not.

Table (14) showed the mean scores, the t-value and the significance level for both groups. Results from the table indicated that the IWB, as a means via which material was taught, had no statistically significant differences (at both the 0.05 & 0.001 levels) in the two groups on the post-test, as revealed in answer to the third question. Also, it had no positive effect on students' writing micro-skills compared with the traditional method. Compared to the pre-test averages, students' mean score in both groups on the post-test proved to be higher. This, in turn, implies that the students in both groups developed their writing micro-skills after the module was taught by both methods the traditional and IWB.

Although at the same time the experimental group has a slightly lower mean score on the post-test, as evident in Table (13), which indicates more improvement in the control group, as also shown in the Table (14), this is not a statistically significant difference between the two mean scores as the 2-tailed significance is 0.488 for both groups. Of this, the first hypothesis cannot be substantiated in showing that "the IWB is effective in improving students' essay writing."

Again, with reference to the results in Table (13) related to the third question (which is linked to this hypothesis) it is stated that the effect-size was -0.18 (Hedges g) which is very small and negative. Thus, there is no moderate practical significance and, therefore, the present hypothesis is totally rejected.

Obviously, although the previous results were not expected, they can be related to other similar studies. For instance, they are consistent with Bell's (2000). She, who adopted the same experimental design as in the present study (she had two groups, one taught with an interactive whiteboard, video, and projector and a control group taught in the traditional manner.), found out that the students' achievement in writing was not statistically different in both groups. These results are also similar to those Martin (2007: 26) found out. Both prove that results of research incorporating the use of the IWB are not always consistent in teaching writing. Although the tool and the 'interactive talking books' (which were not utilized in the present study), were used for improving whole class writing of a number of primary six children in Scotland as in Martin's (2007), it was found out that not all the primary children benefited from this approach to the highest degree. It can be said that quite the same happened with regard to the present study where most students availed themselves of the presence of the tool.

Research investigating the impact of the IWB on L1 English (which includes but not limited to writing) was further compared with the present study results. The results from the biggest scale studies conducted to evaluate the teaching/ learning success based on comprehensive installation of IWBs in England in the study called "*Embedding ICT in the Literacy & Numeracy Strategies"* (Smith, 2004) were compared. As mentioned in Chapter I, the data for this study were collected from

secondary school teachers and their students whose ages were eleven years old in three subject areas: English Mathematics and science in sixty seven schools in six Local Educational authorities (LEAs). The areas of investigation were students' achievement, structured lesson observations, and the perceptions of both teachers and students. The results explicitly found that the technology use led to changes in teachers' practices - which is a concern of the present study. Also they clarify that the perceptions of students were much positive. This is the same as found in the present study. However, the effect-size in attainment in English, which is the main concern in this section, was *0.04*. This means that it was very small and positive, as compared to -18 revealed in the present study. In the later evaluation (2004) within the same study, as mentioned in Chapter I, the effect size for English was *0.02*, which is "very small and short-lived", as reported later by Higgins (2010: 8). Again, this is closely similar to the related effect size for the writing micro-skill pre-post test for the experimental group in the present study.

In a pilot stage of the previous project, results reach almost the same ends as in the present study. Higgins et al. (2005) in their project to assess the impact of the IWB on English, mathematics, and science found that positive gains in the three subjects were not found in six LEA schools compared with non IWB schools in the same LEA's. The program lasted for three years (2002-2004). The effect size for three subjects was very small and negative, similar to the one obtained in the present study. For example, in English it was -0.03 (for 67 schools vs. 55 non-IWB schools). In mathematics, it was -0.12 (for the same comparison of number of schools involved). In science, it was -0.17 (again for the same comparison of number of schools involved).

However, it is clear that the previous project was conducted to primary school LI students. Also, it involved the teaching of the other language skills (i.e. reading, speaking, and listening) together with writing. This is how the present study is different from the previous study.

Once again, in mathematics, the present study results are similar to Robinson's (2004). The results in Robinson's (2004) declared that the IWB did not appear to be a significant factor in achievement in mathematics. Both experimental and control groups did not show gains in students' post test scores.

Glover, Miller, and Averis (2003: 1) explain why the IWB does not have an impact on students' attainment. As discussed earlier in Chapter II, the researcher's study investigated the impact of IWBs on classroom teaching at the secondary stage. Their results found out that 'interactivity has been seen as an aid to traditional teaching rather than the driving force for understanding' (ibid.: 2) and that

> … lesson effectiveness hinges on the technological capability of the teacher in responding to divergent needs, and that the process of exposition, demonstration, exemplification and conceptualization is best managed through the use of the interactive whiteboard as a means of revisiting earlier material (ibid.: 1).

It is important it be stated that all the previous results and claims are in a way or another supported by the present study results.

The present study results also agree with those in Robinson's study (2007) discussed earlier in Chapter II. The impact of the use (or lack of use) of the IWB in two Middle School seventh grade classes teaching a unit on "transformations" was test, as pointed out in the same chapter. The Results revealed that there were no differences in pre and post scores as far as achievement was concerned. This is no difference from the results discussed in this section from the present results.

Even when chemistry is concerned, the results reach quite no different ends. Dhindsa and Emran's study (2006a), discussed earlier in Chapter II, revealed that statistically significant gains for students who were taught using interactive whiteboards, with the experimental group average mean effect size of 2.68 and the control group average mean effect size of 2.16. Although positive, it is still small. Thus, it is clear that the differences are not so great.

Even further in health, the findings are not exceptional. Langlois' study (2006) assessing the effectiveness of the computer concept mapping technique on a SMART Board compared to the traditional PowerPoint technique, reported that the post-test study results, as handled earlier in Chapter II, revealed that no statistically significant

differences were found between the two groups whose total was forty six final year nursing students and divided into two equal groups: one experimental group and another control.

Of the previous, with different contexts and implications, it can be seen that results handled in this study are not different from some of the other study results discussed in Chapter II and reach similar conclusions.

Discussion

With respect to the fact that there are no significant differences between the traditional method and the use of an IWB, this could be as a result of the students' first-experience and interest in the IWB. Students were so fascinated with the board that their achievement may have been negatively affected. This is supported by the results obtained from the "Session Evaluation" which students had to fill in after each session. This session evaluation revealed that the students were so intrigued by the navigation, the virtual keyboard, the writing finger, the eraser, and the highlighting and capturing tools. It also shows that the students were satisfied and pleased with the capabilities of the IWB. All these claims have support from the results of the IWB attitudes survey which will be discussed later in this chapter. This might imply that the students concentrated more on the board than on learning.

The second hypothesis

> *teaching ESL essay writing with an IWB changes the experimental group students' attitudes towards writing more positively than teaching essay writing in the traditional method (as shown by statistically significant differences at both the 0.05 and the 0.001 statistical significance levels between the mean scores of both the control and experimental groups on the post-test) in favour of the experimental group post-test at a moderate practical significance level* will be addressed below.

In order to assess the information as to whether to accept or to reject this hypothesis, Table (26) shows the experimental group differences in attitudes towards writing as resulting from the writing attitude survey at the pre-post test stage.

Table (26)
The mean scores, SD's, t-value, effect-size and significance level of the experimental group on the writing attitude survey at the pre-post test stage (paired samples statistics)

Pre	Post	t-value	Significance level	Effect-size
Mean: 30.56 SD. 8.17	Mean: 55.73 SD. 8.50	13.27	Significant at both 0.05 & 0.001 levels	2.98 (Hedges g)

As shown in the table above, there are statistically significant differences between the pre and post survey results. This is because the t-value is 13.15. As shown in the table, this value is significant at both the 0.05 & 0.001 statistical significance levels in favor of the post application where the mean is 55.56. This indicates a considerable positive change in attitudes towards writing in favour of the post-test. Also, as shown in the table, the effect size is 2.98 (hedges g) which indicates a high practical significance level in the experimental group's attitudes. Thus, this part of the hypothesis is confirmed. The testing of the second part will be conducted below.

Again, as shown in the table (26), the effect size for the experimental group pre post test is 3.02 which indicates a high practical significance level in the group's attitudes compared with 1.2 (Table 15) as the control group's effect size on the survey at the pre-post-test stages. Clearly, the effect size in the experimental group is higher than

that of the control group. When the effect size is calculated between two groups on the post-test to find the difference in change in attitudes between the two groups, it is found that it is 1.9. This is positive. With reference to Table (24) in this chapter, the mean difference is -15.46667, the t-value is -7.387and this value is significant at the 0.05 statistical significance level. This confirms the second part of the second hypothesis.

The second hypothesis is then confirmed. To discuss any similarities or difference between this finding and other research findings, the following discussion will address this issue.

Discussion

Actually, the students did not know what an IWB had been before the experiment because they had never seen it in their lives. After the experiment, they commented that 'it was amazing,' and expressed their wish that they would be taught via one in the future.

These results are congruent with Bell's (2000). She found out that students' attitudes towards writing were improved, too. These study results, however - as explained in Chapter II - apply to the high school students, the study sample, not to university students as was the sample in the present study. Also, the sample of Bell's was L1 students – different from the present study sample which is L2/ ESL students.

The present study results further conform to what Bell (2002) found in the teaching of academic writing of English in had positive results regarding the use of the IWB when determining its impact on attitudes for students in an eighth-grade writing class. The attitudes of the students in the group into question was positively changed towards both computer use and writing instruction (Bell, 2002). Also, Torff & Tirotta (2010) report that IWB's can make gains for the elementary school students' motivation in mathematics when they report it. Although they clarify that these gains are small, they are still gains: positive ones. Miller & Glover (2010) also state that "Initial gains in the classroom are related to the presentational and motivational qualities inherent in the technology", pp. 3-4.

The present study results shown above are similar to Alfieri's (2006). As discussed earlier in Chapter II, Alfieri's found out that IWB's were positive in attracting students to learn and engage them in. In fact, the present results cope with many other claims mentioned in other studies. For instance, it was claimed that the IWB as a tool offers options for students' different leaning capabilities. This view was supported in such studies as Bell's (2002), SMART Technology's (2004: 6); Cuthell's, (2005a); Cuthell's, (2005b); & Smith, Hardman, and Higgins' (2005: 7).

Thus, it is clear that the present study broadly consistent with these earlier studies.

The third hypothesis

Teaching ESL essay writing with an IWB changes the experimental group's attitudes towards the IWB (as proved by statistically significant differences in the students' mean scores at the 0.05 statistical significance level) at a high practical significance level at the pre-post-test stages in favour of the post-test stage is addressed below.

The following table has information targeting whether to accept this hypothesis or not.

Table (27)

T-value and significance for the IWB attitude questionnaire on the pre-post test stages

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			

Pair 1	VAR00001 - VAR00002	1.92000E1	2.46912	.45080	18.27802	20.12198	42.591	29	.000

As shown in the table, there are statistically significant differences between the pre and post test results on the questionnaire. The t-value is 42.591, which means it is significant at both statistical significance levels 0.05 & 0.001. This indicates that the value is in favor of the post application where the mean score is 19.20 compared with a zero or no value at all on the pre-test-questionnaire.

It is noteworthy that because the students' pre-test scores were all zeros, the effect-size cannot be calculated by computer programs. However, it is well known that whenever means change from zero to a high extent towards a positive direction, a big effect size can be deduced. Therefore, the practical significance for the present hypothesis can be stated to be high. This confirms the hypothesis.

Discussion

All the above results, alongside others pertaining to the related question and related analyses, consolidate the claim that the IWB can change students' attitudes towards essay writing. Overall, as discussed above, the previous results represent a big change in students' attitudes. The results are actually supported with other study results.

The present study results are congruous with all the previous study results across domains. They agree with Beeland's (2002) in that positive attitudes were obtained. They also agree with Robinson's (2007) which showed that students' level of motivation increased and their interests were raised when the technology was used in mathematics classes. However, the present results are different from Gerald et al's (1999); Gerald et al's (1999) who found out that the technology not only positively influenced motivation but also supported the skills of speaking, the processes of knowledge, and the emulation of the students. It is noteworthy that the present results did not check other processes other than those involved in writing. Also, these results are in line with Higgins' (2005) which state that students at primary schools expressed many uses for an IWB: 'is interactive, and creates an enjoyable atmosphere in the classroom', p.102. However, they comment that there are related shortcomings such as not using the technology themselves and having technical difficulty dealing with the technology (Higgins, 2005: 102). Likewise, the students in the present study complained that sometimes the orientation of the board was not accurate and that the board dazzled their eyes.

Further, the results of the present study agree with Smith et al's (2000); there is evidence that the IWB can make students' motivation levels higher, as78% of the students reported they had improved motivations, being instructed by the tool. It is also reported that students were excited and enthusiastic about learning with the board. Likewise, the averages of related results in the present study show the same conclusions (zero on the pre-test and 19.20 on the post-test, as stated earlier). However, there is evidence that students may lose interest when they become accustomed to the board (Smith et al, 2000).

The results also confirm Moss et al's (2007) which clarifies that the novelty caused by the introduction of the IWB into classroom was welcomed by the students. However, the present study result is different from another perspective: it did not detect students' level of motivation throughout an extended period of time, unlike Moss et al's which made clear that students' increased level of motivation decreased over time after this introduction.

The present study results further conform to what Bell (2002) found in the teaching of academic writing of English in had positive results regarding the use of the IWB when determining its impact on attitudes for students in an eighth-grade writing class. The attitudes of the students in the group into question was positively changed towards both computer use and writing instruction (Bell, 2002).

Likewise, the present study results are similar to Hennessy et al's (2001) where they found that the tool helped in preparing classroom conditions favorable to guided participation in mentally challenging activity. It can be stated that this was provided.

Further studies have similar results and claims. For example, it is verified that there was perceived benefit regarding raising students' attitudes towards the IWB. Robinson (2004: 44). Also, BECTA (2003), claims that students become encouraged when the board is utilized in their class because 'students enjoy interacting physically with board, manipulating texts', which allows discussions and interactions (p. 3).

Therefore, it can be concluded that students have positive attitudes towards the IWB as a tool. Also, it can be made clear that the present study results are, again, similar to those found in other studies in this respect.

To sum up, this section addressed the statistical analysis of results, attempted to answer the questions of the study, tested the hypotheses set, and compared the finding with other research. It found that there was no positive impact for the IWB on essay writing, the impact of the tool on students' attitudes towards writing was evident, and an even high impact on students' attitudes towards the tool itself was clear. In order to better understand any progress made by the students within the correct mind frame and the administration of the writing assessment process, the following section will present

examples of students writing and related pre post test assessments for the writing micro-skills, and analyses and discussions to both students' writing and the assessments will follow.

Analysis of students' writing and writing assessment

This section is mainly concerned with providing a further in-depth analysis of students' writing and writing assessment. It offers an analysis of the mistakes which were made by the students at both the pre-test and post-test stages. This is done by comparing the number, level, and type of mistakes changed on the post-test. Then, the section also offers complete essay examples of students' writing. The purpose behind the pre post-test mistake comparison is to show improvement and that behind the whole essay example presentation is to analyse more complicated mistakes related to the structure of an essay and prove that this improvement was in the micro-skills taught.

The section also offers examples of student 'micro-skill' assessments of their pre post writing. It is worth explaining that students were assessed against each writing micro-skill as proportionately embedded in the Essay Writing Module in small points and then the total of these points makes their total score on the test, as clarified in Chapter III. The purpose of all this is to show that the improvement in both groups on the post-test was similar.

Analysis of students' language mistakes

A comparison between twenty two representative mistakes which students made on the pre test and six representative ones they made on the post test of writing will be made. This is important for understanding the type and frequency of these mistakes on both occasions. Furthermore, it will enable more detailed interpretation of the progress the students made in the targeted writing micro-skills. First, an analysis of the pre-test mistakes will be conducted; then, the same analysis will be conducted for the post-test mistakes. It is presumed that because there were almost no differences between the experimental and control groups on the post-test results (as discussed in answer to the third question in this chapter), then it is unlikely to obtain different types of mistakes on the post-test. Consequently, the mistake analysis conducted below (i.e. in Table 28) will be limited to a pre post test mistake comparison for a few of the participants rather than a group type mistake comparison to see if there were differences in the types of improvement

made by the experimental and control group students and to validate the writing skills identified in the preliminary stages of the research.

For an in-depth understanding of the common language mistakes the medical students made during writing their pre-test essays (and, hence, of the later progress they achieved in writing), the following presents examples of a number and range of those mistakes, description of them, reason/s why they have occurred, and the corrected forms for the mistakes.

Table (28)

Example	**Description of the problem**	**Possible reason/s**	**Correction**
It is always great to think about the future**;** and…	Misuse of the semi-colon (punctuation).	Not having studied the rules for using semi-colon at their secondary stage or at their medical school.	It is always great to think about the future**,** and…
It is a well known fact about human being**s** nature.	Missing the apostrophe at the end of "beings" out (punctuation).	Lack of knowledge about punctuation rules	It a well known fact about human beings**'** nature.
Sometimes, people are driven by their emotions**,** they get angry and oppose hatred with hatred.	Not using a colon (punctuation).	Not having studied the colon at a previous stage in their studies.	Sometimes, people are driven by their emotions**:** they get angry and oppose hatred with hatred.
Some situations, anger has proven to be the perfect solution.	Omitted preposition (sentence structure).	- Confusion of which preposition to be used - Not knowing the correct preposition	**In** some situations, anger has proven to be the perfect solution.
Who is taking control of my future,...	This is a noun clause problem: it needs the correct word to be used: whoever. It also needs a verb and a completion (sentence structure).	Lack of knowledge for this rule	For example, "Who**ever** is taking control of my life is myself."
Throughout my life, I believe that everyday should be a new	Two problems appear here: 1) Incorrect preposition - by- and	2) Confusion of which preposition to be used and Not knowing the	Throughout my life, I believe that everyday should be a new

day **by** the achievements we **had**.	2) right tense in "had" (grammar).	correct preposition 3) Lack of knowledge about parallel-tense structure.	day **for** the achievements we **have** had.
I have some dreams and I hope to achieve **my** goals which **is** represented through these dreams.	Two problems appear here: 1) The exaggeration of meaning implied in using "my" is semantically rejected (vocabulary. 2) The verb in the relative clause is incorrect (grammar).	1) Improper word choice 2) Lack of attention	I have some dreams and I hope to achieve **the** goals which **are** represented through these dreams.
I can help **too** many people, especially people who are poor **having** no money for saving their lives.	1) Misuse of "too" 2) (vocabulary) 3) Misuse of the gerund "having" (grammar)	1) Not knowing the passive meaning implied in using "too". 2) Lack of knowledge about gerund usage	I can help **(so)** many people, especially people who are poor **and who have** no money for saving their lives.
I do not think college study is sufficient to become a successful doctor**,** therefore after finishing my study, I want to travel abroad.	semi-colon and a comma (punctuation)	1) Not having studied when to use a semi-colon. 2) Not practising the "comma" well.	I do not think college study is sufficient (**for me**) to become a successful doctor**;** therefore**,** after finishing my study, I want to travel abroad.
Some of them get angry easily and some of them **not**.	Not using a helping verb (grammar).	Lack of knowledge	Some of them get angry easily and some of them **do** not.
We should control it and not **let** it control **of** us.	1) Not using the right register: the informal verb **let** 2) Using a preposition with a transitive verb (grammar.	Lack of knowledge	We should control it and not **make** it **control us**.
Everybody must have a plan in **his** life	The reference pronoun is incorrect (word =-choice)	Lack of knowledge	Everybody must have a plan in **their** life.
Very qu**it**ly	spelling	Confusion between the spelling of the following three words:	Very qui**e**tly

		quit, quietly, and quite	
The world will be **change**.	verb form (grammar)	Lack of knowledge	The world will be chang**ed**
We see and listen to news **in** tv	preposition – in (vocabulary)	Mother tongue interference	We see and listen to news **on** TV.
…..for example, access through the internet, reading, contacting great doctors	an unparallel structure (grammar)	Lack of knowledge	…..for example, **browsing** the internet, **reading**, **contacting** great doctors
…that they'**ll** achieve and**'ll** get better moments in their lives.	register- contracted instead of full forms And "get" instead of "have".	Lack of knowledge	…that they **will** achieve and **have** better moments in their lives.
I **hope also** the year 2020…..	word order	Lack of knowledge	I **also hope**…..
And this is great.	style	Lack of knowledge	This is great.
Also respiratory diseases may be activated when anger **become** over.	1) Punctuation – missing coma 2) Word choice - become		Also**,** respiratory diseases may be activated when anger **is** over.
So we must take with the Islamic advice "No anger".	style	Lack of knowledge of…	
To teach them **right from wrong**…	a meaning (vocabulary)	Mother tongue interference	To teach them **what is right and what is wrong**…

The following will offer a mistake analysis of students' mistakes on the post-test. It will be conducted through presenting examples of students' mistakes, description of the problems involved, possible reasons why they occurred, and corrections for these mistakes. The following Table (29) shows this analysis in detail.

Table (29)

Example	**Description of the problem**	**Possible reason/s**	**Mistake correction**
"I hope **to** be a good doctor"	Using infinitive "to" instead of a verb "that" which is followed by a sentence. 9 (grammar)	Mother tongue interference.	I hope that I will be a good doctor
"…**do** my effort"	verb for an idiomatic expression (meaning/ vocabulary/ word choice)	Mother tongue interference. The Arabic word for "do" is used for this expression in Arabic, the students' mother tongue.	"…make/ exert efforts"
"…by offering **medical free** diagnosis"	Adjective order/ word order	Mother tongue interference. There is no adjective order in Arabic except for the reasons of importance. Thus, what is more important comes first.	"…by offering free medical diagnosis"
I**'d** like	Register. This is informal spoken English	incidental use of the wrong register	"I would like"
"…especially **P**eople who…"	Letter case – letter motion	This point was not much a point of focus during teaching the module.	"…especially people who…"
"What determines the need **of** anger is…."	Preposition (meaning)	Lack of much practice.	"…the need for…"

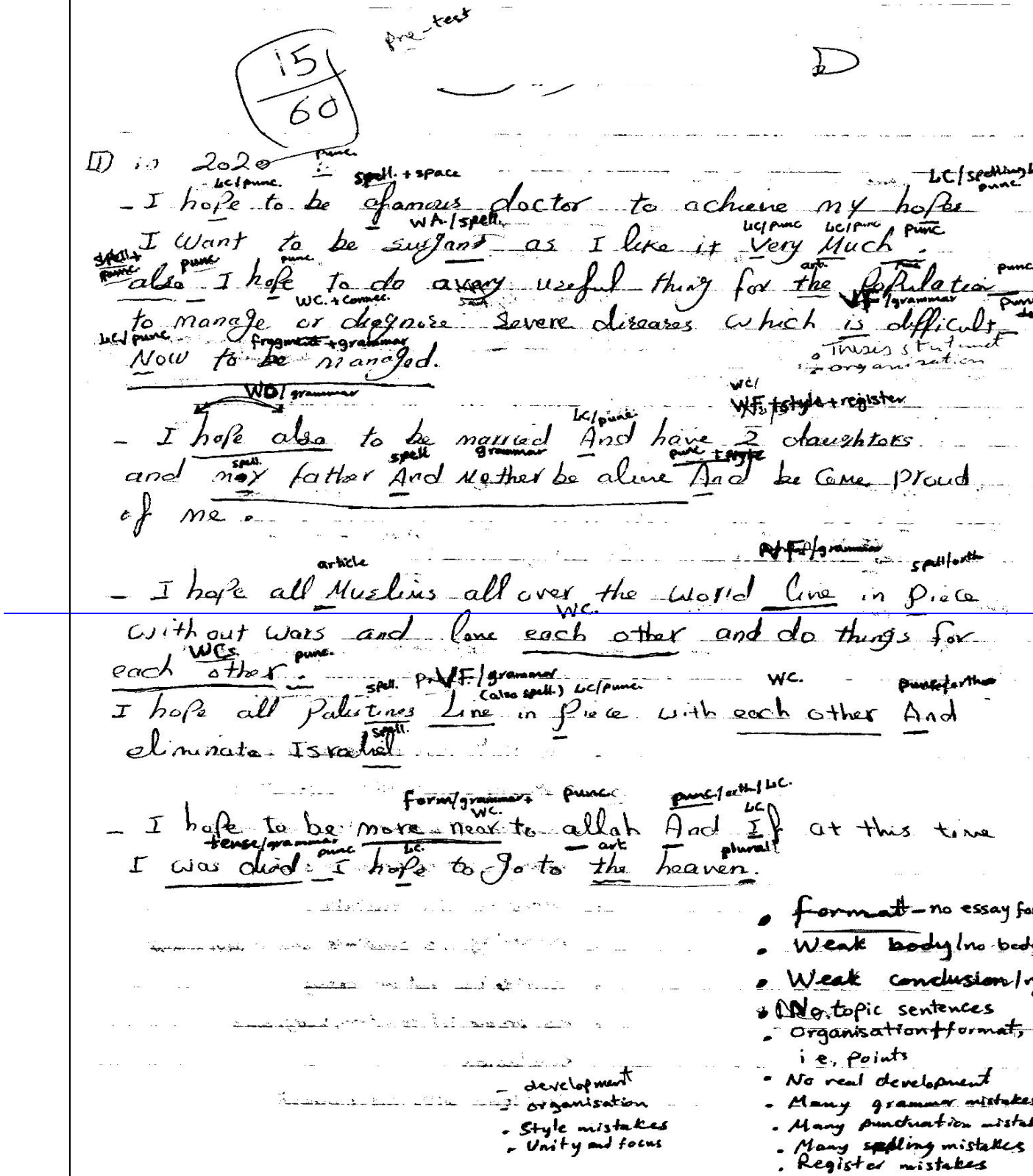
As seen in the table above, it is seen that the type of mistakes on the post test is quite different, their level generally less serious, and the related occurrence less frequent. Also, less punctuation, grammar, and spelling mistakes have appeared.

The previous record has been a reflection based on examples of language mistakes. The following will also show a reflection of the full range of example mistakes, including more important ones, e.g. those in writing structure, format, organisation, unity & focus, etc. Also, it will reflect and make clear how students' progress was made through demonstrating the improvement in writing micro-skills from pre to post test essays.

Comparison of students' pre-post-test essays and their assessed overall progress in writing

The students in both groups, as discussed earlier, have achieved a considerable amount of progress in essay writing as evident by their assessed micro-skills. This became clear after they did the pre post test; the comparison between students' progress at both stages was in favour of the post-test, again as mentioned earlier in answer to the third question. Students' writing on the pre-test varied according to the student's original assumption about essay writing. The following will explain this.

A considerable number of students did not know what was meant by the word "essay" before they did the pre-test. Consequently, they made mistakes with essay format, i.e. they wrote indented points, others only wrote a paragraph, and even others wrote some paragraphs which did not follow conventional essay structure in terms of introduction, body, development of the body, and conclusion, cohesion and unity relationship. The following examples from students' writing at the pre-test stage show this point. (The students' numbers as in order of their writing are student no. 4 (Experimental Group), student no 4 (Control group), and student no. 13 (Experimental Group).


15/60
pre-test
D
I) in 2020
- I hope to be a famous doctor to achieve my hope
I want to be surjan as I like it very much.
also I hope to do a very useful thing for the populatea
to manage or diagnose severe diseases which is difficult
Now to be managed.
- I hope also to be married And have 2 daughtoes
and my father And Mother be alive And be Come Proud
of me.
- I hope all Muslims all over the World Live in Piece
without wars and love each other and do things for
each other.
I hope all Palestines Live in Piece with each other And
eliminate Israhel
- I hope to be more near to allah And If at this time
I was died I hope to go to the heaven.
• format – no essay fo
• Weak body/no bod
• Weak conclusion/
• No topic sentences
• Organisation/format,
i.e. points
• No real development
• Many grammar mistake
• Many punctuation mista
• Many spelling mistakes
• Register mistakes
- development
organisation
• Style mistakes
• Unity and focus

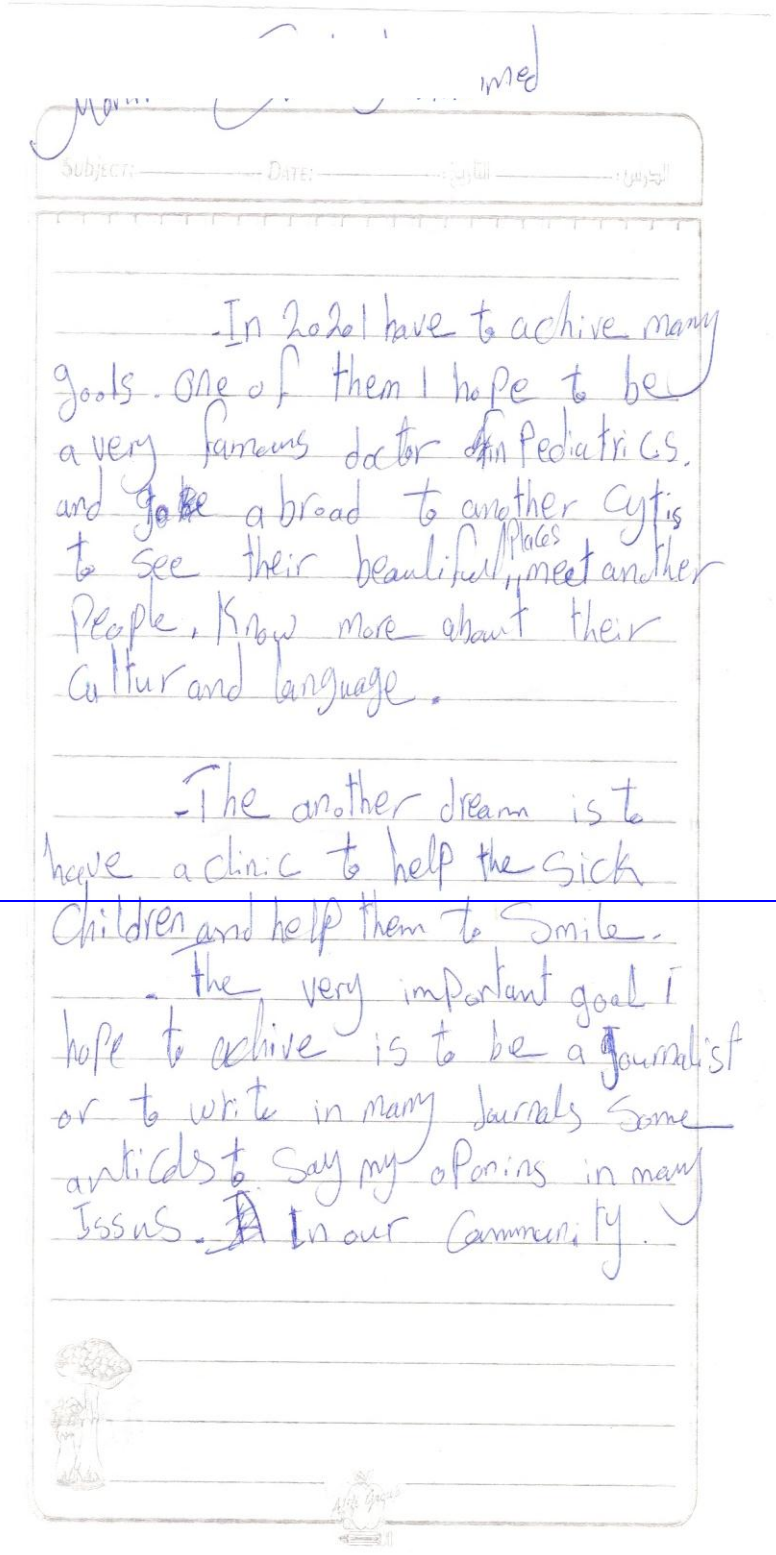
DATE

what do you hope To achieve by 2020? Explain, analysis and cpiticise.

By 2020, I hope to achieve more success in my life. I hope To be ~~a great~~ successful doctor all over The world. I wish people use Technology in every Thing in Their life. I hope peace become in The world. I hope That our country develop in all fields. I wish To see every one can use computer and Internet in sTudying, working and in research. I hope That we can use Sun light ~~and~~, electricity and other sources of clean energy ~~instead of~~ To become a clean country.

Anger is sometimes benefical Agree or disagree?

I agree That sometimes anger is benefical as we can express our feeling and show it To The others. HoweVer, IT is not benefical in all Times as when some one becomes angry he can't Think well in This Time and he willnot be able To ~~find answers To~~ solve his Problems and he also might say words That can annoy People (others) from him. So, we can get angry but we should control ~~ours~~ ourThelves in anger.



Subject: Date:

In 2020 I have to achive many goals. One of them I hope to be a very famous doctor in Pediatrics. and to be abroad to another cyties to see their beautiful places, meet another people, Know more about their Cultur and language.

The another dream is to have a clinic to help the sick children and help them to Smile.

the very important goal I hope to achive is to be a journalist or to write in many journals some articals to say my oPonins in many Issus. In our Cammunity.

Both the control and experimental group students' knowledge about and performance in essay writing have been improved, as revealed at post-test. For instance, they could write quite well-developed essays with respect to structure, showing relative improvement on such skills as sentence structure and paragraph writing; writing an introduction, body, development of the body and conclusion of as essay; cohesion and unity; punctuation, grammar, spelling, word choice, format, organisation, topic sentences, and most of the twenty nine skills embedded in the "Essay writing Module". Examples of students' writing on the post-test show this, as will follow. The following reflects a student's (student no. 4) better performance on the post-test as compared to her previous pre-test performance (demonstrated earlier). Aspects of mishandled/ better-handled writing skills are highlighted by the teacher on both occasions (For marking abbreviations & acronyms used, please see Appendix D1). The teacher's later comments on the writing skills also reflect the aspects of improvement.

[1] Posttest

grammar

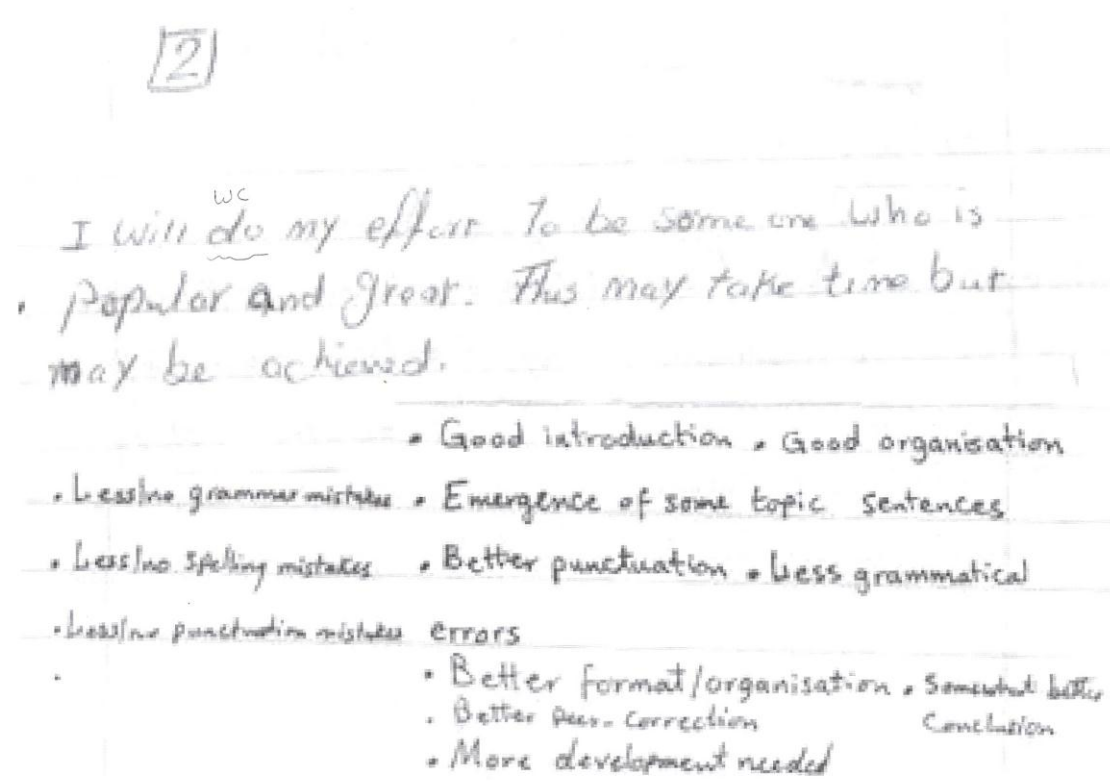
40

[1] achieve by 2020

. We must Look forward to the future. In 2020, I hope to achieve many goals. Some of them are easy to achieve, and the other may be difficult to achieve.

. In 2020, I hope to be a good doctor, and manage many people. I hope to be a famous doctor And I hope to discover a new device or treatment for a dangerous diseases to help patients. I will do my effort to achieve this goal in the future.

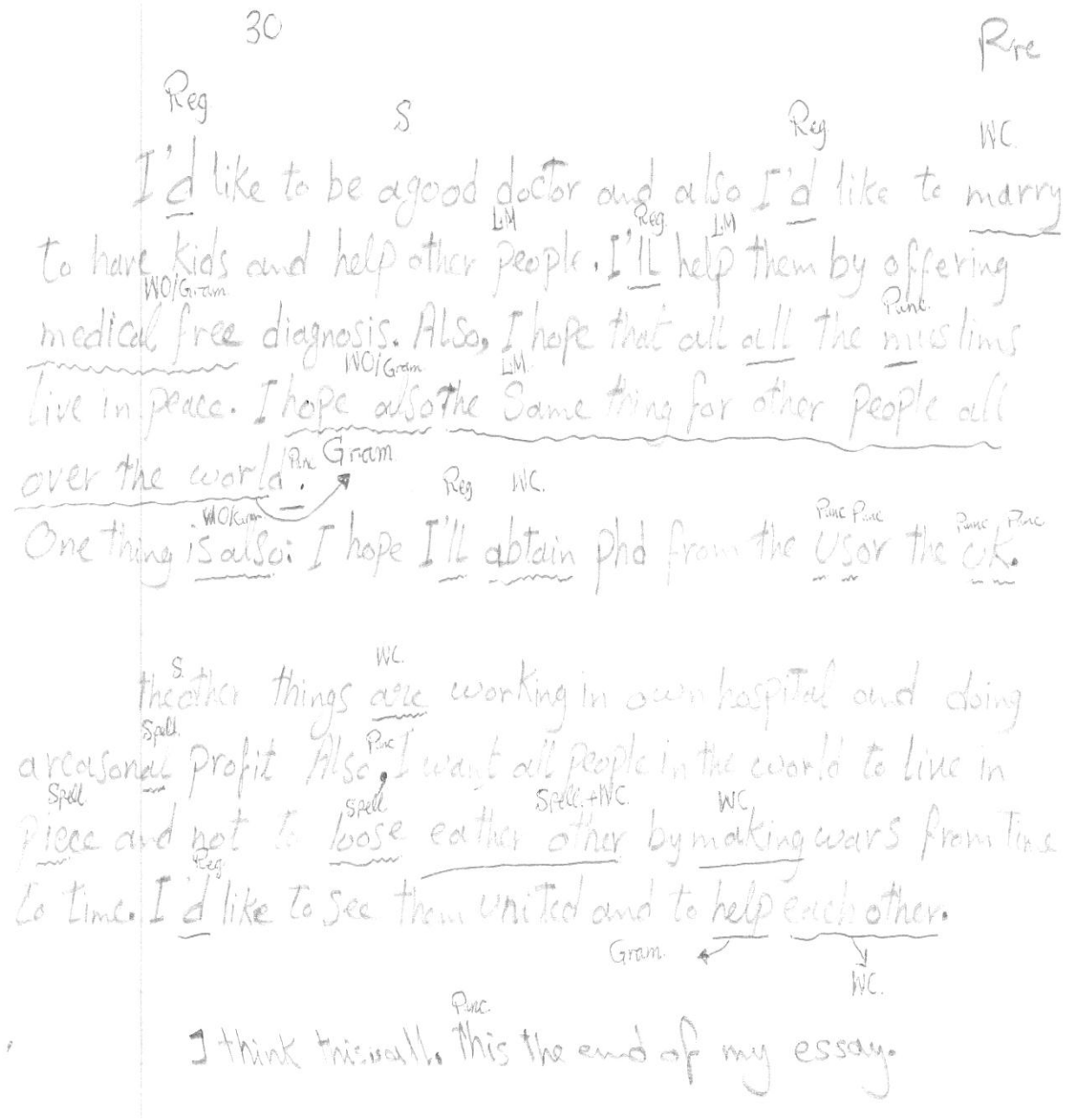
. One of my hopes in 2020 that is difficult to be achieved is spreading peace allover the world; I think it is difficult to achieve this goal.



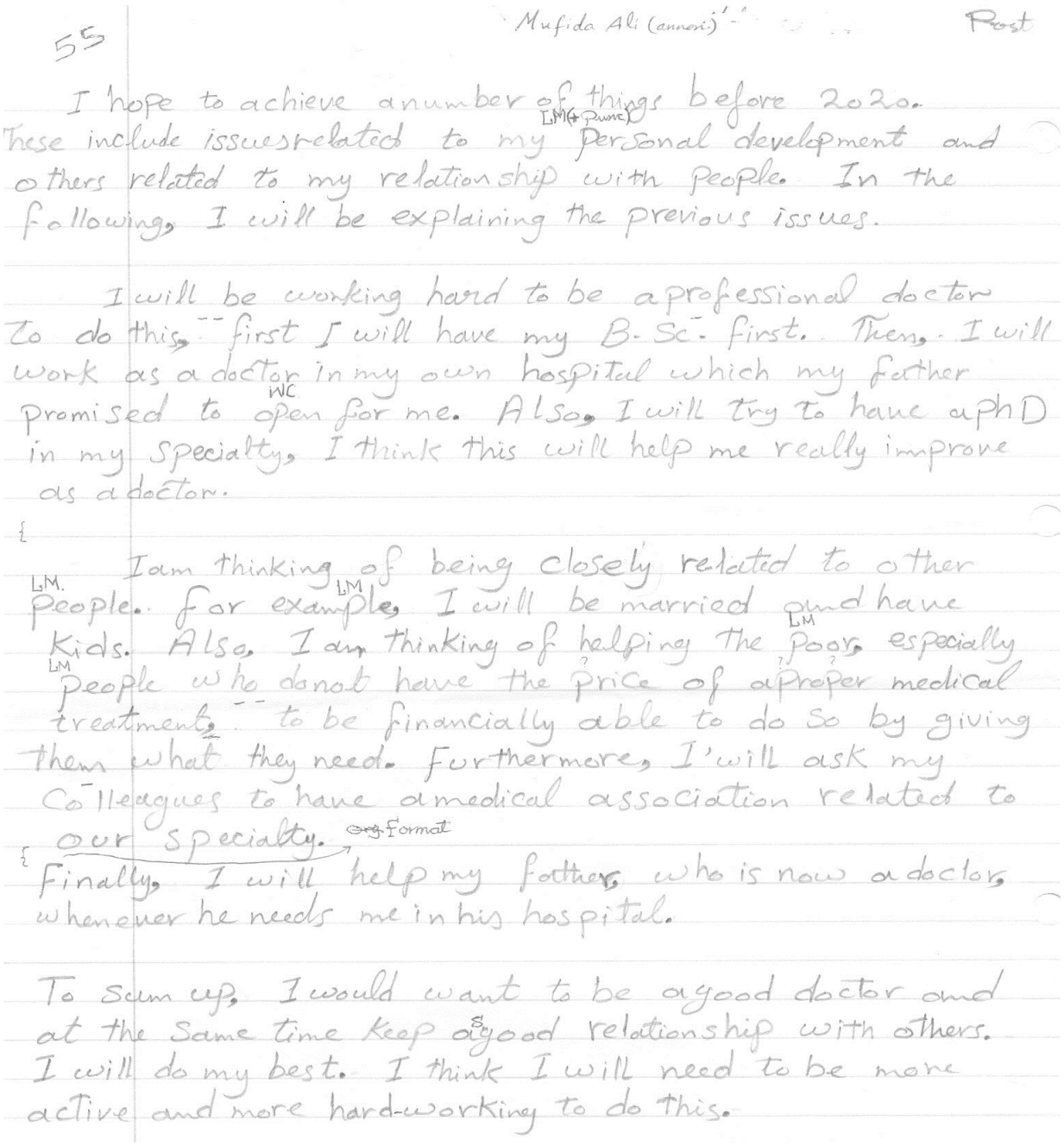
The improvement is mainly related to the "Essay Writing Module" all the students had taught, but must be admitted that it is partly related to the students' collaboration with the others, i.e. their peers and the teacher. (Peer & teacher correction can be seen in students' writing whose lines have dots at the beginnings.)

Another example of a student's writing on the pre post tests shows the improvement. (Her number is 30 – cont. group) This is obvious in the following:

Cont.pre-test



Cont. post-test



55

Mufida Ali (annonis)

Post

I hope to achieve a number of things before 2020. These include issues related to my personal development and others related to my relationship with people. In the following, I will be explaining the previous issues.

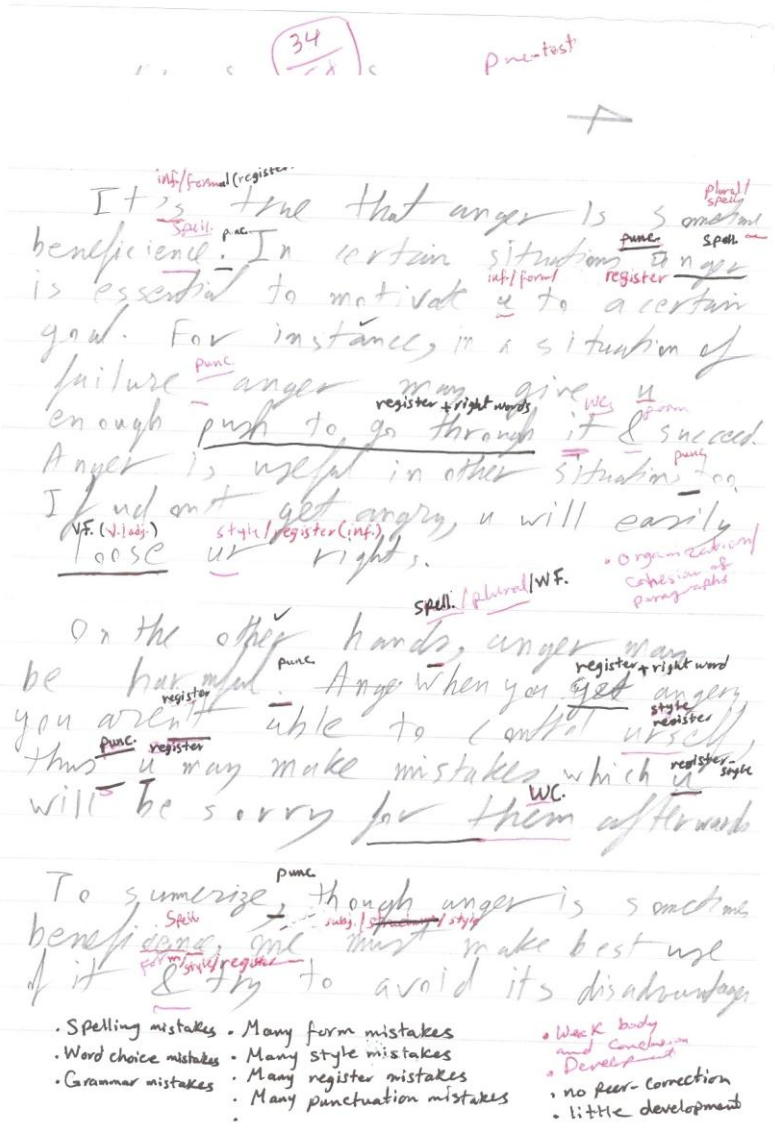
I will be working hard to be a professional doctor. To do this, first I will have my B. Sc. first. Then, I will work as a doctor in my own hospital which my father promised to open for me. Also, I will try to have a phD in my specialty. I think this will help me really improve as a doctor.

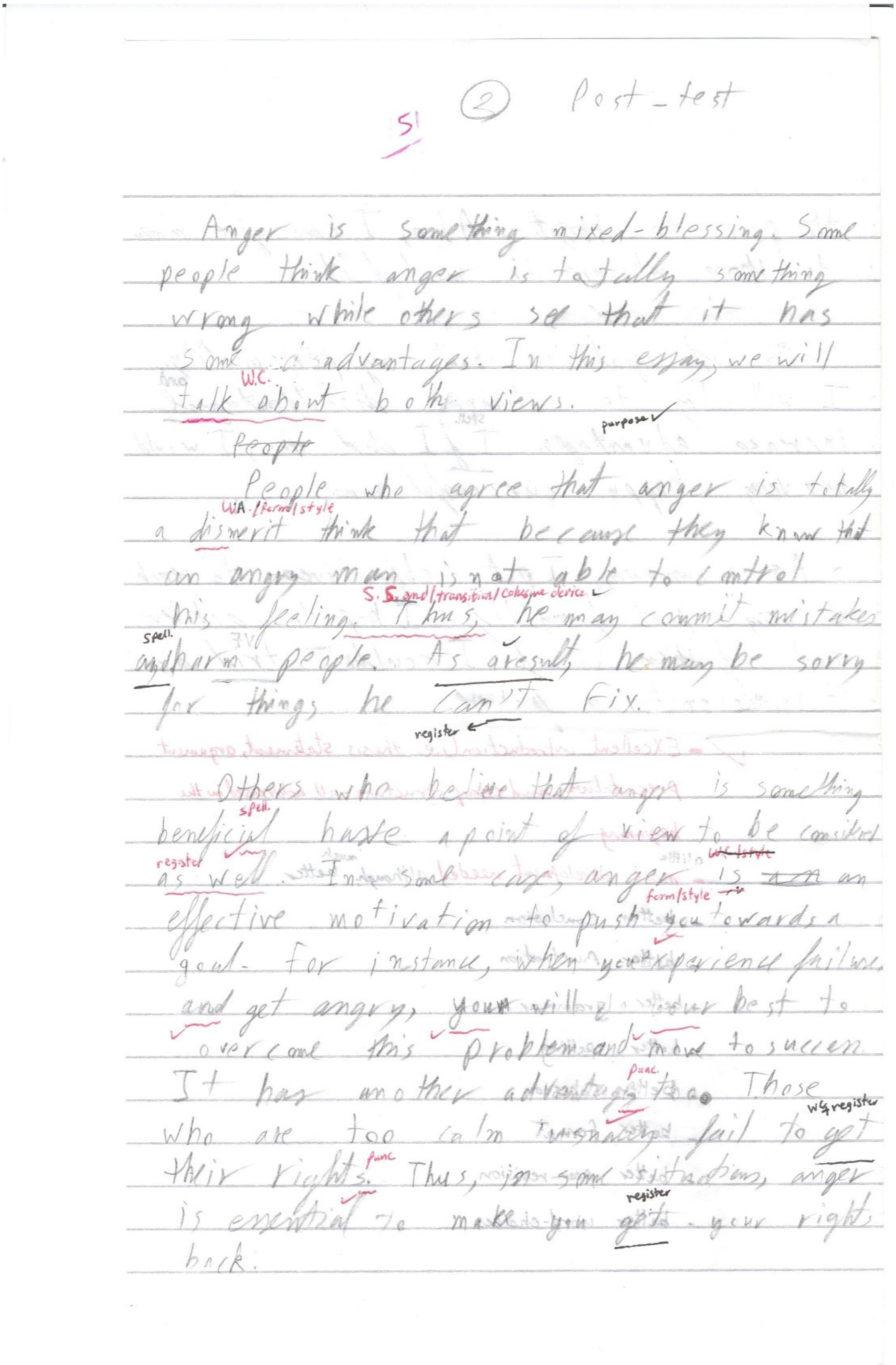
I am thinking of being closely related to other people. For example, I will be married and have kids. Also, I am thinking of helping the poor, especially people who do not have the price of a proper medical treatment, to be financially able to do so by giving them what they need. Furthermore, I will ask my colleagues to have a medical association related to our specialty.

Finally, I will help my father, who is now a doctor, whenever he needs me in his hospital.

To sum up, I would want to be a good doctor and at the same time keep a good relationship with others. I will do my best. I think I will need to be more active and more hard-working to do this.

Another example of a student's writing on the pre-test shows the improvement. (Student no. 30 – ex. group) This is obvious in the following:


34
pre-test
It's true that anger is sometimes beneficience. In certain situations anger is essential to motivate us to a certain goal. For instance, in a situation of failure anger may give us enough push to go through it & succeed. Anger is useful in other situations too. If we don't get angry, we will easily loose our rights.
On the other hands, anger may be harmful. Angry when you get angry you aren't able to control yourself thus you may make mistakes which you will be sorry for them afterward
To sumerize, though anger is sometimes beneficience, one must make best use of it & try to avoid its disadvantages.
• Spelling mistakes
• Word choice mistakes
• Grammar mistakes
• Many form mistakes
• Many style mistakes
• Many register mistakes
• Many punctuation mistakes
• Weak body and conclusion
• Development
• no peer-correction
• little development

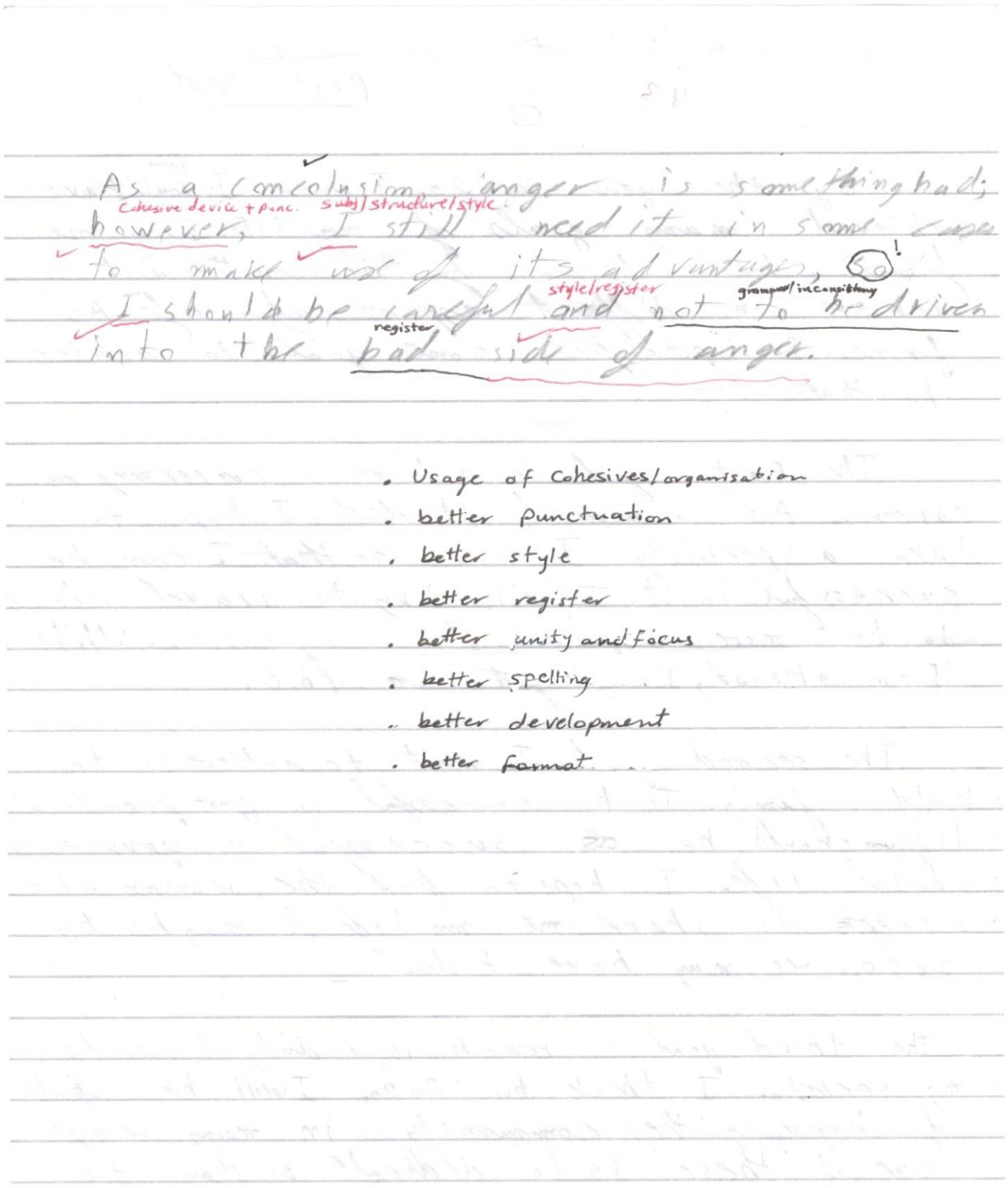


S1 ② Post_test

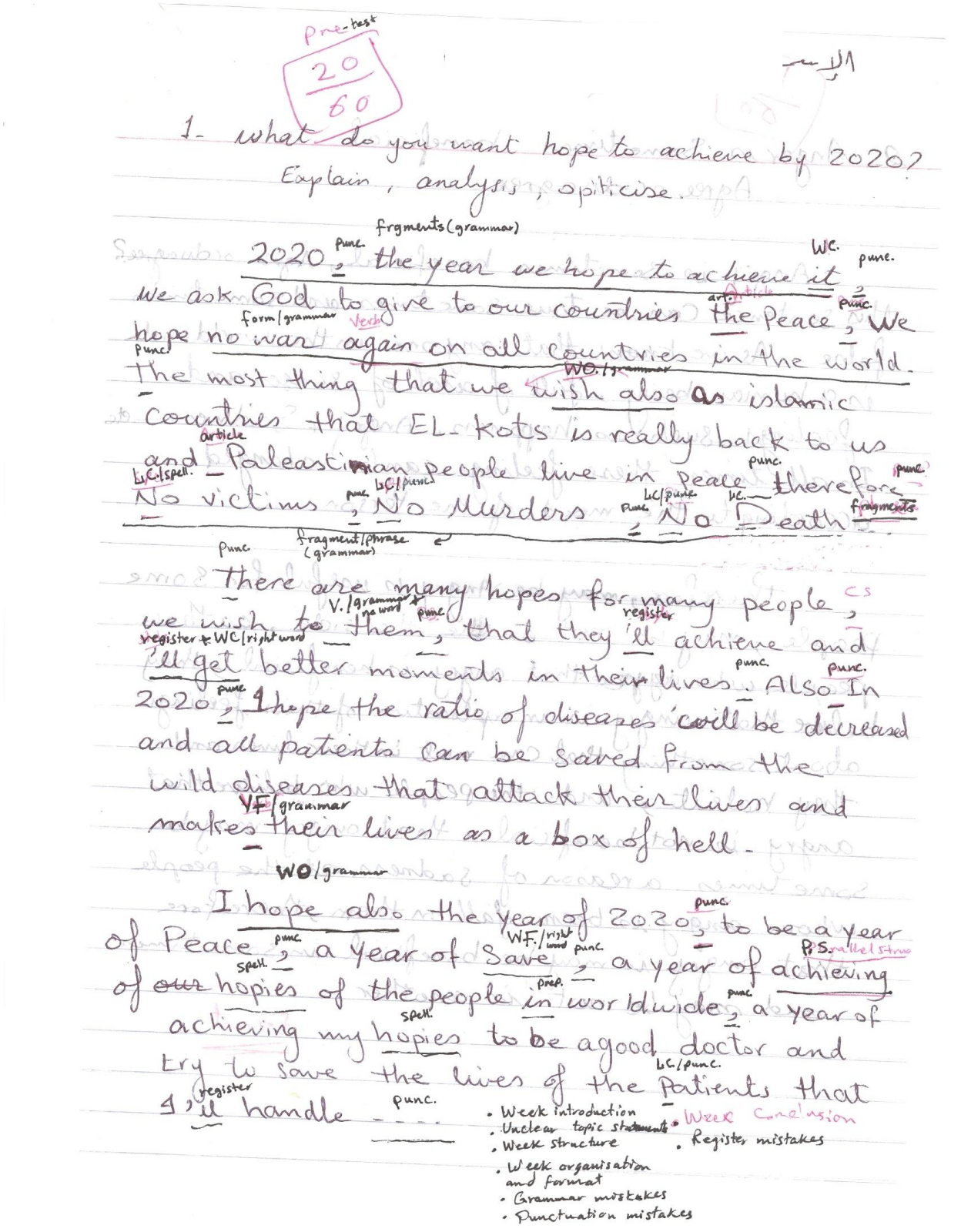
Anger is something mixed-blessing. Some people think anger is totally something wrong while others see that it has some advantages. In this essay, we will talk about both views.

People who agree that anger is totally a dismerit think that because they know that an angry man is not able to control his feeling. Thus, he may commit mistakes and harm people. As a result, he may be sorry for things he can't fix.

Others who believe that anger is something beneficial haste a point of view to be considered as well. In some cases, anger is an effective motivation to push you towards a goal. For instance, when you experience failure and get angry, you will do your best to overcome this problem and move to success. It has another advantage too. Those who are too calm usually fail to get their rights. Thus, in some situations, anger is essential to make you gets your rights back.



The following student's writing also provides a further example for improvement. The student's number is 22 (cont. group).
Pre-test


Pre-test
20/60
1- what do you want hope to achieve by 2020?
Explain, analysis, opiticise.
frgments (grammar)
2020, the year we hope to achieve it,
We ask God to give to our countries the Peace, We
hope no war again on all countries in the world.
The most thing that we wish also as islamic
countries that EL-kots is really back to us
and Paleastinian people live in peace therefore
No victims, No Murders, No Death
There are many hopes for many people,
we wish to them, that they 'll achieve and
'll get better moments in their lives. Also In
2020, I hope the ratio of diseases 'will be decreased
and all patients can be saved from the
wild diseases that attack their lives and
makes their lives as a box of hell.
I hope also the year of 2020, to be a year
of Peace, a year of Save, a year of achieving
of our hopies of the people in worldwide, a year of
achieving my hopies to be agood doctor and
try to save the lives of the patients that
I'll handle
• Week introduction
• Unclear topic statements
• Week structure
• Week organisation and format
• Grammar mistakes
• Punctuation mistakes
• Week Conclusion
• Register mistakes

Post test 45

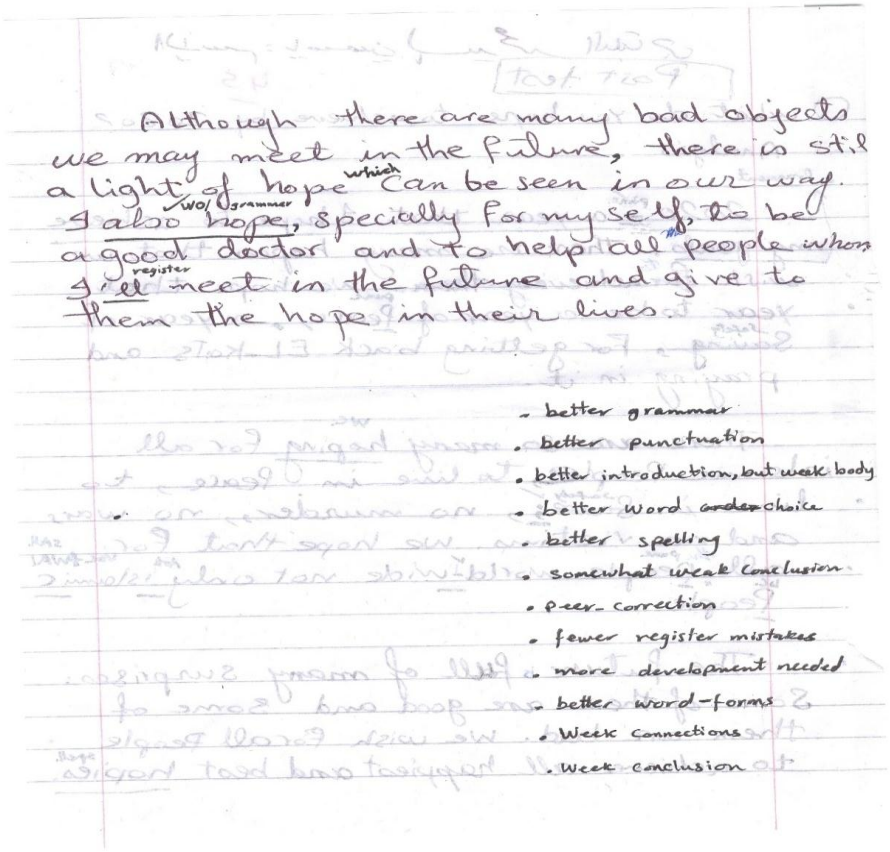
① what do you hope to achieve by 2020?

Analysis.

2020 = a year that I hope to achieve my goals. There are many hopes that we wish for achieving them. We hope that year to be a year of Peace, a year of Saving, For getting back EL-KoTs and praying in it.

There are so many hoping for all islamic People, to live in Peace, to live in Save: no murder, no wars and no victims. we hope that for all People world-wide not only islamic People.

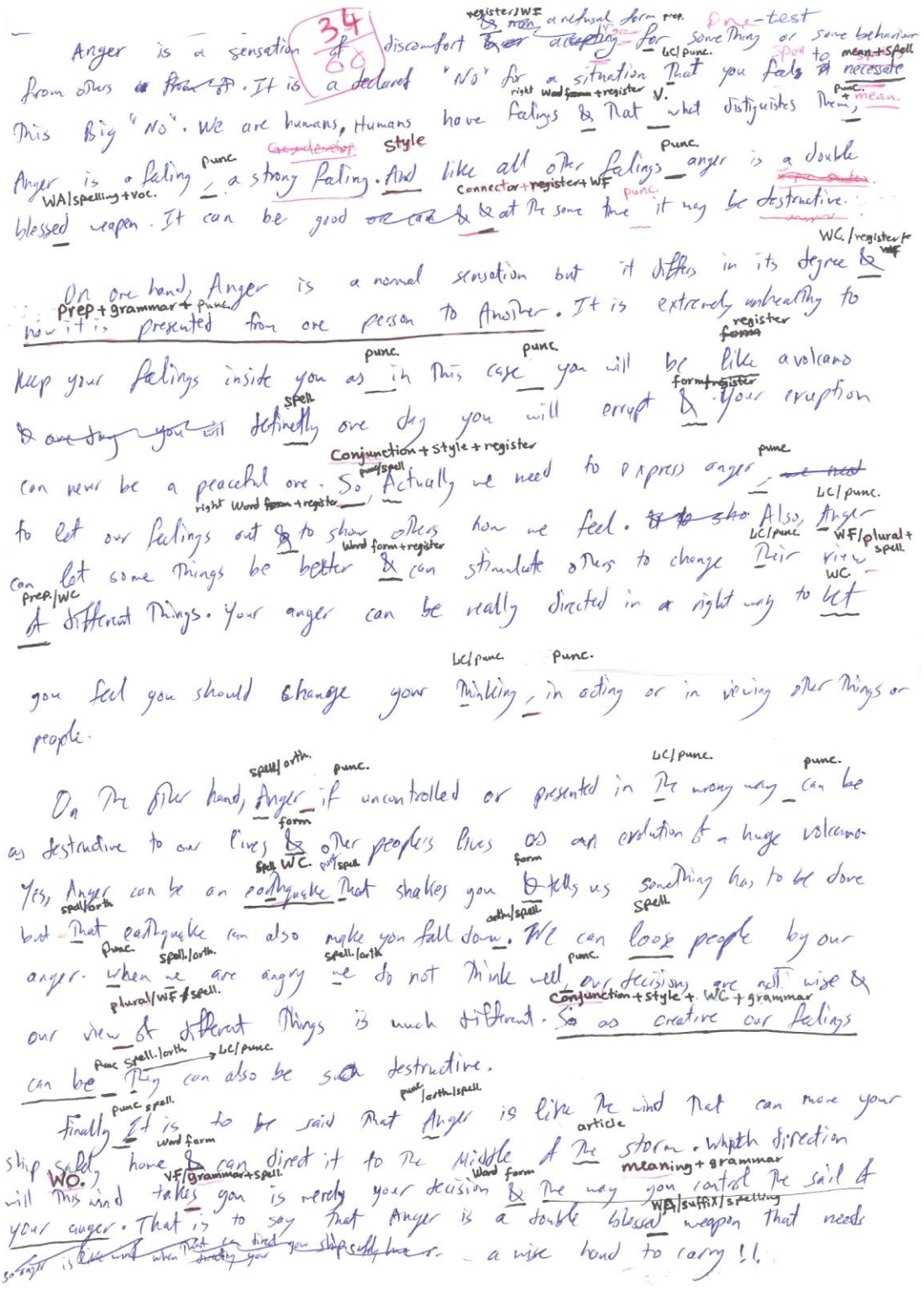
The future is full of many surprises: Some of them are good and Some of them are bad. We wish for all People to achieve all happiest and best hopies.


Although there are many bad objects we may meet in the future, there is still a light of hope which can be seen in our way. I also hope, specially for myself, to be a good doctor and to help all people whom I'll meet in the future and give to them the hope in their lives.

- better grammar
- better punctuation
- better introduction, but weak body
- better word order choice
- better spelling
- somewhat weak conclusion
- peer-correction
- fewer register mistakes
- more development needed
- better word-forms
- Week connections
- Week conclusion

A further example shows the improvement: control group pre post-test writing of a student (no. 6) is displayed below:

Pre-test



Anger is a sensation of discomfort from others. It is a declared "No" for a situation that you feel is necessary. This Big "No". We are humans, Humans have feelings & that what distinguishes them, Anger is a feeling, a strong feeling. And like all other feelings anger is a double blessed weapon. It can be good & at the same time it may be destructive.

On one hand, Anger is a normal sensation but it differs in its degree & how it is presented from one person to another. It is extremely unhealthy to keep your feelings inside you as in this case you will be like a volcano & one day you will definitely one day you will erupt & your eruption can never be a peaceful one. So Actually we need to express anger to let our feelings out & to show others how we feel. Also, Anger can let some things be better & can stimulate others to change their view of different things. Your anger can be really directed in a right way to let you feel you should change your thinking, in acting or in viewing other things or people.

On the other hand, Anger if uncontrolled or presented in the wrong way can be as destructive to our lives & other people's lives as an evolution of a huge volcano. Yes, Anger can be an earthquake that shakes you & tells us something has to be done but that earthquake can also make you fall down. We can loose people by our anger. When we are angry we do not think well, our decisions are not wise & our view of different things is much different. So as creative our feelings can be they can also be such destructive.

Finally it is to be said that Anger is like the wind that can move your ship safely home & can direct it to the middle of the storm. Whith direction will this wind takes you is merely your decision & the way you control the sail of your anger. That is to say that Anger is a double blessed weapon that needs a wise hand to carry !!

(6

better general essay statement

55 Post test

Similar to any human feeling, anger can be an urge for creation or a weapon for destruction. Anger as a reaction to a situation can be beneficial or can be destructive. What determines if anger is good or bad as a reaction to a special situation is the nature of the situation, the degree of anger and the persons ability to control this anger. WO/grammar

In some situations, anger is necessary and it may be even considered the Only Way to solve a problem and get out of a hard situation. Anger in some moments is the only sound that awakes dead people and marks the start of a new era in our lives. Anger can show others our negative ideas of something they did and tells them in a strong way that this will no longer be acceptable. That is to say that sometimes anger is the only way to deal with a certain situation.

On the other hand, Anger can spoil lives and destroy relations. Some situations need more wisdom to deal with. These situations need a quiet environment to think and a calm person to deal with. Some people have no control over themselves when they become angry, and with this type of people anger is only a weapon that they can only direct towards themselves. That is to say that anger can be so destructive if not properly used.

LC/punct

Finally, It is obvious that anger is really needed in some situation, but should be avoided in others. Anger is the wind that if your passes properly use you will sail to the shore and, if not, you can sail to the storm!! what determines the need of anger is your ability to control it, the situation itself and the degree of anger.

- Better topics sentences + essay sentence
- Better punctuation, e.g. letter cases
- Better spelling, e.g. word affixes
- Better register, i.e. right word form
- Better Connectors
- Better style
- More effective intro, body and conc
- Better word order
- Better meaning
- Better word-choices
- Better structures

(6

The assessment for the previous examples is discussed in this section. The overall improvement in writing is reflected in the assessment of micro-skills. Each micro-skill of the twenty nine micro-skills embedded in the module had to be assessed in order to assess each student's essay writing properly. In order to do this, there had to be a *maximum points for the skill*. This was calculated according to the demonstration and reasons given in Appendix D. The assessment also clarifies the group type to which the students belongs and test stage, i.e. whether it is a pre-test or a post-test. Finally, it gives the assessed points for each micro-skill and calculates the total points (it is noteworthy that when a tutor assessed a student's piece of writing and the student made a mistake, half a point was deducted off their maximum points for the micro-skill. However, this was not a straightforward rule as the student's overall other evidence related to the micro-skill needed to have been taken into consideration, too). For instance, while the Experimental group student no. 4 had a poor grade (15) on the pre-test because her micro-skills were not much developed, she had a higher grade (40) on the post-test after she was taught the module. (The following comparison (as embedded in Table 30) between the assessed micro-skills on the pre and post tests even shows the improvement the student made in the difference total points she deserved on both occasions.) Further examples of students' pre post test points per micro-skill can be seen in the same table below.

Table (30)

Examples of Students' Writing Assessed Points per Micro-Skill

		Students no. 4 (Ex.)		**Students no. 30 (Cont.)**		**Students no. 30 (Ex.)**		**Students no. 22 (Cont.)**		**Students no. 6 (Cont.)**	
Micro-skill	**Maximum points per skill**	**Pre-test points per skill**	**Post-test points per skill**	**Pre-test points per skill**	**Post-test points per skill**	**Pre-test points per skill**	**Post-test points per skill**	**Pre-test points per skill**	**Post-test points per skill**	**Pre-test points per skill**	**Post-test points per skill**
1. The ability to use grammar successfully	**4**	0.5	3	2	4	3	3.5	1	3.5	2.5	3.5
2. The ability to use the right word/ words	**3**	0.5	2.5	1	2.5	1.5	2.5	2	2.5	2	3
4) The ability to compose a sentence/ a paragraph/an essay	**2**	0.5	1.5	1	2	1	2	0.5	1	1.5	2
5) The ability to punctuate a passage on one page	**2**	0	1.5	0.5	2	1	2	0.5	1.5	1	1.5
6) The ability to weave sentences into a paragraph to produce a theme	**2**	0.5	1.5	0.5	2	1.5	2	0.5	1	1.5	2
7) The ability to present a clear topic statement	**2**	0.5	1.5	0.5	2	1	1.5	0	0.5	1.5	2
8) The ability to provide	**2**	0	1	1	1.5	1	1.5	0.5	1	1.5	1.5

supporting details											
9) The ability to show a unity and focus	**2**	0	1	1	1.5	1	1.5	0	1	1	1.5
10) Judging how much background knowledge the audience has on the subject and make clear what it is assumed they don't know	**1.5**	0.5	1	1	1.5	1	1.5	0.5	0.5	1	1
11) The ability to communicate a message or information	**1.5**	0.5	1	1	1.5	1.5	1.5	1	1.5	1	1.5
12) Mastering writing motions and letter shapes	**1.5**	0.5	1	1	1	1	1	0.5	1	0.5	1
13) Recognizing the need for space between words	**1.5**	0.5	1	1	1	1.5	1.5	1.5	1.5	1.5	1.5
14) Writing quickly	**1.5**	1	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
14. The ability to write freely what you want to write	**1.5**	0.5	1.5	1	1.5	1	1.5	1	1.5	1.5	1.5
15. Writing introductions, structure & conclusions	**1.5**	0	1	1	1.5	1	1.5	0.5	0.5	1	1.5
16. Preparing a paper that reads as a balanced account on a controversial topic	**4**	1.5	2	2	3	2.5	3.5	0.5	2.5	3	4
17. Correctly spelling all words in a one-page paper	**2**	0.5	1	1	2	1	1.5	0.5	1.5	0	2
18. Identifying problems	**1.5**	0.5	1	1	1	1	1.5	0.5	1	1	1.5

to be solved that the topic suggests											
19. Convey links and connections between events	**2**	0.5	1	1	2	1.5	2	0.5	0.5	1.5	2
20. Using the style appropriate to the genre and audience	**1.5**	1	1	1.5	1.5	0.5	1	1	1.5	0.5	1.5
21. Revise to improve word choice	**3**	0	2	0.5	2.5	3	2	0	2.5	0.5	3
22. Making the main ideas distinct from supporting ideas or information	**2**	0	1	0.5	2	2	1.5	0.5	1	1.5	1.5
23. The ability to use format perfectly	**2**	0	1.5	1	1.5	2	1.5	0.5	1	1.5	2
24. Avoiding common grammatical errors of standard written English - to use the right register	**4**	3	3	1.5	4	0.5	3	2	3.5	1	4
25. Writing effectively under pressure	**1**	0	0.5	0.5	1	0.5	1	0.5	0.5	0.5	1
26. Collaborating with others during reading and writing on a given project	**1.5**	0	0.5	0.5	1.5	0	0	0	1.5	0	1
27. Writing a paper with good overall organization (e.g. ideas in order, effective transitions	**2**	0	1	1	1.5	1.5	1.5	0	1	1.5	2
28. Choosing words that a reader can understand	**3**	2	2.5	2.5	3	2	2.5	2	2.5	2	3
29. Stating the purpose of	**2**	0	1	0.5	2	1	2	0	0.5	0	0

writing to the reader											
Total points the students deserves		15	40	30	55	34	51	20	40	33	55

The table above also shows the micro-skill assessment of students number 4 (experimental group), 30 (control group), 30 (experimental group), 22 (control group), & 6 (control group). It is realized that it is a common observation that all the above total points the students deserved became more on the post-test than on the pre-test. Also, most micro-skills can be seen as developed, more clearly the first six. However, as shown in the table, three micro-skills almost received no development. Micro-skill 10 (The ability to communicate a message or information) is an example of this. Still, it looks like students needed more development in their essays in order to 'communicate a message fully'. It is noteworthy that the time during which the module was taught should probably have been longer in order to cover much practice on this skill. Also, micro-skill twelve (Recognizing the need for space between words) was not developed any further. This happened simply because it had been already developed in most individual cases. Although jurors stated that it is an important skill for the medical school students, it is in this study found to be unnecessary to be taught. Likewise, micro-skill 13 (writing quickly) almost did not receive improvement. This was simply because almost all the students wrote quickly from the beginning of the module to the end and finished their tasks in the designated time (see the writing test in Appendix F). Nonetheless, more concern should be given to whether the students write quickly to achieve the purpose of writing or not.

Similarly to some extent, the development in micro-skill 11 (Mastering writing motions and letter shapes) received little progress. The reason why this happened was that it was likely that students as being medical students did not care much which case a letter was as long as it was readable. The previous examples of their writing support this claim. Furthermore, micro-skill 15 (Writing introductions, structure & conclusions) had a little better situation. It was improved, but not as hoped across all students' points. This could be attributed to the short term the students practiced such a skill.

Also, more importantly, as reflected in students' pre post-test total points, the overall difference between the two groups is not great.

Thus, it was seen that the mistakes the students made were less serious, the type a little different (or sometimes attributed to lack of practice), and their frequency lower on the post-test than on the pre-test. Also, it was evident that most micro-skills taught generally received development. Furthermore, certain skills received more development than others; others received a low level of development, and some did not develop at all. Finally, it was seen that the improvement in both groups was similar.

Summary

This chapter has dealt with the results and analysis of results. The main focus in the chapter has been to address the six questions (i.e. as in Chapter III) raised in the study relating them to the related statistics and to check the three hypotheses (i.e. as, again, in Chapter III) presented. Related results analysis and discussion followed the statistics handling whether or not to accept a certain hypothesis. The statistics used varied from t-tests to effect-sizes to frequencies to test the impact of the IWB and the size of this impact on improving the Medical School essay writing and their attitudes towards both essay writing and the IWB, shown in tables and graphs. Finally, the chapter provided examples of students' mistakes in writing, whole pre post test essay examples, and assessments to the essay writing micro-skills as in the "Essay writing Module).

Conclusion

From the previous results and discussions presented in this chapter, it is clear that the IWB as an intervention method has no significant impact on students' achievement in ESL essay writing. However, it is clear that there is statistically significant impact which reflects that the tool can make students' *attitudes* towards writing relatively more positive than the traditional method. Results further reveal that, when taught via the tool, the Medical School Students have positive attitudes towards it. All the previous results mentioned are supported by those reached in previous research and claims regarding a possible impact on achievement in writing were found insignificant. (Those claims were posed in the beginning of the thesis in Chapter I). The reasons are the novelty of the equipment and teacher's relative experience in using the tool. This study results can then be described as confirming previous research findings despite the fact that it has been conducted in a new setting including a new sample. Statistically, this chapter reveals that the impact on achievement in writing can be stated to be limited although students' positive attitudes towards both the IWB and writing have been found.

Also, in this chapter, the types of students' mistakes in writing on the pre-post test have been analysed and it was seen that students made improvement as to the type,

level, and frequency of mistakes. The development in students' writing can be seen in the comparison of examples of their pre-post-writing essays and is related to the micro-skills taught. The Assessment process details were also discussed and examples showing student assessment points have proved that the improvement the two groups made on the pre post writing test was similar. Briefly, this chapter addressed the impact of the IWB on writing and attitudes towards both essay writing and the IWB itself, analysed the mistakes as well as the development the students made, and drew conclusions related to the total scores students had on writing micro-skills. Chapter V will provide an overall summary of the whole study.

CHAPTER V

SUMMARY, CONCLUSIONS, RECOMMENDATIONS, & SUGGESTIONS FOR FURTHER RESEARCH

- **Introduction**
- **Summary**
- **Findings**

  First question

  Second question

  Third question

  Fourth question

  Fifth question

  Sixth question
- ***Conclusions***
- ***Implications***
- ***Recommendations***
- ***Suggestions for further research***
- **Conclusion**

CHAPTER V

SUMMARY, CONCLUSIONS, RECOMMENDATIONS, & SUGGESTIONS FOR FURTHER RESEARCH

Introduction

This chapter provides a summary of the whole study. It summarizes the background to the problem, the problem, results, questions, and hypotheses of the study and related findings. It also clarifies implications in and conclusions of the study. It finally provides recommendations and suggestions for further research in light of findings from both the present study and other research.

Summary

There is an increasing requirement for medical school students to have language proficiency in the skill of writing as a macro-skill consisting of smaller micro-skills. This study investigated applying this requirement and was prompted by the researcher's contact with medical students and his study at the Language Centre at the University of Durham where he first experienced IWB. One reason for the administration of the study is that a pilot study showed that the essay writing skills of the Medical School students at the Suez Canal University in Egypt were rather weak and the University Regulations did not include teaching English as a subject, and hence, teaching of writing to these students, except for the first two years (out of a total of six years' study time). Another is that these students had never studied essay writing before they joined the medical school. A third is the investigation of a new technology since the IWB, which was proposed as an intervention tool in this study, was a new technology which had not been introduced to the Egyptian educational system. Since there were not many studies investigating the impact of this tool on essay writing, the present study was conducted to investigate whether this tool could have an impact on students' achievement in and attitudes towards essay writing or not for filling this gap in knowledge. The field problem addressed, then, was represented in the weakness in the essay writing skills of the Medical School students at the Suez Canal University in Egypt. Therefore, the research problem of the study

was basically dedicated to investigating the impact of the technology on Medical students' achievement in essay writing and their attitudes towards essay writing.

The purpose of this study therefore was to find out the extent to which the teaching ESL essay writing using the IWB, as compared to teaching it in the traditional method (in which students rely on pen and paper, and a whiteboard) was effective or ineffective to the Suez Canal University students enrolled in the Medical School. This study also aimed at identifying a list of writing micro- skills important to the medical school students. It further aimed at discovering the students' attitudes towards writing, and, additionally, towards the IWB. To achieve this, an essay writing module which, again, addressed micro-skills the students needed was developed.

The Medical School students enrolled in the experiment were sixty third-year students randomly selected from the School of Medicine in Ismailia Campus where the only Medical School in the university lies. They came from different, buth the same, social contexts, both urban and rural. The experimental phase of the study took place in the Technology Lab at the school of Information Technology in Ismailia in the summer of 2008. It ran over fourteen sessions. Two groups of students were involved: an experimental and a control which were both taught a writing module based on their needs. These two groups formed the experimental design for this study which the study adopted. Students of the experimental group were taught separately - at no point of seeing, meeting, or interacting with the other control group students - with the teacher using the IWB while students of the control group did not experience the new technology and were taught in the traditional method: pen and paper and an ordinary whiteboard. The season chosen helped in the two groups not meeting each other: it was summer time.

In order to achieve the purposes of the study, four instruments were devised and such issues as validity and reliability were addressed where necessary. To identify the writing (micro-) skills necessary for the Medical School Students, there was a *writing micro-skill questionnaire* conducted. It was filled in by specialists related to Language Teaching, Linguistics, and Psychological Assessment & Evaluation. To assess students' achievement/ proficiency in essay writing in a pre-post treatment, a *writing pre- posttest* had to be devised. To identify students' attitudes' towards

writing, a *writing attitude survey* was developed. In order to know students' attitudes towards the IWB involved in the teaching/ learning process, an *IWB Attitude Questionnaire* addressing this issue was devised. All tools were then conducted after they were devised and validated.

The study also sought to answer the following questions:

7. What are the essay writing micro-skills necessary/important for the Medical School students?
8. What does a module which addresses the essay writing micro-skills necessary for the medical school students look like?
9. To what extent is teaching ESL essay writing with an IWB compared to teaching it traditionally effective in improving the Suez Canal University Medical School students' essay writing?
10. To what extent do the Suez Canal University Medical School students' attitudes towards essay writing change, from before to after applying both of the previously-mentioned methods?
11. To what extent is there a difference between the experimental group and the control group in the change in attitudes towards writing (if any) after applying the previously mentioned two methods?
12. To what extent do the Suez Canal University Medical School students' (i.e. the experimental group's) attitudes towards the IWB change, from before to after applying both methods?

The following hypotheses were tested

5. Teaching ESL essay writing with an IWB is more effective than teaching it in the traditional method, as shown by statistically significant differences (at both the 0.05 & 0.001 statistical significance levels) in the mean scores of both the experimental and control groups on the writing post-test in favour of the experimental group post-test at moderate practical significance.
6. teaching ESL essay writing with an IWB changes the experimental group students' attitudes towards writing more positively than teaching essay writing in the traditional method (as proved by statistically significant differences at both the 0.05 and the 0.001 statistical significance level between the mean scores of both

the control and experimental groups on the post-test in favour of the experimental group post-test at a moderate practical significance level)

7. Teaching ESL essay writing with an IWB changes the experimental group's attitudes towards the IWB (as proved by statistically significant differences in the students' mean scores at the 0.05 level) at a high practical significance level at the pre-post-test stages in favour of the post-test stage.

Findings

Six research questions were addressed and the following findings were obtained in response to each question in the study.

First question

The first question asked what the writing micro-skills necessary for the Medical School Students were. To answer this question, the writing skills in literature were gathered (i.e. as in Table (7)) and the ones important to the medical school students identified (as in Appendix C). The procedures of the study finally produced twenty nine micro-skills for inclusion in the writing module, i.e. as in Appendix C2, after final refinement. They were obtained through the literature reviewed, the results of a juror survey and logical exclusions of a number of skills.

Second question

The second research question asked, what does a proposed essay module based on the writing micro-skills necessary for the Medical School Students look like? This question was answered through the procedures of this study and validated through expert opinion. The proposed module in Appendix K reflects those features.

Third question

The third research question asked to what extent teaching ESL essay writing with an IWB compared to teaching it traditionally was effective in improving the Suez Canal University Medical School students' achievement in ESL Essay writing.

The first hypothesis dealt with this question and it was not substantiated. After a statistical analysis was conducted, there appeared to be a statistical difference between the pre post-test mean scores of both groups when compared. The difference was attributed to the "Essay Writing Module" taught. The mean score of the control group at post-test was slightly higher than that of the treatment group at the same stage. They were 86.17 and 82.90, respectively. This also meant that significantly statistical differences were found between the two mean scores. Also, the "effect size" calculated for the post-test was -0.18 (Hedges g). It was a small, negative one because of the novelty of the equipment and teacher's relative experience in using the board. Also, the difference in mean score at the post-test stage in both groups was non-significant, which meant no method had no major better rank over the other. Although there was a general progress in essay writing achievement in both groups, this progress was attributed to the "Essay Writing Module" which was taught to both groups and addresses their needs. Apparently, there was no evidence supporting the claim that any positive effects were caused by using the IWB when compared to using the traditional method.

Overall the module was shown to be effective in improving writing skills. This was shown by the overall improvement in pre post writing test scores and in the session evaluations where students stated that they enjoyed each session; that it was highly useful to them, and that it was interesting, too.

Fourth question

The fourth question asked to what extent the Suez Canal University Medical School students' attitudes towards ESL essay writing changed from before to after applying the IWB and the traditional method. The results presented and discussed in Chapter IV showed that the students' attitudes became more positive in both groups on the post-test. However, students' attitudes in the experimental group were more positive than those in the control group.

Fifth question

The fifth question asked to what extent there was a difference between the experimental group and the control group in the change in attitudes towards writing (if any) after applying the previously-mentioned interventions.

When compared together, the post-test mean scores of the experimental and control had a difference which was statistically significant at both the 0.05 and the 0.001 levels in favour of the experimental group on the post-test. This difference was attributed to using the IWB as it was the only different factor in the experiment. The effect size for this difference was calculated; it was 1.88 (Hedges g) which was positive. The conclusion that IWB had a bigger impact on the Medical School students' attitudes towards writing was then drawn.

Sixth question

The sixth question asked to what extent do the Suez Canal University Medical School students' (i.e. the experimental group's) attitudes towards the IWB changed, from before to after applying both of the previously-mentioned methods.

The results, again, showed and presented in Chapter IV, reveal that students' attitudes changed: in the beginning, the students even did not know what an IWB was, but at the end of the experiment, they had very positive attitudes towards the tool particularly towards the unusual capabilities (and usefulness) of the tool.

Conclusions

The main intent of this study was to investigate the impact of the IWB on improving medical school students' essay writing skills. Based on the results mentioned in Chapter IV, the following conclusions were drawn: a) the Medical School students needed 56 writing micro-skills (without refinement), b) using the IWB as a treatment did not have an impact on improving the Medical School Students ESL essay writing skills when compared to the traditional method (as manifested in the comparison of the two groups' mean scores), or, as revealed in Chapter IV, the impact was negative and very small. c) The micro-skills upon which the "Essay Writing Module" (i.e. Appendix K) was based were ones students really needed, d.) The Medical School Students were satisfied with the "Essay Writing Module" which was taught to them (as obtained from the "S. E." (i. e. Appendix I) they filled in, e.) The IWB changed students' attitudes towards writing, as proved by the results obtained from the writing attitude survey (i.e. Appendix G), f.) The Medical School Students were fascinated by the IWB they taught by, according to the results obtained from IWB attitude questionnaire (i.e. see the fifth question results and third hypothesis check in Chapter IV).

Therefore, all the previous points can make the conclusion that the IWB did not have an impact on the Egyptian Medical School Students' ESL essay writing with regards to achievement, as discussed in Chapter IV and given the limitations to the study sample size as clarified in Chapter III. However, with regard to the students' attitudes towards writing and towards the IWB, it is obvious that those attitudes were changed. While the students did to an extent - as shown in Chapter I- know paragraph writing (but not essay writing at all), they did *not* know about the IWB at the pre-test stage. Whereas the change in students' better achieving in essay writing was referred to "The Essay writing Module", but not to the tool, as discussed in Chapter IV, the positive change in their attitudes towards both writing and the IWB can be attributed to the use of the tool. These results are not different from others found in previous research.

Implications

Based on the findings of the present study, the following implications can be expressed:

1. A module that addresses students' needs is a practical and effective way to improving writing.
2. Students enjoy the use of the IWB by their instructors, but this is not sufficient to improve their achievement.
3. Further study is needed to investigate how to translate this enjoyment into more effective engagement in achieving better in writing either by developing the skills of the instructors in using the technology, or by developing a module content so as to take advantage of the features of the technology in a more effective way.
4. Since the study of ESL essay writing makes the Medical School Students progress toward higher achievement in writing, as appeared in this study and as supported by views in other research (i.e. Showalter and Griffin (2000), it is likely to help with students' development in other skills .

Recommendations

Based on the results of the present study and the conclusion that the IWB had almost no impact on achievement in ESL essay writing but that it positively affects students'

attitudes towards writing and towards the tool itself, the following are some recommendations:

1. Including an ESL essay writing either within a module of English or among other medical courses taught to the Medical School students is essential and should not pass overlooked and in the writing skills, as supported by Showalter and Griffin (2000) & Chur-Hansen & Vernon Roberts (2000).
2. Extending the time allocated for writing will lead to students' proficiency. Thus, studying essay writing for six years, not paragraph writing for two years as is the situation in Egypt, for the Medical School Students is highly recommended.
3. Secondary stage students in Egypt should learn essay writing before they enter the Medical School as this will prepare them better for their studies.
4. All micro-skills essential for the Medical School students as presented in this study should be cared for by course designers.
5. Lecturers of different courses than English should encourage the Medical School Students to write in an essay format, thus, achieving continuous improving is this area and receiving support.
6. The IWB should be utilized as a teaching aid used to sustain the teaching of writing, not as tool for obtaining higher achievement levels.
7. The IWB can make the teaching/ leaning process interesting provided the requirements of suitable pedagogy and good training on the part of the teacher are present; besides, any technical issues should be avoided.

Suggestions for further research

In light of the findings in this study as well as the literature reviewed, the following suggestions could be provided/ considered for further future research:

1. The impact of the IWB on improving particular types of writing such as "genre-related writing", "transverse writing", "genre-specific writing" as proposed in Chapter II of this study.
2. The impact of the IWB on improving the speaking skills of different groups of learners.
3. The impact of the IWB on improving the reading skills of different groups of learners

4. The impact of the IWB on improving the listening skills of different groups of learners.
5. The impact of the IWB on improving other populations' language skills than Medical School Students in other disciplines and sciences, e.g. engineering, chemistry, physics, biology, agriculture, education, etc.
6. The impact of the IWB on 'history' students' achievement in and attitudes towards history
7. The impact of the IWB on 'psychology' students' achievement in and attitudes towards psychology.

Conclusion

This chapter summarised the background of the problem, problem, results, conclusions and implications of the study. It also handled implications in the study and provided recommendations and suggestions for further research. It framed and summerised the study stages which finally yielded the general conclusion that the IWB is not effective in improving the Medical Students' ESL essay writing skills while it is in changing students' attitudes towards both writing and the IWB.

APPENDIX A

THE WRITING MICRO-SKILL QUESTIONNAIRE

School of Education,
Durham University
Leazes Rd.,
Durham City
DH1 1TA

Dear Juror (Professor, Dr., Mrs., Mr.,…),

This questionnaire includes a number of writing micro-skills. It is a part of a study investigating "The Effect of the Interactive White Board on improving the Medical School students' Writing Skills". It therefore asks for your opinions about the included micro-skills that may apply to these students. You are kindly requested to identify which skills should exist/ be developed in these students.

You will find four columns for a rating of 4, 3, 2, or 1, where 4 = **Very important, 3 = Important, 2 = Less important** and **1 = Not important.** Please, put a tick (√) next to the item and under the right column representing your choice.

Besides, there is a column for your **comments and suggestions.** Your efforts are highly appreciated.

(Please, note that examples of source/s of a writing micro-skill and its frequency in literature are shown for guidance and can be commented upon)

The researcher

The Writing Micro-Skill Questionnaire

Examples of Source/s for Micro-Skill	**Micro Skill**	(for guidance Only) **Frequency in Literature** (This includes different aspects of a micro-skill mentioned)	**Rating**				**Comments & Suggestions**
			4	**3**	**2**	**1**	
McCarthy, Merier & Rinderer (1985)	the ability to use grammar successfully	11					
McCarthy, Merier & Rinderer (1985)	the ability to use the right word/ words	9					
McCarthy, Merier & Rinderer (1985)	the ability to compose a sentence/ a paragraph/an essay	4					
McCarthy, Merier & Rinderer (1985)	the ability to punctuate a passage on one page	5					
McCarthy, Merier & Rinderer (1985)	the ability to weave sentences into a paragraph to produce a theme	4					
(Graham & Harris, 1998a)	the ability to write a story, e.g. writing down the feelings of a main character, describing the setting	2					
Pajares & Johnson, 1994; Shell et al (1989, 1995)	the ability to complete a term paper	12					
Pajares & Johnson, 1994; Shell et al (1989, 1995)	the ability to make up a short a little fiction story	2					
Pajares & Johnson, 1994; Shell et al (1989, 1995)	the ability to write composition in a letter form to a friend	4					

Southern Illinois (2007)	the ability to respond fully to an assignment	1					
Southern Illinois (2007)	the ability to show proper critical thinking	2					
Southern Illinois (2007)	the ability to present a clear topic statement	3					
Southern Illinois (2007)	the ability to express the aim manifestly in a convincing way	3					
Southern Illinois (2007)	the ability to use facts in a good sequence	4					
Southern Illinois (2007)	the ability to provide supporting details	3					
Southern Illinois (2007)	the ability to show a unity, focus and organization	4: unity 4: format					
Southern Illinois (2007)	the ability to use suitable language appropriate to the audience	9					
Southern Illinois (2007)	the ability to resort to decisive sources when necessary	13					
Southern Illinois (2007)	the ability to document and use citations properly	13					
Southern Illinois (2007)	the ability to use grammar punctuation, words, spelling and format perfectly	11: Grammar 5: Punc. 9: Voc. 4: Spelling 4: Format					
Southern Illinois (2007)	the ability to display original and creative thinking	2					

Fenapupae Confererence (2007)	Follow conventions of spelling, punctuation and capitalization	5: Punc. 4: Spelling					
Fenapupae Confererence (2007) /	The ability to use an acceptable core vocabulary and appropriate word order	11: Grammar 9: Voc.					
Fenapupae Confererence (2007)	The ability to use acceptable grammatical systems (i.e. tense, agreement), patterns and rules	11					
Fenapupae Confererence (2007)	The ability to express a particular meaning in different grammatical forms, with a variety of sentence structures	11: Grammar 9: Voc.					
Fenapupae Confererence (2007)	The ability to use cohesive devices in written discourse	4					
Fenapupae Confererence (2007)	The ability to convey links and connections between events.	4: Cohesion 3: supporting details					
Fenapupae Confererence (2007)	Communicate such relations as main ideas, supporting ideas, new information, given information, generalization and exemplification						
Fenapupae Confererence (2007)	The ability to distinguish between literal and implied meanings when writing	1					
Fenapupae Confererence (2007)	The ability to correctly convey culturally specific references in the context of the written text	1					

Fenapupae Confererence (2007)	The ability to develop and use a battery of writing strategies, such as accurately assessing the audience's interpretation, using pre-writing devices, using paraphrases and synonyms, soliciting peer and instructor feedback and using feedback, for revising and editing	9: Voc. 13: Research-related micro-skills 2: feedback					
Fenapupae Confererence (2007)	The ability to use rhetorical forms and conventions of written discourse						
Orwig (1999)	The ability to use the orthography correctly, including the script, and spelling and punctuation conventions.	4: spelling 5: Punc.					
Orwig (1999)	The ability to use the correct forms of words. This may mean using forms that express the right tense, or case or gender	11					
Orwig (1999)	The ability to put words together in correct word order.	11					
Orwig (1999) & Raneeli (1998)	The ability to use vocabulary correctly	9					
Orwig (1999)	The ability to use the style appropriate to the genre and audience	1					
Orwig (1999)	The ability to make the main sentence constituents, such as subject, verb, and object, clear to the reader	11					
Orwig (1999)	The ability to make the main ideas distinguished from supporting ideas or information	3					
Orwig (1999)	The ability to make the text coherent, so that other people	4					

	can follow the development of the ideas						
Orwig (1999)	judging how much background knowledge the audience has on the subject and make clear what it is assumed they don't know	1					
Orwig (1999)	The ability to communicate a message or information	1					
Orwig (1999)	recognizing the linear sequence of sounds	1					
Orwig (1999)	mastering writing motions and letter shapes	2					
Orwig (1999)	recognizing the need for space between words	1					
Orwig (1999)	writing quickly	1					
Orwig (1999)	The ability to write freely what you want t write	3					
Orwig (1999)	the ability to judge how much background knowledge the audience has on the subject and make clear what it is assumed they don't know	1					
Ranelli (1998)	writing effective introductions and conclusions	1					
Ranelli (1998)	Writing a one- or two-sentence answer to a specific test question	2					
Ranelli (1998)	Composing a one- to two-page essay in answer to a question	4					
Ranelli (1998)	Write a term paper of 15 to 20 pages	13					
Ranelli (1998)	Writing a scholarly article for publication in a professional journal in your field	13					
Ranelli (1998)	Writing a letter to the editor of the daily newspaper about a health-care topic	1					
Ranelli (1998)	Writing useful class notes	1					
Ranelli (1998)	Preparing a paper that reads as a balanced account on a controversial	13					

	topic						
Ranelli (1998)	Composing a paper summarizing a reading assignment	13					
Ranelli (1998)	Correctly spelling all words in a one-page paper	4					
Ranelli (1998)	Correctly punctuating a one-page paper	5					
Ranelli (1998)	Writing a paper with good overall organization (e.g., ideas in order, effective transitions)	13: research-related 4: format					
Ranelli (1998)	Correctly using plurals, verb tenses, prefixes, and suffixes	11					
Ranelli (1998)	Researching the subject	13					
Ranelli (1998)	Correctly using parts of speech (that is, nouns, verbs, adjectives)	11					
Ranelli (1998)	Identifying problems to be solved that the topic suggests	1					
Ranelli (1998)	Making clear statements of ideas	1					
Ranelli (1998)	Avoiding common grammatical errors of standard written English	11					
Ranelli (1998)	Quoting sources accurately	13					

Ranelli (1998)	Writing effectively under pressure	1					
Ranelli (1998)	Paraphrasing properly	13					
Ranelli (1998)	Collaborating with others during reading and writing on a given project	2					
Ranelli (1998)	Revising to improve word choice	10: voc.					
Ranelli (1998)	Revising awkward phrasing and vague language	10: voc.					

Ranelli (1998)	Choosing words that a reader can understand	10: voc.					
Ranelli (1998)	Knowing how the reader will use your document	1					
Ranelli (1998)	Stating the purpose of the writing to the reader	3					
Ranelli (1998)	Following a revision strategy to select, add, substituting, or deleting information when the prospective readers to the paper have changed	13: research-related					

Thanks!

APPENDIX B

WRITING MICRO-SKILL QUESTIONNAIRE RESULTS

The Writing Micro-Skill Questionnaire Results (as Obtained from Jurors)

Examples of Source/s for micro-skill	Micro skill	Number of jurors choosing each rating				Total points
		4	**3**	**2**	**1**	
McCarthy, Merier & Rinderer (1985)	The ability to use grammar successfully	8				32
McCarthy, Merier & writing micro-skills.docRinderer (1985)	The ability to use the right word/ words	5	2	1		28
McCarthy, Merier & Rinderer (1985)	The ability to compose a sentence/ a paragraph/an essay	5	3			29
McCarthy, Merier & Rinderer (1985)	The ability to punctuate a passage on one page	5	3			29
McCarthy, Merier & Rinderer (1985)	The ability to weave sentences into a paragraph to produce a theme	5	3			29
(Graham & Harris, 1998a)	The ability to write a story, e.g. writing down the feelings of a main character, describing the setting		1	4	3	14
Pajares & Johnson, 1994; Shell et al (1989, 1995)	The ability to complete a term paper		1	2	5	18
Pajares & Johnson, 1994; Shell et al (1989, 1995)	The ability to make up a short a little fiction story		2	3	3	15
Pajares & Johnson, 1994; Shell et al (1989, 1995)	The ability to write composition in a letter form to a friend			6	2	14

Southern Illinois (2007)	The ability to respond fully to an assignment		2	3	3	15
Southern Illinois (2007)	The ability to show proper critical thinking	5	1	1		25
Southern Illinois (2007)	The ability to present a clear topic statement	5	3	1		28
Southern Illinois (2007)	The ability to express the aim manifestly in a convincing way	1	1	3	3	16
Southern Illinois (2007)	The ability to use facts in a good sequence	2	3	3		23
Southern Illinois (2007)	The ability to provide supporting details	3	3	2		25
Southern Illinois (2007)	The ability to show a unity, focus and organization	3	4	1		25
Southern Illinois (2007)	The ability to use suitable language appropriate to the audience	4	2	2		24
Southern Illinois (2007)	The ability to resort to decisive sources when necessary	1	1	3	3	16
Southern Illinois (2007)	The ability to document and use citations properly	3	2	1	1	21
Southern Illinois (2007)	The ability to use grammar punctuation, words, spelling and format perfectly	5	2		1	27
Southern Illinois (2007)	The ability to display original and creative thinking		5	3		21

Fenapupae Confererence (2007)	Following conventions of spelling, punctuation and capitalization	5	3			29
Fenapupae Confererence (2007)	Using an acceptable core vocabulary and appropriate word order	4	3		1	26
Fenapupae Confererence (2007)	Using acceptable grammatical systems (i.e. tense, agreement), patterns and rules	4	3		1	26
Fenapupae Confererence (2007)	Expressing a particular meaning in different grammatical forms, with a variety of sentence structures		2	3	3	15
Fenapupae Confererence (2007); Orwig (1999)	Using cohesive devices in written discourse	1	2	4		18
Fenapupae Confererence (2007)	The ability to use rhetorical forms and conventions of written discourse		2	5		16
Fenapupae Confererence (2007)	Conveying links and connections between events.	3	4	1		25
	Communicating such relations as main ideas, supporting ideas, new information, given information, generalization and exemplification	4	3	1		26
Fenapupae Confererence (2007)	Distinguishing between literal and implied meanings when writing	1	1	3	2	15
Fenapupae Confererence (2007)	Correctly convey culturally specific references in the context of the written text	1	2	3	2	18
Fenapupae Confererence (2007)	Developing and use a battery of writing strategies, such as accurately assessing the audience's	1	1	3	3	16

	interpretation, using pre-writing devices, using paraphrases and synonyms, soliciting peer and instructor feedback and using feedback, for revising and editing					
Orwig (1999)	The ability to use the orthography correctly, including the script, and spelling and punctuation conventions.	4	4			28
Orwig (1999)	The ability to use the correct forms of words. This may mean using forms that express the right tense, or case or gender	4	4			28
Orwig (1999)	The ability to put words together in correct word order.	4	4			28
Orwig (1999) & Raneeli (1998)	The ability to use vocabulary correctly	5	3			26
Orwig (1999)	The ability to use the style appropriate to the genre and audience	4	4			28
Orwig (1999)	The ability to make the main sentence constituents, such as subject, verb, and object, clear to the reader	4	4			28
Orwig (1999)	The ability to make the main ideas distinct from supporting ideas or information	5	3			29
Orwig (1999)	the ability to make the text coherent, so that other people can follow the development of the ideas	4	4			28
Orwig (1999)	The ability to judge how	3	5			27

	much background knowledge the audience has on the subject and make clear what it is assumed they don't know					

Orwig (1999)	The ability to communicate a message or information	5	2	1		28
Orwig (1999)	Recognizing the linear sequence of sounds		2	3	3	15
Orwig (1999)	Mastering writing motions and letter shapes	3	4		1	25
Orwig (1999)	Recognizing the need for space between words	4	4			28
Orwig (1999)	Writing quickly	4	3	1		27

Orwig (1999)	The ability to write freely what you want to write	3	2	2	1	28
Orwig (1999)	The ability to judge how much background knowledge the audience has on the subject and make clear what it is assumed they don't know		2	2	2	12
Ranelli (1998)	Writing effective introductions conclusions	4	4			28

Ranelli (1998)	Writing a one- or two-sentence answer to a specific test question		1	4	3	14
Ranelli (1998)	Composing a one- to two-page essay in answer to a question			6	2	14
Ranelli (1998)	Writing a term paper of 15 to 20 pages	1	5	2		23
Ranelli (1998)	Writing a scholarly article for publication in a professional journal in your field	5	3	1		31
Ranelli (1998)	Writing a letter to the editor of the daily newspaper about a	3		3	2	20

	health-care topic					
Ranelli (1998)	Writing useful class notes	1	5	2		23
Ranelli (1998)	Preparing a paper that reads as a balanced account on a controversial topic	2	4	2		24
Ranelli (1998)	Composing a paper summarizing a reading assignment		2	4	2	16
Ranelli (1998)	Correctly spelling all words in a one-page paper	4	4			28
Ranelli (1998)	Correctly punctuating a one-page paper	6	2			30
Ranelli (1998)	Writing a paper with good overall organization (e.g., ideas in order, effective transitions)	5	3			29
Ranelli (1998)	Correctly using plurals, verb tenses, prefixes, and suffixes	4	4			28
Ranelli (1998)	Researching the subject	5	3			29
Ranelli (1998)	Correctly using parts of speech (that is, nouns, verbs, adjectives)	4	4			28
Ranelli (1998)	Identifying problems to be solved that the topic suggests	3	5			29
Ranelli (1998)	Making clear statements of ideas	4	4			28
Ranelli (1998)	Avoiding common grammatical errors of standard written English	4	4			28
Ranelli (1998)	Quoting sources accurately	7		1		30
Ranelli (1998)	Writing effectively under pressure	2	5	1		25
Ranelli (1998)	Paraphrasing properly	2	3	2	1	22

Ranelli (1998)	Collaborating with others during reading and writing on a given project	3	4	1		26
Ranelli (1998)	Revising to improve word choice	5	2	1		28
Ranelli (1998)	Revising awkward phrasing and vague language	5	1	1	1	26
Ranelli (1998)	Choosing words that a reader can understand	4	4			28
Ranelli (1998)	Know how the reader will use your document		2	4	2	16
Ranelli (1998)	Stating the purpose of the writing to the reader	4	4			28
Ranelli (1998)	Following a revision strategy to select, add, substitute, or delete information when the prospective readers to the paper have changed	4	4			28

(N.B. Micro-skills with total points of 24 or more were later selected to be considered for an "Essay Writing Module".)

APPENDIX C

SELECTION OF MICRO-SKILLS FOR THE MODULE

Micro-Skills (36) for a Writing Module and Reasons Why Certain Ones Are either Selected wholly or partially or excluded entirely, Mainly Based on "The Writing Micro-Skill Questionnaire Results"

Source/s of Micro-Skill	Micro Skill	Reason
McCarthy, Merier & Rinderer (1985)	1. The ability to use grammar successfully	Jurors' views (Js'. vs.)
McCarthy, Merier & Rinderer (1985)	2. The ability to use the right word/ words	(Js'. vs.)
McCarthy, Merier & Rinderer (1985)	3. The ability to compose a sentence/ a paragraph/an essay	(Js'. vs.)
McCarthy, Merier & Rinderer (1985)	4. The ability to punctuate a passage on one page	(Js'. vs.)
McCarthy, Merier & Rinderer (1985)	5. The ability to weave sentences into a paragraph to produce a theme	(Js'. vs.)
(Graham & Harris, 1998a)	~~6. The ability to write a story, e.g. writing down the feelings of a main character, describing the setting~~	(Js'. vs.)
Pajares & Johnson, 1994; Shell et al (1989, 1995)	~~7. The ability to complete a term paper~~	(Js'. vs.)
Pajares & Johnson, 1994; Shell et al (1989, 1995)	~~8. The ability to make up a short a little fiction story~~	(Js'. vs.)

Pajares & Johnson, 1994; Shell et al (1989, 1995)	~~9. The ability to write composition in a letter form to a friend~~	(Js'. vs.)
Southern Illinois (2007)	~~10. The ability to respond fully to an assignment~~	(Js'. vs.)
Southern Illinois (2007)	11. The ability to show proper critical thinking	(Js'. vs.) Although important, this skill will be excluded as it takes too much time to teach.
Southern Illinois (2007)	12. The ability to present a clear topic statement	(Js'. vs.)
Southern Illinois (2007)	~~13. The ability to express the aim manifestly in a convincing way~~	(Js'. vs.)
Southern Illinois (2007)	14. The ability to use facts in a good sequence	(Js'. vs.) Although important, this skill will be excluded as it overlaps with micro-skill no. 27.
Southern Illinois (2007)	15. The ability to provide supporting details	(Js'. vs.)
Southern Illinois (2007)	16. The ability to show a unity, focus and organization	(Js'. vs.) Although important, this part of the micro-skill will be excluded as it overlaps with micro-skill no. 57.
Southern Illinois (2007)	17. The ability to use suitable language appropriate to the audience	(Js'. vs.)
Southern Illinois (2007)	~~18. The ability to resort to decisive sources when necessary~~	(Js'. vs.)
Southern Illinois (2007)	19. The ability to document and use citations properly	(Js'. vs.) Although important, this skill will be excluded as it is actually taught in a separate research course at the Ismailia Medical School.

Southern Illinois (2007)	20. The ability to use grammar, punctuation, words, spelling and format perfectly	(Js'. vs.) Although important, this part of the skill will be excluded as it overlaps with micro-skills no. 1, 4, 2, 35 & 55.
Southern Illinois (2007)	21. The ability to display original and creative thinking	(Js'. vs.) Although important, this skill will be excluded as it is not language-based.
Fenapupae Confereren ce (2007)	22. Following conventions of spelling, punctuation and capitalization	(Js'. vs.) Although important, this skill will be excluded as it overlaps with micro-skill no. 55 and 4.
Fenapupae Confereren ce (2007) /	23. Using an acceptable core vocabulary and appropriate word order	(Js'. vs.)
Fenapupae Confereren ce (2007)	24. Using acceptable grammatical systems (i.e. tense, agreement), patterns and rules	(Js'. vs.) Although important, this skill will be excluded as it overlaps with micro-skill no. 1.
Fenapupae Confereren ce (2007)	~~25. Expressing a particular meaning in different grammatical forms, with a variety of sentence structures~~	(Js'. vs.)
Fenapupae Confereren ce (2007) //	~~26. Using cohesive devices in written discourse~~	(Js'. vs.)
Fenapupae Confereren ce (2007)	27. Conveying links and connections between events.	(Js'. vs.)
	28. Communicating such relations as main ideas, supporting ideas, new information, given information, generalization and exemplification	(Js'. vs.)

Fenapupae Confererence (2007)	~~29. Distinguishing between literal and implied meanings when writing~~	(Js'. vs.)
Fenapupae Confererence (2007)	~~30. Correctly conveying culturally specific references in the context of the written text~~	(Js'. vs.)
Fenapupae Confererence (2007)	~~31. Developing and use a battery of writing strategies, such as accurately assessing the audience's interpretation, using pre-writing devices, using paraphrases and synonyms, soliciting peer and instructor feedback and using feedback, for revising and editing~~	(Js'. vs.)
Orwig (1999)	32. Using the orthography correctly, including the script, and spelling and punctuation conventions.	(Js'. vs.) Although important, this skill will be excluded as it overlaps with micro-skills no. 42, 55, & 4.
Orwig (1999)	33. Using the correct forms of words. This may mean using forms that express the right tense, or case or gender	(Js'. vs.) Although important, this skill will be excluded as it overlaps with micro-skill no. 1.
Orwig (1999)	34. Putting words together in correct word order.	(Js'. vs.) Although important, this skill will be excluded as it overlaps with micro-skill no. 23.
Orwig (1999) Raneeli (1998)	35. Using vocabulary correctly	(Js'. vs.) Although important, this skill will be excluded as it overlaps with micro-skill no. 2.

Orwig (1999)	36. Using the style appropriate to the genre and audience	(Js'. vs.)
Orwig (1999)	37. Making the main sentence constituents, such as subject, verb, and object, clear to the reader	(Js'. vs.) Although important, this skill will be excluded as it overlaps with micro-skill no. 1.
Orwig (1999)	38. Making the main ideas distinct from supporting ideas or information	(Js'. vs.)
Orwig (1999)	39. Judging how much background knowledge the audience has on the subject and make clear what it is assumed they don't know	(Js'. vs.)
Orwig (1999)	40. The ability to communicate a message or information	(Js'. vs.)
Orwig (1999)	41. Recognizing the linear sequence of sounds	(Js'. vs.)
Orwig (1999)	42. Mastering writing motions and letter shapes	(Js'. vs.)
Orwig (1999)	43. Recognizing the need for space between words	(Js'. vs.)
Orwig (1999)	44. Writing quickly	(Js'. vs.)
Orwig (1999)	45. The ability to write freely what you want to write	(Js'. vs.)
	46. the ability to make the text coherent, so that other people can	(Js'. vs.) Although important, this micro-skill will be excluded as it overlaps with skills no. 16 & 27.

	follow the development of the ideas	
Ranelli (1998)	47. Writing effective conclusions and introductions	(Js'. vs.)
Ranelli (1998)	~~48. Writing a one- or two-sentence answer to a specific test question~~	(Js'. vs.)
Ranelli (1998)	~~49. Composing a one- to two-page essay in answer to a question~~	(Js'. vs.)
Ranelli (1998)	50. Writing a term paper of 15 to 20 pages	Although important, this skill will be excluded as it is taught in a separate research course at the Ismailia Medical School.
Ranelli (1998)	51. Writing a scholarly article for publication in a professional journal in your field	(Js'. vs.) Although important, this skill will be excluded as it is taught in a separate research course at the medical school.
Ranelli (1998)	~~52. Writing a letter to the editor of the daily newspaper about a health-care topic~~	(Js'. vs.)
Ranelli (1998)	~~53. Writing useful class notes~~	(Js'. vs.)
Ranelli (1998)	54. Preparing a paper that reads as a balanced account on a controversial topic	(Js'. vs.)
Ranelli (1998)	~~55. Composing a paper summarizing a reading assignment~~	(Js'. vs.)
Ranelli (1998)	56. Correctly spelling all words in a one-page paper	(Js'. vs.)
Ranelli (1998)	57. Correctly punctuating a one-page paper	(Js'. vs.) Although important, this skill will be excluded as it overlaps with micro-skill no. 4.
Ranelli	58. Writing a paper with good overall organization (e.g.,	(Js'. vs.)

(1998)	ideas in order, effective transitions)	
Ranelli (1998)	59. Correctly using plurals, verb tenses, prefixes, and suffixes	(Js'. vs.) Although important, this skill will be excluded as it overlaps with micro-skill no. 1.
Ranelli (1998)	60. Research the subject	(Js'. vs.) Although important, this skill will be excluded as it is taught in a separate research course at the medical school.
Ranelli (1998)	61. Correctly using parts of speech (that is, nouns, verbs, adjectives)	(Js'. vs.) Although important, this skill will be excluded as it overlaps with micro-skill no. 1.
Ranelli (1998)	62. Identifying problems to be solved that the topic suggests	(Js'. vs.)
Ranelli (1998)	63. Making clear statements of ideas	(Js'. vs.) Although important, this skill will be excluded as it overlaps with micro-skill no. 38.
Ranelli (1998)	64. Avoiding common grammatical errors of standard written English	(Js'. vs.)
Ranelli (1998)	65. Quoting sources accurately	(Js'. vs.) Although important, this skill will be excluded as it is taught in a separate research course by the medical school.

Ranelli (1998)	66. Writing effectively under pressure	(Js'. vs.)
Ranelli (1998)	67. Paraphrasing properly	(Js'. vs.)
Ranelli (1998)	68. Collaborating with others during reading and writing on a given project	(Js'. vs.)
Ranelli (1998)	69. Revising to improve word choice	(Js'. vs.)
Ranelli (1998)	70. Revising awkward phrasing and vague language	(Js'. vs.)
Ranelli (1998)	71. Choosing words that a reader can understand	(Js'. vs.)
Ranelli (1998)	72. Knowing how the reader will use your document	(Js'. vs.)

Ranelli (1998)	73. Stating the purpose of the writing to the reader	(Js'. vs.)
Ranelli (1998)	74. Following a revision strategy to select, add, substitute, or delete information when the prospective readers to the paper have changed	(Js'. vs.)

From the above, it has been found that *56* micro-skills are important to the medical students (regardless of being entirely later represented in the writing module).

Appendix C1

Initial List of the Micro-Skills

Initial List of the Micro-Skills (36 micro-skills) to be represented in the writing module

1. The ability to use grammar successfully
2. The ability to use the right word/ words
3. The ability to compose a sentence/ a paragraph/an essay
4. The ability to punctuate a passage on one page
5. The ability to weave sentences into a paragraph to produce a theme
6. The ability to present a clear topic statement
7. The ability to provide supporting details
8. The ability to show unity and focus
9. The ability to use suitable language appropriate to the audience
10. Using an acceptable core vocabulary and appropriate word order
11. Conveying links and connections between events.
12. Communicating such relations as main ideas, supporting ideas, new information, given information, generalization and exemplification
13. Using the style appropriate to the genre and audience
14. Making the main ideas distinct from supporting ideas or information
15. Judging how much background knowledge the audience has on the subject and make clear what it is assumed they don't know

16. The ability to use format perfectly
17. The ability to communicate a message or information
18. Mastering writing motions and letter shapes
19. Recognizing the need for space between words
20. Writing quickly
21. Preparing a paper that reads as a balanced account on a controversial topic
22. Correctly spelling all words in a one-page paper
23. Writing a paper with good overall organization (e.g., ideas in order, effective transitions)
24. Identifying problems to be solved that the topic suggests
25. Avoiding common grammatical errors of standard written English – to use the right register
26. Writing freely what you want to write
27. Writing introductions, conclusions, paragraph structure,
28. Paraphrasing properly
29. Revising to improve word choice
30. Writing effectively under pressure
31. Collaborating with others Collaborating with others during reading and writing on a given project
32. Revising awkward phrasing and vague language
33. Choosing words that a reader can understand
34. Knowing how the reader will use your document
35. Stating the purpose of the writing to the reader
36. Following a revision strategy to select, add, substitute, or delete information when the prospective readers to the paper have changed

APPENDIX C2

FURTHER EXCLUSION OF MICRO-SKILLS

Further exclusion of micro-skills and reasons why they are not selected for inclusion in an essay writing module

The number of the micro-skills to be represented in the writing module was 35 micro-skills. However, the following micro-skills (6) were taken out for the following reasons:

1. Paraphrasing properly	Overlap with a skill from another course taught to the students.
2. Knowing how the reader will use your document	Too hard to assess
3. Following a revision strategy to select, add, substitute, or delete information when the prospective readers of the paper have changed	Not a concern as it does not cope with the purposes of the study (no audience will change)
4. Using suitable language appropriate to the audience	Repetitive with micro-skill 2 below
5. Using an acceptable core vocabulary and appropriate word order	Embedded in micro-skills 2 & 1 below
6. Communicate such relations as main ideas, supporting ideas, new information, given information, generalization and exemplification	Embedded in micro- skills no.3, 5, 6, 8, 9 below
7. Revise awkward phrasing and vague language	Embedded in micro-skill no. 21

The remaining skills to be represented are the following one:

Micro-skill
1. The ability to use grammar successfully
2. The ability to use the right word/ words
3. The ability to compose a sentence/ a paragraph/an essay
4. The ability to punctuate a passage on one page
5. The ability to weave sentences into a paragraph to produce a theme
6. The ability to present a clear topic statement

7. The ability to provide supporting details
8. The ability to show a unity and focus
9. Judging how much background knowledge the audience has on the subject and make clear what it is assumed they don't know
10. The ability to communicate a message or information
11. Mastering writing motions and letter shapes
12. Recognizing the need for space between words
13. Writing quickly
14. The ability to write freely what you want to write
15. Writing introductions, structure & conclusions
16. Preparing a paper that reads as a balanced account on a controversial topic
17. Correctly spelling all words in a one-page paper
18. Identifying problems to be solved that the topic suggests
19. Convey links and connections between events
20. Using the style appropriate to the genre and audience
21. Revise to improve word choice
22. Making the main ideas distinct from supporting ideas or information
23. The ability to use format perfectly
24. Avoiding common grammatical errors of standard written English - to use the right register
25. Writing effectively under pressure
26. Collaborating with others during reading and writing on a given project
27. Writing a paper with good overall organization (e.g. ideas in order, effective transitions
28. Choosing words that a reader can understand
29. Stating the purpose of writing to the reader

APPENDIX D

SELECTED MICRO-SKILLS AND

THEIR RELATIVE REPRESENTATION WEIGHTS

The Micro-Skills in the Module and their relative representation weights and, thus, maximum assessment points

Micro-skill	**Relative representation weight points to be considered when preparing the *module content* (based on micro-skill frequency in literature and the average total points jurors gave on the micro-skill questionnaire[1])**	**Maximum assessment points for each micro-skill to be considered when assessing the pre-post-test.[2]**
1. The ability to use grammar successfully	20	4
15) The ability to use the right word/ words	16	3
16) The ability to compose a sentence/ a paragraph/an essay	11	2
17) The ability to punctuate a passage on one page	12	2
18) The ability to weave sentences into a paragraph to produce a theme	11	2
19) The ability to present a clear topic statement	11	2
20) The ability to provide supporting details	9	2
21) The ability to show a unity and focus	10	2
22) Judging how much background knowledge the audience has on the subject and make clear what it is assumed they do not know	8	1.5
23) The ability to communicate a message or information	8	1.5
24) Mastering writing motions and letter shapes	8	1.5

25) Recognizing the need for space between words	8	1.5
26) Writing quickly	8	1.5
27) The ability to write freely what you want to write	8	1.5
28) Writing introductions, structure & conclusions	8	1.5
29) Preparing a paper that reads as a balanced account on a controversial topic	19	4
30) Correctly spelling all words in a one-page paper	10	2
31) Identifying problems to be solved that the topic suggests	8	1.5
32) Convey links and connections between events.	10	2
33) Using the style appropriate to the genre and audience	8	1.5
34) Revise to improve word choice	17	3
35) Making the main ideas distinct from supporting ideas or information	10	2
36) The ability to use format perfectly	11	2
37) Avoiding common grammatical errors of standard written English - to use the right register	19	4
38) Writing effectively under pressure	7	1
39) Collaborating with others during reading and writing on a given project	8	1.5
40) Writing a paper with good overall organization (e.g. ideas in order, effective transitions	11	2
41) Choosing words that a reader can understand	17	3
42) Stating the purpose of writing to the reader	11	2

1. The average total points jurors gave on the micro-skill questionnaire is calculated by the following equation: total points/ maximum cell points (4). Results were approximated to the nearest unit.
2. These are based on a percentage of the module representation weight points, i.e. a representation weight divided by five.

APPENDIX D1

MARKING CODES

Marking acronyms and abbreviation codes used in marking the writing micro-skill pre post test

WC Word choice (right word)
Voc. Vocabulary (right word)
LC Letter case (punctuation)
WA Word affix (spelling)
Punc. Punctuation
Spell. Spelling
WO Word order
WF Word form (spelling/ grammar)
V. Verb(grammar)
VF Verb Form (grammar)
LM Letter motion

APPENDIX E

THE WRITING TEST VALIDITY QUESTIONNAIRE

Dear Juror,

This is a test validity questionnaire. It, thus, aims at knowing your valuable opinions whether or not the following two writing questions can

assess the below-mentioned writing micro-skills, i.e. by knowing whether you strongly agree, agree, somewhat agree, or do not agree. There is also a space for your comments and suggestions. Your efforts are highly appreciated.

The test

In an essay format, answer each of the following questions. You are allowed to seek any help from your colleague.

1. What do you hope to achieve by the year 2020? Explain, analyse and criticise.(Min. 300 words/50 minutes)

1. Sometimes, anger is beneficial. Explain this statement from any logical point of view? Also, state whether you agree or disagree. (Min. 300 words/50 minutes)

2.

Micro-skills

Writing micro-skill	Strongly agree		Agree		Somewhat agree		Do not agree	
	Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2
1. The ability to use grammar successfully								
2. The ability to use the right word/ words								
3. The ability to compose a sentence/ a paragraph/an essay								
4. The ability to punctuate a passage on one page								
5. The ability to weave sentences into a paragraph to produce a theme								
6. The ability to present a clear topic statement								

7. The ability to provide supporting details								
8. The ability to show a unity and focus								
9. Judging how much background knowledge the audience has on the subject and make clear what it is assumed they don't know								
10. The ability to communicate a message or information								
11. Mastering writing motions and letter shapes								
12. Recognizing the need for space between words								
13. Writing quickly								

14. The ability to write freely what you want to write								
15. Writing introductions, structure & conclusions								
16. Preparing a paper that reads as a balanced account on a controversial topic								

17. Correctly spelling all words in a one-page paper								
18. Identifying problems to be solved that the topic suggests								
19. Convey links and connections between events.								
20. Using the style appropriate to the genre and audience								

21. Revise to improve word choice								
22. Making the main ideas distinct from supporting ideas or information								

23. The ability to use format perfectly								
24. Avoiding common grammatical errors of standard written English - to use the right register								
25. Writing effectively under pressure								
26. Collaborating with others during reading and writing on a given project								
27. Writing a paper with good overall organization (e.g. ideas in order, effective transitions								
28. Choosing words that a reader can understand								
29. Stating the purpose of writing to the reader								

Comments & Suggestions

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APPENDIX F

THE WRITING TEST

The Writing Test

Making use of all the skills you have learnt in the course recently delivered at *this* school answer the following two questions in an essay format: (You may ask one of your colleagues for any help.)

2. What do you hope to achieve by the year 2020? (Min. 300 words/ 50 minutes)

3. Sometimes, anger is beneficial. Explain this statement from any logical point of view? Also, state whether you agree or disagree. (Min. 300 words/50 minutes)

Good Luck!

APPENDIX G

THE WRITING ATTITUDE SURVEY

Please, choose the case which suits you now

How confident are you that you can do the following? **unconfident** somewhat confident **confident** very confident				
Compose a one- to two-page essay in answer to a question				
Write a letter to the editor of the daily newspaper about a health-care topic				
Write useful class notes				
Prepare a paper that reads as a balanced account on a controversial topic				
Compose a paper summarizing a reading assignment				
Correctly spell all words in a one-page paper				
Correctly punctuate a one-page paper				
Correctly use parts of speech (that is, nouns, verbs, adjectives)				
Correctly use plurals, verb tenses, prefixes, and suffixes				
Write a paper with good overall organization (e.g., ideas in order, effective transitions)				
Choose words that a reader can understand				
Know how the reader will use your document				
Use vocabulary appropriate to the subject and purpose of the writing				
State the purpose of the writing to the reader				
Research the subject				
Identify problems to be solved that the topic suggests				
Make clear statements of ideas				
Avoid common grammatical errors of standard written English				
Quote sources accurately				
Write effective introductions and conclusions				
Write effectively under pressure				
Paraphrase properly				
Collaborate with others during reading and writing on a given project				
Revise to improve word choice				
Revise awkward phrasing and vague language				
Follow a revision strategy to select, add, substitute, or delete information when the prospective readers to the paper have changed				

APPENDIX H

IWB ATTITUDE QUESTIONNAIRE

Determine the extent to which you agree to the following statements:

Extremely	Mostly	To some extent	Barely	N/A Never

8. The SMART Board was useful in the teaching/learning of essay writing
9. The SMART Board was easy to see and interact with
10. The SMART Board was an unconventional way of presenting information
11. The SMART Board as a tool for teaching/learning helped with improving my essay writing
12. The SMART Board had unusual capabilities
13. The navigation and the switch over between screens on the SMART Board was easy
14. what I want to add is…………………………………………………….

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APPENDIX I

SESSION EVALUATION

Session Evaluation

1. Did you like today's' session? If you did, what specifically did you like about it and what did you not?

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2. Was the material delivered useful to you? If so, in what way?

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3. Was the teaching time relevant?

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4. Was the teaching done properly?

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5. Did the material cover everything you expect? If not why?

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6. Do you feel you had your time to participate?

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7. Was the teaching environment appropriate? If not, what in specific was not?

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8. Feel free to add any comment in the space provided below.

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APPENDIX J

THE WRITING MODULE VALIDITY QUESTIONNAIRE

(The Writing Module Validity Questionnaire)

Dear Juror (Prof., Dr., Mrs., Mr,…),

This questionnaire includes a number of writing micro-skills. It is a part of a study investigating essay writing skills. As well as the skills, the questionnaire contains a suggested writing module which should contain the skills in order to be taught. The questionnaire asks for your opinions about the extent to which the skills are represented in the module according to the below representation weights and their percentages. You are then kindly requested on a scale of five (1-4) to state how much the skills are represented in the module. This can be done by putting down the rating you give beside each skill after looking at the relevant part/s in the module.

When you finish, please feel free to add any **comments and suggestions** at the end of the questionnaire. Your efforts are highly appreciated.

1. Desired representation weights/ percentages (please, have a look)

Micro-skill	Desired representation weight points & percentages
8. The ability to use grammar successfully	20= %6.40
9. The ability to use the right word/ words	16=%5.12
10. The ability to compose a sentence/ a paragraph/an essay	11=%3.52
11. The ability to punctuate a passage on one page	12=%3.84
12. The ability to weave sentences into a paragraph to produce a theme	11=%3.52
13. The ability to present a clear topic statement	11=%3.52
14. The ability to provide supporting details	9=%2.88
15. The ability to show a unity and focus	10=%3.2
16. Judging how much background knowledge the audience has on the subject and make clear what it is assumed they don't know	8=%2.56
17. The ability to communicate a message or information	8=%2.56
18. Mastering writing motions and letter shapes	8=%2.56
19. Recognizing the need for space between words	8=%2.56
20. Writing quickly	8=%2.56
21. The ability to write freely what you want to write	8=%2.56
22. Writing introductions, structure & conclusions	8=%2.56
23. Preparing a paper that reads as a balanced account on a controversial topic	19=%6.08

24. Correctly spelling all words in a one-page paper	10=%3.2
25. Identifying problems to be solved that the topic suggests	8=%2.56
26. Convey links and connections between events.	10=%3.2
27. Using the style appropriate to the genre and audience	8=%2.56
28. Revise to improve word choice	17=%5.44
29. Making the main ideas distinct from supporting ideas or information	10==%3.2
30. The ability to use format perfectly	11=%3.52
31. Avoiding common grammatical errors of standard written English - to use the right register	19=%6.08
32. Writing effectively under pressure	7=%2.24
33. Collaborating with others during reading and writing on a given project	8=%2.56
34. Writing a paper with good overall organization (e.g. ideas in order, effective transitions	11=%3.52
35. Choosing words that a reader can understand	17=%5.44
36. Stating the purpose of writing to the reader	11=%3.52

2. The Module (Please, take a look at the accompanying module)

3. Your opinion (Please, write your opinion in the appropriate cell).

Micro-skill	**Degree of micro-skill representation in the module, as seen by the juror (on a scale of 1-4)**

1. The ability to use grammar successfully	
2. The ability to use the right word/ words	
3. The ability to compose a sentence/ a paragraph/an essay	
4. The ability to punctuate a passage on one page	
5. The ability to weave sentences into a paragraph to produce a theme	
6. The ability to present a clear topic statement	
7. The ability to provide supporting details	
8. The ability to show a unity and focus	
9. Judging how much background knowledge the audience has on the subject and make clear what it is assumed they don't know	
10. The ability to communicate a message or information	
11. Mastering writing motions and letter shapes	
12. Recognizing the need for space between words	
13. Writing quickly	
14. The ability to write freely what you want to write	
30. Writing introductions, structure & conclusions	
31. Preparing a paper that reads as a balanced account on a controversial topic	
32. Correctly spelling all words in a one-page paper	
33. Identifying problems to be solved that the topic suggests	
34. Convey links and connections between events	
35. Using the style appropriate to the genre and audience	
36. Revise to improve word choice	
37. Making the main ideas distinct from supporting	

ideas or information	
38. The ability to use format perfectly	
39. Avoiding common grammatical errors of standard written English - to use the right register	
40. Writing effectively under pressure	
41. Collaborating with others during reading and writing on a given project	
42. Writing a paper with good overall organization (e.g. ideas in order, effective transitions	
43. Choosing words that a reader can understand	
44. Stating the purpose of writing to the reader	

Comments

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APPENDIX K

"THE WRITING MODULE

FOR MEDICAL SCHOOL STUDENTS"

The Writing Module
for Medical School Students

Prepared by
Emad Albaaly
School of Education – Durham University
2008

Introduction

This is an essay writing module aiming at conveying the meaning of essay writing to you and at providing you with practice on this type of writing. It offers material on various skills experts see they are important to the medical students.

Then, try to make the best use of material by following the guidance provided by your instructors.

Objectives of the module

This module aims at improving the writing micro-skills in the table below:

	Micro-skill
14.	The ability to use grammar successfully
15.	The ability to use the right word/ words
3.	The ability to compose a sentence/ a paragraph/an essay
4.	The ability to punctuate a passage on one page
5.	The ability to weave sentences into a paragraph to produce a theme
6.	The ability to present a clear topic statement
7.	The ability to provide supporting details
8.	The ability to show a unity and focus
9.	Judging how much background knowledge the audience has on the subject and make clear what it is assumed they don't know
10.	The ability to communicate a message or information
11.	Mastering writing motions and letter shapes
12.	Recognizing the need for space between words
13.	Writing quickly
14.	The ability to write freely what you want to write
45.	Writing introductions, structure & conclusions
46.	Preparing a paper that reads as a balanced account on a controversial topic
47.	Correctly spelling all words in a one-page paper
48.	Identifying problems to be solved that the topic suggests
49.	Convey links and connections between events
50.	Using the style appropriate to the genre and audience
51.	Revise to improve word choice
52.	Making the main ideas distinct from supporting ideas or information
53.	The ability to use format perfectly
54.	Avoiding common grammatical errors of standard written English - to use the right register
55.	Writing effectively under pressure
56.	Collaborating with others during reading and writing on a given project
57.	Writing a paper with good overall organization (e.g. ideas in order, effective transitions
58.	Choosing words that a reader can understand
59.	Stating the purpose of writing to the reader

Table of contents

Session **Page no.**

Session One

Task One (Skills 1, 2, 24, 26, &28)
Grammar, vocabulary, and vocabulary revision

- Identify the erroneous word or words in each of the following sentences. Work with your partner.

1. It is proving less expensive and more profitably for drug makers to advertise directly to patients.

2. Sapphires weighing as much as three pounds have on occasion mined.

3. Like frogs, lizards can be found on all others continents except Antarctica.

4. Banks, savings and loans, and finance companies have recently done home equity loans with greater frequency than ever before.

5. In recent survey of Americans, more than 75 % expressed the view that the government it should take an active role in health care.

6. Unlike architects of the early modern movement, Alvar Aalto stressed

informality, personal express, romanticism, and rationality in his work.

7. Color blindness might exist at birth or may occur later as a result for disease or injury.

8. The sheep was good and they ate all the required amount of grass.

Adapted from Deborah Phillips (1996a). Longman Preparation Course For The TOEFL Test: Wesley Publishing Co. Inc.

Task Two (Skill 19)
Spelling focus (plurals)

Some nouns in English have irregular plurals and these can cause confusion in the written expression. The irregular forms which are the most problematic are plural forms which do not end in 's'.

Many criteria was used to evaluate the performers.
In this example the plural noun 'criteria' looks singular as it does not end in s; you might incorrectly assume that it is singular because there is no ending: 's'. However, criteria is plural, so the singular verb used is incorrect. The verb should be the plural form "were".

The following chart lists the irregular plurals that you should become familiar with:

tooth teeth mouse mice
foot feet goose geese
fish fish sheep sheep
deer salmon salmon trout trout
analysis analyses diagnosis diagnoses synthesis syntheses
axis axes hypothesis hypotheses thesis theses
crisis crises parenthesis parentheses
datum data criterion criteria
alumnus alumni fungus fingi stimulus stimuli
cactus cacti radius radii
bacillus bacilli syllabus syllabi

Adapted from Deborah Phillips (1996a). Longman Preparation Course For The TOEFL Test: Wesley Publishing Co. Inc.

Now, work with your partner to fill in the spaces with the right word. The words in the brackets are only a clue, but they are not right

1. My tooth……(hurt).
2. There are two……(mouse) in our house.
3. I want two……..(fish), please.
4. I don't eat …….(many) salmon.
5. Our economy is bad. It undergoes many…….
6. This ……is hard. It is not educational at all and does not benefit me.
7. The……they have collected needs revision. They will have to interview the people again.

(Albaaly, 2008)

Task Three (Skill 21)
Formal or informal. Why? Why not
Identify whether the following sentences are formal or informal

1. I don't eat …….(many) salmon.
2. I've got a bike to ride.
3. There were many people.
4. There was a lot of people
5. I'll take a shower.
6. I got a headache.

(Albaaly, 2008)

Task Four (Skills 3 & 4)
Teaching paragraph writing: 1) sentence writing with proper punctuation

Bring your brain!
Getting the supplies in order is easy but, where do you go now?
For starters.....Think **ORANGE**

Using "short" words, list three things you already know about an orange.

Your list might look like this:

	tastes good
	bumpy skin
	must peel to eat

Now S T R E T C H those words to make three sentences

1	A cold orange tastes good on a hot summer day.
2	An orange has a bumpy skin that smells good.
3	You must peel an orange to eat it.

Don't forget to use a capital letter at the beginning of each sentence and a punctuation mark (., ?, or !) at the end!

Let's review the **Orange Method for Sentence Writing!**

* Begin by listing what you know - use short words

* S T R E T C H your short words into good sentences

* Use a capital letter at the beginning of each sentence and use a proper punctuation (i.e. ., ?, or!) to end the sentence.

Try it out on these samples

	Write three sentences about a person you know.
	Write three sentences about your school.
	Write three sentences about your desk.

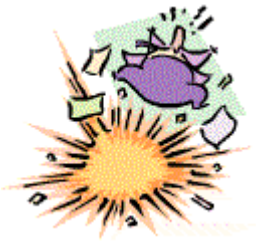
Selected from
http://www.tustin.k12.ca.us/cyberseminar/paragraph.htm

Session Two

Task Two (Skills 3, 4, 5, 6,7, 8, 9, &16)

Paragraph writing: 2) sentence writing with proper punctuation, topic sentences, supporting details, & conclusions, etc.

How to write an "Apple" paragraph



Do you ever feel like you are going to explode

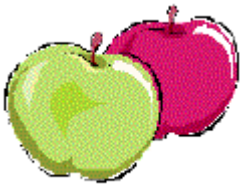
When your instructor asked you to write a paragraph, did you feel your heart pounding or your face getting red if your teacher tells you to write a **GOOD** paragraph?

Don't despair now...here is a way to do it painlessly and with excellent results.
To begin.....consider the apple

Using "short" words list at least five things you already know about the apple.
Your list might look like this:

Apples

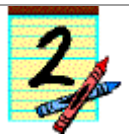
	eat them

	different colors
	grow on trees
	great in a pie
	some have worms

Now S T R E T C H the words on your list into at least five sentences.

You can eat an apple.
Apples come in different colors.
Apples grow on trees.
I ate an apple pie once.
Sometimes an apple has a worm in it.

Now let's put the sentences in a paragraph!
First, think about which sentence you want to come first, second, third etc...
How about this order?

	Apples come in different colors.
	Apples grow on trees.
	You can eat an apple.
	I ate an apple pie.
	Sometimes an apple has a worm in it.

Ok, let's try it out! Let's connect the sentences into a paragraph with indention, capital letters at the beginning of each sentence and a punctuation mark at the end of each sentence.

Apples come in different colors. Apples grow on trees. You can eat an apple. I ate an apple pie. Sometimes an apple has a worm in it.

Well, our sentences are in a paragraph form. We have indented and remembered to use punctuation, but it isn't a good paragraph yet.

Consider what you remember about paragraphs!

Paragraphs have three parts

The box is like a topic sentence. The topic sentence "holds" the detail sentences

The detail sentences tell the reader information about the topic. Our topic is "apples" so each detail sentence should tell the reader more information about apples.

1.Detail sentence
2.Detail Sentence
3.Detail Sentence
Add more detail sentences as needed

I don't think we have a topic sentence yet, do you? "Apples come in different colors." seems more like a detail sentence to me. A topic sentence should introduce the entire paragraph to the reader.

1. Apples come in different colors.
2. Apples grow on trees.
3. You can eat an apple.
4. I ate an apple pie.
5. Sometimes an apple has a worm in it.

How about this:

Let me tell you what I know about apples.

That seems like a better topic sentence, doesn't it?

Topic Sentence	Let me tell you what I know about apples.
Detail Sentence	Apples come in different colors.
Detail Sentence	Apples grow on trees.
Detail Sentence	You can eat an apple.
Detail Sentence	I ate an apple pie.
Detail Sentence	Sometimes an apple has a worm in it.
Conclusion or Closing Sentence	

I noticed that two of the detail sentences start with the same word. I think we can change them into something more interesting by combining the two simple sentences into one compound sentence using the conjunction "and" like this:

Topic Sentence	Let me tell you what I know about apples.
Detail Sentence	Apples come in different colors.
Detail Sentence	Apples grow on trees.
Detail Sentence	You can eat an apple.
Detail Sentence	I ate an apple pie.
Detail Sentence	Sometimes an apple has a worm in it.
Conclusion or Closing Sentence	

Apples come in different colors **and** they grow on trees.

Topic Sentence	Let me tell you what I know about apples.
Detail Sentence	Apples come in different colors and they grow on trees.
Detail Sentence	You can eat an apple.
Detail Sentence	I ate an apple pie.
Detail Sentence	Sometimes an apple has a worm in it.
Conclusion or Closing Sentence	

Now look at detail sentences #2 and #3. Did you notice that the verb "eat" is used in a **present tense** (eat) in #2 sentence and **past tense** "ate" in #3?

As a good paragraph writer, you have to be careful to make sure that you always have

"**verb agreement**" throughout your paragraph. In other words, you have to make sure that everything in the paragraph takes place in the same time zone: **past, present or future**. I think we will choose to make our paragraph in the **present tense**, so that means we have to make a small change to detail sentence #3.

Topic Sentence	Let me tell you what I know about apples.
Detail Sentence	Apples come in different colors and they grow on trees.
Detail Sentence	You can eat an apple.
Detail Sentence	I ate an apple pie.
Detail Sentence	Sometimes an apple has a worm in it.
Conclusion or Closing Sentence	

I ate an apple pie + present tense = I like to eat apple pie.

Topic Sentence	Let me tell you what I know about apples.
Detail Sentence	Apples come in different colors and they grow on trees.
Detail Sentence	You can eat an apple.
Detail Sentence	I like to eat apple pie.
Detail Sentence	Sometimes an apple has a worm in it.
Conclusion or Closing Sentence	

I think we can combine those two small sentences into a nice complex sentence now with just a little thought.

You can eat an apple. I like to eat apple pie. You can eat an fresh apple, but I like to eat them in apple pie.

Think: What kind of apple pie?

Dutch?

hot?

homemade?

These are adjectives that will make our sentence SHOW not TELL the reader what we want to say!

You can eat an fresh apple, **but** I like to eat them in homemade apple pie.

You can eat an fresh apple...

Wait a minute... what is wrong with that? It sounds funny.

Did you remember the article rule for "an"? An is an article (part of speech). You use "an" in front of words which begin with a vowel. Use the article "a" in front of words that begin with a consonant like "fresh".

so.....

You can eat a fresh apple, but I like to eat them in apple pie.

Now, let's have a look at sentence #4. We need to do a little work on it too. Let's rework the verb "has" to make it an action verb instead of a being verb.

Topic Sentence	Let me tell you what I know about apples.
Detail Sentence	Apples come in different colors and they grow on trees.
Detail Sentence	You can eat a fresh apple, but I like to eat them in homemade apple pie.
Detail Sentence	Sometimes an apple has a worm in it.
Conclusion or Closing Sentence	

Sometimes a worm **is living** in the apple.

Good job! The words "is living" are present tense, just like the rest of the sentences in our paragraph!

CHECK IT OUT!

Topic Sentence	Let me tell you what I know about apples.
Detail Sentence	Apples come in different colors and they grow on trees.
Detail Sentence	You can eat a fresh apple, but I like to eat them in homemade apple pie.
Detail Sentence	Sometimes a worm is living in the apple.
Conclusion or Closing Sentence	

Finally, we are ready for the **Conclusion or Closing Sentence**. It doesn't matter whether you call the last sentence of a paragraph a

"conclusion" or "closing" sentence. They both mean the same thing. This is the end of your paragraph and you are letting the reader know it is the end.

Do you remember the "paragraph box" from above?

Paragraphs are like boxes. They have three parts: **a topic sentence** (which is like the box), **detail sentences** (which are the present inside the box), and the **conclusion or closing sentence** (which is like a bow that ties the whole thing together).

Our paragraph has a great "box" or topic sentence: Let me tell you what I know about apples.

Our paragraph has a great set of "presents" or detail sentences inside the box: Apples come in different colours and they grow on trees. You can eat a fresh apple, but I like to eat them in a homemade apple pie. Sometimes a worm is living in the apple.

We need a great conclusion sentence: here is a good clue...look at the topic sentence and

think about how to "tie" it to the conclusion sentence.

Let me tell you what I know about apples. (topic sentence)
These are just a few things you should know about apples. (conclusion sentence)

Topic Sentence	Let me tell you what I know about apples.
Detail Sentence	Apples come in different colors and they grow on trees.
Detail Sentence	You can eat a fresh apple, but I like to eat them in homemade apple pie.
Detail Sentence	Sometimes a worm is living in the apple.
Conclusion or Closing Sentence	These are just a few things you should know about apples.

WE DID IT!

We created a paragraph with good sentences from ideas that we thought about in our own head!
The last part of writing our sentence is easy.

*Remember to indent the paragraph.

*Remember to capitalize each new sentence.

*Remember to end each sentence with the proper punctuation symbol.

Let me tell you what I know about apples. Apples come in different colors and they grow on trees. You can eat a fresh

apple, but I like to eat them in homemade apple pie. Sometimes a worm is living in the apple. These are just a few things you should know about apples.

red = topic sentence it is like a box which holds the details

blue = detail sentences, they are like the present inside the box. Help the reader by SHOWING not TELLING with good adjectives.

purple = conclusion or closing sentence which is like a bow holding the details and topic sentence together. It "ties" the paragraph together!

Here are our original ideas:

	eat them
	different colors
	grow on trees
	great in a pie
	some have worms

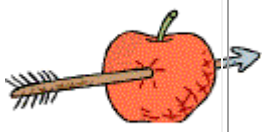
Look what we created!

Let me tell you what I know about apples. Apples come in different colours and they grow on trees. You can eat a fresh apple, but I like to eat them in homemade

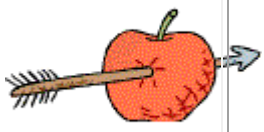
apple pie. Sometimes a worm is living in the apple. These are just a few things you should know about apples.

Selected from
http://www.tustin.k12.ca.us/cyberseminar/paragraph.htm

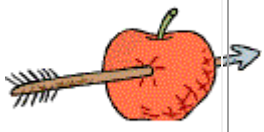
(Skills) Remember these simple steps to help you write a good paragraph!



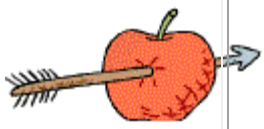
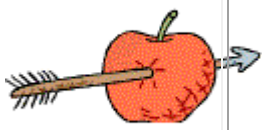
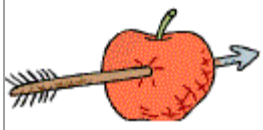
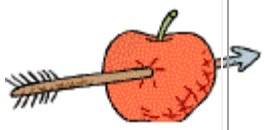
Decide on a topic

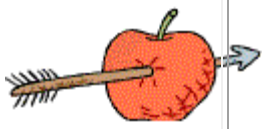


List things you know--use short words



Use your list of short words to create sentences

	Put the sentences in order
	Create a good topic sentence
	See what you can do to make your detail sentences SHOW not TELL the reader about your topic by combining sentences into complex or compound sentences, adding interesting adjectives and creating "mind pictures" for the reader
	Always make sure that spelling and especially verb agreement are in order
	Write a great conclusion or closing sentence by looking at the topic sentence and tying the detail sentences up in a neat box
	Don't forget to indent, capitalize beginning sentence words and always punctuate correctly



Read your paragraph and be proud!

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Session Three

Task (Skill 4)

Punctuation – use of commas

Punctuation

In thissession, we focus on those punctuation rules where, based on our experience. End of the sentence punctuation is not usually a problem. However, proper use of the next most common form of punctuation, the comma, is sometimes misunderstood. Writers often put commas where it feels right, which makes their written communication difficult to follow for those who know better (or feel differently). Correct use of commas can greatly increase the flow and understandability of your writing. Thus, today's lesson deals with the correct use of commas.

Commas

To correctly use commas, you must first understand basic sentence structures. For example, the difference between independent and dependent clauses should be clear. An understanding of these terms is fundamentally important in determining the correct placement of many commas. A short glossary at the end of this lesson defines these and other sentence parts for individuals needing a refresher on terminology. The comma rules discussed below are presented in abstract form and

immediately followed with several examples.

Commas separate independent clauses. A coordinating conjunction follows the comma and precedes the second independent clause. Sentences containing two independent clauses are sometimes called compound sentences.

Comma Rule 1: <Independent clause>, <conjunction> <independent clause>.

Example 1a: Section 162 permits taxpayers to deduct trade or business expenses, **and** section 165 allows losses to be deducted.

Example 1b: Sections 162 and 165 permit taxpayers to deduct trade or business expenses and allow taxpayers to deduct losses. (Note that the second clause is not independent, so no comma appears.)

Example 1c: Gross income includes all income from whatever source derived, but the Code excludes certain items such as life insurance proceeds.

Example 1d: The Code taxes all income from whatever source derived but excludes certain items such as life insurance proceeds. (Note that the second clause is not independent, so no comma is needed.)

Sentences with two independent clauses can be structured differently from suggested in Comma Rule 1. An alternative construction that may be appropriate is to remove the conjunction and replace the comma with a semicolon. (Semicolons are discussed later.) Still another possibility is to convert the compound sentence into two separate sentences.

Example 1e: Section 162 permits taxpayers to deduct trade or business expenses; section 165 allows

losses to be deducted.

Example 1f: Section 162 permits taxpayers to deduct trade or business expenses. Section 165 allows losses to be deducted.

When a dependent clause follows an independent clause, no comma separates them. However, a comma does follow a dependent clause introducing a sentence, identifying for the reader where the independent clause begins.

Comma Rule 2: Independent clause dependent clause.

Dependent clause, independent clause.

Example 2a: Section 151(a) allows individuals to deduct personal and dependency exemptions since the ability to pay tax is generally inversely related to family size.

Example 2b: Since the ability to pay tax is generally inversely related to family size, section 151(a) allows individuals to deduct personal and dependency exemptions.

Example 2c: Section 151(a) allows individuals to deduct personal and dependency exemptions if they otherwise meet all requirements.

Example 2d: If they otherwise meet all requirements, section 151(a) allows individuals to deduct personal and dependency exemptions.

Note that the dependent clauses in the examples above, "since the ability to pay tax is generally inversely related to family size" and "if they otherwise meet all requirements," cannot stand alone as separate sentences. Commas separate a dependent clause from the independent clause only when the former introduces the sentence.

Commas follow an introductory element preceding the independent clause. Introductory elements may be short or lengthy. In either case, using a comma separates the sentence's introduction from its main idea and, thus, makes the sentence easier to read.

Comma Rule 3:	Introductory element, independent clause.
Example 3a:	When organized abroad, a corporation not conducting business in the United States is taxable only on U.S. source income.
Example 3b:	During the most recent taxable year, the corporation redeemed 80 percent of its own stock and paid no tax.

Transitional expressions are special types of introductory elements. A comma follows transitional expressions at the beginning of a sentence (the natural location for transitions). Transitional expressions, however, may occur later in the sentence and, in these cases, often are offset with commas, but not always. When in doubt, start the sentence with the transitional expression and use a comma.

Comma Rule 4:	Transitional expression, independent clause.
Example 4a:	For example, Section 403(b) contributions can avoid taxation for many years.
Example 4b:	Section 403(b) contributions, however, can avoid taxation for many years.
Example 4c:	First, determine whether the merger is a taxable transaction.
Example 4d:	Determine whether the merger is a taxable transaction first.
Example 4e:	Thus, the exchange of life insurance policies is a nontaxable transaction.
Example 4f:	The exchange of life insurance policies, thus, is a nontaxable transaction.
Example 4g:	Also, the adjusted basis of the owner's interest in the partnership is increased.
Example 4h:	The adjusted basis of the owner's interest in the partnership also is increased.

Essential clauses and phrases must follow the words they modify and, thus, never introduce the sentence. They are not offset with

commas. The word "that" often introduces essential clauses and phrases.

Comma Rule 5: Independent… essential clause or phrase …clause.

Independent clause essential clause or phrase.

Example 5a: Individuals that otherwise meet all requirements can deduct personal and dependency exemptions under section 151(a).

Example 5b: Gross income includes all income that is otherwise excluded.

Example 5c: The corporation that experienced six straight years of net operating losses sold its holding in Starburst, Inc.

Example 5d: Most U.S. citizens who establish foreign residency can exclude some of their earned income. (Note that "who establish foreign residency" is an essential clause.)

Another common sentence structure consists of an independent clause and a nonessential clause or phrase. Use commas to offset nonessential clauses or phrases unless they follow the independent clause. The word "which" often introduces nonessential clauses and phrases.

Comma Rule 6: Nonessential clause or phrase, <independent clause.

Independent…, nonessential clause or phrase, …clause.

Independent clause nonessential clause or phrase.

Example 6a: If they otherwise meet all requirements, 151(a) allows individuals to deduct personal and dependency exemptions.

Example 6b: Section 151(a) allows individuals, if they otherwise meet all requirements, to deduct personal and dependency exemptions.

Example 6c: Section 151(a) allows individuals to deduct personal and dependency exemptions if they otherwise meet all requirements.

Example 6d: Unless otherwise excluded, gross income includes all income from whatever source derived.

Example 6e: Gross income includes all income, unless otherwise excluded, from whatever source derived.

Example 6f: Gross income includes all income from whatever source derived unless otherwise excluded.

Example 6g: Nova Corporation, which experienced six straight years of net operating losses, sold its holding in Starburst, Inc.

Special types of nonessential clauses and phrases merit separate attention. Offset nonessential appositives, contrasting elements, and geographical clarifications with commas. Also, the year portion of dates generally should be offset with commas when it follows the month and day; no comma is used when the day is omitted.

Example 6h: Dividends, a form of gross income, are subject to withholding under §1441 when paid to a nonresident alien.

Example 6i: The CEO's pension, a targeted benefit arrangement, operates partly as a defined contribution and partly as a defined benefit plan.

Example 6j: Snuggles Enterprises, a limited liability company, established a cafeteria plan for its employees.

Example 6k: The Code, not the Supreme Court, is the ultimate tax authority.

Example 6l: The IRS, not the taxpayer, has the burden of proof in fraud cases.

Example The free trade zone in Colon, Panama, is

6m: one of the world's largest.

Example 6n: The municipal securities that Memphis, Tennessee, issued were private activity bonds.

Example 6o: February 25, 1913, was the day three-fourths of the states ratified the U.S. Constitution to permit an individual income tax law.

Example 6p: Congress enacted the IRS Restructuring and Reform Act of 1998 on July 22, 1998, because of alleged abuses.

Example 6q: Congress enacted the IRS Restructuring and Reform Act in July 1998 because of alleged abuses.

Commas separate three or more words, phrases, or clauses that appear as a series. Though everyone does not agree, omitting the comma after the next-to-the-last item in the series can be confusing at times, so most experienced writers routinely include it. Thus, we strongly recommend that you include the final comma just before the conjunction.

Comma Rule 7: Independent… item, item, conjunction item …clause.

Example 7a: Business expenses are deductible only if ordinary, necessary, and reasonable.

Example 7b: Under section 1361(b) (1), a small business corporation is a domestic corporation that does not have more than 75 shareholders, any corporate owners, any nonresident alien shareholders, or more than one class of stock.

No discussion of commas would be complete without some mention of when commas are not needed. Two instances already have been mentioned. Comma Rule 2 indicated that no comma should separate an independent and dependent clause when the independent clause comes first in the sentence. Also, Comma Rule 5 clarifies that commas should not offset essential clauses and phrases. The overzealous use of commas is just as distracting as omitting commas where they are needed. Instances of comma zealotry are mentioned below.

Commas should never separate two independent clauses that a conjunction does not join. The result of a comma splice is a run-on sentence. To correct the comma splice, see Comma Rule 1. (NOT! means the comma's use is inappropriate.)

Comma Rule 8: Independent clause , independent clause. NOT!

Example 8a: Section 162 permits taxpayers to deduct trade or business expenses, §165 allows losses to be deducted. NOT!

Example 8b: Gross income includes all income from whatever source derived, the Code excludes certain items such as life insurance proceeds. NOT! (Cf., example 1b.)

Do not insert commas between subjects and verbs. When the subject is lengthy, some writers feel they must precede the verb with a comma, but such use only confuses the reader. Careful attention to the sentence structure can dispel the temptation to include a comma in this situation.

Comma Rule 9: Independent… subject, verb …clause. NOT!

Example 9a: The captive insurance company organized and operated in Bermuda, earned $40 million of Subpart F income. NOT!

Example 9b: The adjusted basis for determining gain or loss from a sale or exchange, depends on how the property was acquired. NOT!

Another common mistake is to separate the two nouns in a compound subject or object. Similarly, a comma should not separate the two verbs (or predicates) in a compound predicate.

Comma Rule 10: Independent… noun, conjunction noun …clause. NOT!

Independent… verb, conjunction verb …clause. NOT!

Example 10a: The IRS collected information about the multinational corporation based in Sweden,

and its Belgian distribution center. NOT!

Example 10b: Global Harvest, Inc. manufactures prefabricated barns in the United States, and sells them to farmers in East Africa. NOT!

Glossary: Parts of a Sentence

Appositive: A noun adjacent to another noun that identifies, explains, describes, or renames the latter (e.g., Randy Smith, a SALT expert). Can be an essential clause or phrase, but it is usually nonessential.

Clause: Group of words within a sentence containing a subject and predicate (verb).

Coordinating Conjunction: Word that connects words, phrases, or clauses (i.e., and, but, for, nor, or, so, yet).

Dependent Clause: Clause that cannot stand alone as a separate sentence; it depends on the rest of the sentence for its support. If extracted from its sentence, a dependent clause would be a sentence fragment or an incomplete sentence. Also known as subordinate clause. A dependent clause can be essential or nonessential.

Essential Clause or Phrase: Dependent clause or phrase that follows and limits the words it modifies. An essential part of the sentence that cannot be omitted without changing or distorting the reader's understanding of the independent clause. Essential clauses or phrases are not offset with commas.

Independent Clause: Clause that, if extracted from the sentence, would form a separate, free-standing sentence by itself. Also known as main clause. All sentences have at least one independent clause, and sometimes the entire

sentence is an independent clause.

Introductory Element: Clause, phrase, or word that precedes the independent clause. A transitional expression is a special type of introductory element. Generally followed by comma.

Nonessential Clause or Phrase: Dependent clause or phrase that can be omitted without changing or distorting the reader's understanding of the independent clause. Sometimes called a parenthetical element, interrupter, or nonrestrictive clause and phrase. Generally offset with commas. A transitional expression is a special type of nonessential clause or phrase.

Phrase: Group of words within a sentence that does not contain a subject and predicate (verb). Any group of words that is not a clause. A phrase can be essential or nonessential.

Transitional Expression: Word or short phrase that links sentences and smoothes the reader's movement between sentences. Such expressions are used to contrast (e.g., however), compare (e.g., similarly), conclude (e.g., thus), summarize (e.g., for example), express purpose (e.g., for this reason), continue with an additional point (e.g., also), or place a thought in the context of time or place (e.g., later). A special type of introductory element. Generally offset with commas when introducing a sentence.

Selected from http://www2.gsu.edu/~accerl/punctuation/PU-ST4hot.htm - no contact details to "take permission" there and it does not say it is prohibited to teach or use all or part of the material.

The following test should help you recognize and correct instances of incorrect punctuation in your own writing.

Test: Type correct punctuation in the blanks. Two punctuation marks may be needed where closing quotes should be. If punctuation is unnecessary, type an underscore (i.e., _). Failure to type the underscore causes your answer to be scored as incorrect. Clicking "Tell Me Next Answer" provides the next answer but treats it as incorrect when scoring. When finished, click "Check and Score" to receive your score and see what you missed. Try again to fill in the blanks for the ones you miss.

1. The amounts paid are personal expenses thus they are not deductible per $262(a) which specifically prohibits a deduction for personal living or family expenses.

2. However if these assumptions are incorrect the payment will be alimony and therefore includable in Bell s gross income.

3. In a similar case Riddell (TCM, 1972) the taxpayer argued that his monthly restitution of stolen funds should be reclassified as a loan and thus not taxable.

4. One element is a tax and the other is a payment in exchange for the economic benefit.

5. To be creditable the foreign levy must be an income tax in the "U.S. sense

(Feedback given on either on board or paper, according to the group type)

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Session Four

Task One (Skill 4):

Punctuation –semicolons, apostrophes, and quotation marks

- Have you ever used a semi-colon? On what occasion?

We now review some rules about semicolons, apostrophes, and quotation marks.

Semicolons

Writers occasionally insert semicolons where they are inappropriate. More often, writers neglect to use semicolons where they clearly belong, sometimes using a comma instead. Generally, you should use a semicolon between independent clauses within a sentence if a coordinating conjunction does not separate them. A semicolon is particularly appropriate when the message of one clause is in sharp contrast with that of the second clause or when the second clause clarifies the first.

Semicolon Rule 1: <Independent clause>; <independent clause>.

Example 1a: Contributions to traditional IRAs are deductible; contributions to Roth IRAs are not.

Example 1b: The effective tax rate is an average measure of tax burden; the marginal tax rate is used for decision making.

Semicolons also are used between independent clauses that a transitional expression joins.

Semicolon Rule 2: <Independent clause>; <transitional expression>, <independent clause>.

Example 2a: Tax credits are no longer allowed for political donations; however, charitable contributions continue to be deductible.

Example 2b: Gambling and wagering income is taxable; thus, the $300 won in Friday night's

poker game should be reported.

As discussed earlier, in Comma Rule 7, commas generally separate the different words, phrases, or clauses in a series. However, when the items within the series contain "internal" commas, semicolons should be used to separate the items. Using semicolons avoids the confusion that otherwise might result from too many commas.

Semicolon Rule 3: <Independent… it,em; it,em; <conjunction> it,em …clause>.

Example 3a: IRS regional offices are located in Atlanta, Georgia; Dallas, Texas; New York, New York; and San Francisco, California.

Example 3b: The effective tax researcher must establish the facts; locate, interpret, and apply tax authority to the facts; reach conclusions; and make recommendations.

Quotation Marks

Quotation marks enclose the exact words of a speaker, book, or other source. Book chapters and journal articles also are placed in quotes. These rules are familiar to most. However, some writers are confused about how quotation marks should be used with other punctuation marks.

Quotation Rule 1: Periods and commas generally are placed inside closing quotation marks.

Example 1a: CIR v. Glenshaw Glass Company (S.Ct., 1955) defined income as "undeniable accessions to wealth, clearly realized, and over which the taxpayers have complete dominion."

Example 1b: Though the client asserted that the travel expenses to Japan were "ordinary and necessary," he never has conducted business outside Iowa.

Quotation Semicolons and colons are placed

Rule 2: outside closing quotation marks.

Example 2a: CIR v. Duberstein (S.Ct., 1960) clarified that a gift must proceed from a "detached and disinterested generosity"; otherwise, it is gross income to the recipient.

Example 2b: The following business expenses are "ordinary and necessary": salaries to officers, rental of the premises, and depreciation of equipment.

Quotation Rule 3: Question and exclamation marks go inside the closing quotation mark if they punctuate only the quote and outside if they punctuate the whole sentence.

Example 3a: The question for the actuary to answer is: "Does this retirement plan meet the minimum funding standards?"

Example 3b: Under §162(f), is the payment a "fine or similar penalty paid to a government for the violation of any law"?

Apostrophes

Generally, apostrophes are used to show possession.

Apostrophe Rule 1: Add 's to make either a plural noun not ending in s or a singular noun possessive. Add only an apostrophe to a plural noun already ending in s. For singular nouns ending with an s, sh, or z sound, add either an apostrophe or an 's.

Example 1a: The shareholder exchanged Omega's stock for Beta's stock tax-free.

Example 1b: The affiliated corporations' consolidated tax return incorrectly allowed group losses to be deducted in full.

Example Our client could not benefit from the

1c: lifetime learning credit for his children's tuition because his adjusted gross income was too high.

Example 1d: Memories of Professor Larkins' tax exam will never leave me.

Example 1e: I will not soon forget Professor Larkins's emphasis on writing skills for tax professionals.

Contractions often sound like other words. As a result, some people confuse the two. The confusion is especially understandable since apostrophes in contractions indicate missing letters, not the possessive form as in Apostrophe Rule 1. In fact, the word that sounds the same may be a possessive noun even though it contains no apostrophe! Here are three examples that cause confusion:

Contraction (with Meaning)	Sound-Alike Possessive
it's (it is)	its
who's (who is)	whose
you're (you are)	your

Apostrophe Rule 2: Use an apostrophe to show where letters are omitted in a contraction.

Example 2a: If it's a substantially disproportionate distribution, §302 allows the redemption to be treated as an exchange.

Example 2b: You're not entitled to deduct your mortgage interest on all four vacation homes.

Example 2c: The corporation redeemed its stock from 16 percent of its shareholders.

Sometimes the apostrophe is used to form plurals, but only in limited situations.

Apostrophe Rule 3: Use an apostrophe to pluralize letters, numbers, abbreviations ending with a period, and abbreviations with a final s. Do not use an apostrophe to pluralize years and abbreviations without periods (unless ending

in s).

Example 3a: Rapid tax law changes characterized the 1980s.

Example 3b: The Code contains many Subpart A's.

Example 3c: The social security number contained so many 5's that I typed it incorrectly.

Example 3d: All our clients have six-figure AGIs.

Example 3e: All our clients have six-figure A.G.I.'s.

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After reviewing this lesson, please take the following punctuation tests. These tests should help you recognize and correct instances of incorrect punctuation in your own writing.

-Type correct punctuation in the blanks. If no punctuation is necessary, you should type an underscore (i.e., _). Failure to type the underscore causes your answer to be marked incorrect. Clicking "Tell Me Next Answer" provides the next answer for you but will treat that blank as incorrect when scoring. When finished, click "Check and Score" to receive your percentage score and see what you missed. Try again to fill in the blanks for the ones you miss.

1. All the Slammin-Jammin Club s income comes from it s members thus all it s income is "exempt function income

2. The club is not organized for profit and none of it s earnings are used to benefit any one member.

3. Thus membership dues are disguised forms of fines and

benefit the club and it□s members as a whole.

4. The fees paid to the club are considered membership dues□ since their purpose is to provide support for the organization.

5. These penalties are the only funds the club collects from it□s members□ and their payment is a condition for membership.

6. If an expense is ordinary□ necessary□ and reasonable□ is it always "deductible□

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Test 2

Punctuate the following sentences.

1. the people are connected they share humanity
2. Dr john said we need to meet in paris to discuss the finding on the newly discovered disease

(Albaaly, 2008)

Task Two (Skill 1)

Grammar revision

- Identify the erroneous word or part in each of the following sentences. Work withyour partner.

1. The buffalo and the deer are like except for the size and shape of the head and mouth.

2. Other important aspect of tachistopic training in recent years has been the newfound use by professional teams.

3. Only about 3 percent of coal mines actually do a profit.

4. Dislike sumac with red berries, sumac with white berries cannot be eaten.

5. Pittsburgh reduced its smog by requiring more complete oxidation of fuel in cars, and others cities could do the same thing.

6. Alike other mammal animals, dolphins have lungs.

7. Up to World War II, almost all important pieces of research in physics had been made at universities, with only university funds for support.

8. Because the plan that was made yesterday is no longer feasible, the manager had to choose another options.

9. Particles with unlike charges ask for each other, while particles with alike ones repel each other.

10. One another surprising way for forest conservation is controlled cutting of trees.

Adapted from Deborah Phillips (1996a). Longman Preparation Course For The TOEFL Test: Longman

Session Five

Task One (Skill 1 &)

Grammar revision

Identify the erroneous word or part in each of the following sentences. Work with your partner.

3. Titania, photographed in 1986, have significantly fewer craters than

other moons of Uranus.

4. The author Francis S. Key Fitzgerald is better know as F. Scott Fitzgerald.

5. The failure to plan for the future results in the consequence that a child from an urban area must be took to the country to see nature.

6. This machine is able to print on single pieces of paper, but only if the level will be facing the front of the machine.

7. The development of permanent teeth, alike that of deciduous teeth, starts before one is born.

8. A crowd of several thousand fans watching that ceremony from behind a fence.

9. Unlike architects of the early modern movement, Alvar Aalto uses to stress

informality, personal expression, romanticism, and rationality in his work.

11. The first fish have appeared on the earth approximately 500 million years ago.

Task Two (Skills 22 & 9)

Fill in the blanks using these words: but, or, since, so, unless, until, although, when, because, & and.

1. Run quickly, …… you will miss the bus.

2. In the middle of the night, we heard some noise ……. we turned the light on.

3 I suggest we wait here …… the rain stops.

4. Some medical students cannot be doctors ……. they have a degree in medicine.

5. That happened years ……years ago.

6. Mona has not contacted me ……..she left school last week.

7. He will die …… the doctors interfere immediately.

8. This book is an expensive …….. very useful source of knowledge.

9. I was getting tired ……. I decided to stop for a rest.

10. She was angry …….. she heard what had happened.

11. Many things were much different ……. I was young.

12. He was about to retire …… of his ill health.

13. They will play football in the open field next Sunday…….. it's raining.

14 .We do something **……**we like it.

15. Would you rather have a coffee …….. tea?

16. …… the machine is old, it still runs very well.

17. Do you know …… he will arrive?

18. Do you need a pen ……. a piece of paper?

19. I'd like to go …….. I am so busy.

20. We saw Dr. Smith leaving an hour …… two ago.

(Albaaly, 2008)

Task Three (Skill One): Grammar revision - parallel structures

a. Identify the erroneous word or part in each of the following sentences.

5. Only rarely sound waves have a single frequency encountered in reality.

6. Cameos could be carved not only from onyx and sardonyx or from agate.

7. In spite of the fact that most of the wild horses in the western range have already been rounded up, the most remote the area, the greater the possibility wild horses can still be found.

8. The dangers of noise are not as clear-cut than are those from most other health hazards.

b. Choose the letter for the right word or group of words. Work with your partner.

1……Big Dipper, a seven-star constellation which has the shape of a cup, is part of Ursa Major.

(A) The

(B) It is

(C) With the

(D) That a

2. The Academy at West Point …….. on the west bank of the Hudson River, north of New York.

(A) has once located

(B) is located

(C) which is located

(D) whose location

3. …….impressive chapter in the book was the chapter on Jack's imaginative story.

(A) It was the most

(B) The most

(C) Mostly is

(D) Most of the

4. ……., a liberal arts college which is specifically for deaf people, is located in Washington, D.C.

(A) Gallaudet College

(B) Gallaudet College has been

(C) About Gallaudet College is

(D) Because of Gallaudet College

5. ……..varieties of dogs at the show, including spaniels, poodles, collies, and otherwise.

A. The several

B. Those

C .Several

D .There were several

6. ….while the discovery that a big number of migratory songbirds can thrive in deforested wintering spots, the fact remains that these birds are dying at unusual rates.

(A) It is heartening that

(B) heartensome

(C) heartened

(D)) is heartening

Task Four (Skills 2, 24, & 28)
Vocabulary - variations

1. Choose *all* the possible answers

We ate lunch in the _____.

cafeteria (restaurant -snack bar- snack salad -bar diner).

2. *Where* would you find . . . ?

an MD _____ a) in the British or Canadian Parliament

a Ph.D. _____ b) on a ruler

an MP _____ c) in a university

in. _____ d) in a hospital

hp _____ e) on a engine

3. Compete the phrases with the suitable noun

to achieve ____ a) a secret

to reveal ____ b) a goal

to grasp ____ c) an idea

4. Correct the mistake

He felt exhausted after a long nap.

Adapted from
http://people.bu.edu/jpettigr/Artilces_and_Presentations/Teaching+Vocabulary.pdf

Pettigrew, J. (1995). Teaching Vocabulary: Two Dozen Tips & Techniques - Handout from a presentation at TESOL 1995 (Chicago).

Task Five (All the skills)

A. What is this?

A student was asked to answer to answer the following question:

Do you agree or disagree with the following statement?

Some people place a high value on loyalty to the employer. To others, it is perfectly acceptable to change jobs every few years to build a career. Discuss these two positions. Then indicate which position you agree with and why. Use specific reasons and details to support your answer. He wrote the following answer. Where do you think the introduction, body, and conclusion? How is the argument developed? How is the cohesion achieved? Identify the essay statement, the purpose of the writing, and any supporting details in the writing.

Different cultures place varying value on loyalty to the employer. In some countries, most notably in Asia, there is a high degree of loyalty to one company. However, in most European countries and the United States, loyalty to one's employer is not highly valued; instead, it is considered more rational and reasonable for an employee to change jobs whenever it is warranted to achieve the optimal overall career. Both of these positions have advantages and disadvantages.

In cultures that value loyalty to the employer, a kind of family relationship seems to develop between employer and employee. It is a reciprocal arrangement which the employer is concerned with assisting the employee to develop to his/her full potential and the employee is

concerned about optimizing the welfare of the company. The negative aspect to absolute loyalty to one company is that an employee may stay in one job that he/she has outgrow and may miss out on opportunities to develop in new directions. From the employer's point of view, the employee may be burdened with employees whose skills no longer match the needs of the company.

By contrast, in cultures in which it is quite acceptable to change jobs every few years, employees can build the career they choose for themselves. They can stay with one company as long as it is mutually beneficial to company and employee. As long as good relationship exists and the employee's career is advancing at an acceptable pace, the employee can remain with a company. At any time the employee is free to move to another company, perhaps to achieve a higher position, to move into a new area, or to find a work situation that is more suitable to his/her personality. The disadvantage of this situation is employees tend to move around a lot.

In conclusion, although both these systems have advantages and disadvantages, it is much better for employees to have the opportunity to move from job to job if it is necessary to have a better career.

Selected from Deborah Phillips (1996a). Longman Preparation Course For The TOEFL Test: Longman

B. Now, in essay format, answer the same question, giving your own opinion and as many details as possible. After you finish writing your essay, exchange it with your partner to check it.

(Albaaly, 2008)

Session Six

Skill 15

Task One: Creating Your Thesis Statement

Once you have chosen a topic and generated a list of ideas to discuss in an essay, you have to create your thesis statement.

What is a Thesis Statement?

A thesis statement expresses your opinion about a topic. It is the basis of the introductory paragraph of your essay.

· It should be a single complete sentence.
· You must be sure you can support the opinion in your thesis.

Thesis Rules

A thesis statement should:

· Never be an open-ended question
· Be limited to mentioning only those points you plan to discuss in your essay
· Never be so broad that it's difficult to discuss all relevant information
· Only present one specific idea; not multiple ideas
· Not contain two conflicting ideas

ACTIVITY 4A

Identify the problems in the following thesis statements using these categories:
(a) conflicting ideas (b) open-ended question (c) too broad (d) not limited

1. The World's Fair in New Orleans was a disaster because of the way the press criticized the way it was run, but it was exciting for little children and had many good food booths.

2. TV commercials are obnoxious to the person who is intent on watching a good show; on the other hand, they provide entertainment

in the antics of the performers and they provide a good opportunity to take a snack break.

3. Since politicians are constantly bombarding each other, how do they expect anyone to know who is right and who is wrong?

4. Rap music is a popular form of art because it is creative and original and because it follows the traditions of other spontaneously developed music like jazz.

5. Unless people are conscious of pollution, the world will be destroyed by the year 2050

Task Two An essay is composed of three parts:

1. The opening paragraph or introduction
2. The body
3. The conclusion

Developing your topic and beginning your essay

Since the body of the essay is the biggest part it is often the best place to start. That way, the bulk of your essay is completed first.

In order to begin writing the body of your essay, you need to develop your topic. This involves closely examining your thesis statement. The first question you need to ask yourself is: how do I plan to support the opinion in my thesis?

Well, you begin by making a list of reasons or examples that support your opinion. You need a list of, at least, three strong reasons. For example, if we look back at the thesis statement in Exercise four, we can easily create a list to support the opinion stated in the thesis:

Thesis – When it comes to animals, dogs make better pets than cats.

Reasons/Examples to support opinion – 1) Dogs are fun
2) Dogs help you exercise
3) Dogs are loyal
4) Can you add any other reasons?

Once you have your reasons/examples, putting the body of the essay together becomes very simple by following these steps:

Step 1 – Examine your first reason/example. I.e. "dogs are fun"
Step 2 – Explain what you mean (why are dogs fun?) and use examples to back up your ideas. In this instance you might explain that it's fun to teach dogs games and tricks, or that dogs like to play.
Step 3 – Put your ideas together in step two to create a paragraph. Keep in mind that there should be only one main topic in a paragraph. If you find yourself wanting to branch off of a topic onto another related one, begin a new paragraph to discuss that idea.
Step 4 – Repeat steps 1 – 3 for the second and third reasons/examples. Once you have the minimum three paragraphs written to support your thesis, the body of your essay is complete.

Remember, **the body of your essay must have at least three paragraphs**. Additional paragraphs, however, can help strengthen your essay if they help reinforce your ideas.

ACTIVITY 5A

Look back at the four thesis statements you created in Activity 4B and fine tuned in activity 4C. Make a list, for each of those statements, of at least three reasons/examples that support your opinion in each thesis.

ACTIVITY 5B

Choose one of the thesis statements and lists of reasons/examples you worked on in the previous activity. Following steps 1 – 4 of exercise five, use your list of reasons to write the paragraphs to make up the rough copy of the body of an essay.

Task Three : Writing the Introduction and Conclusion of an Essay

So you know how to write the body of your essay, but do you know how to begin your essay? As explained in exercise five, there are three parts of an essay: the introduction, body, and conclusion. You CANNOT begin an essay by simply stating the thesis of your essay. You must begin an essay with an introductory paragraph, or introduction. This introductory paragraph is the first paragraph of your essay. It should announce your topic to the reader, include the thesis statement, and, hopefully, get your reader's attention.

Writing the introductory paragraph of an essay is quite easy. There are a variety of ways to write an introductory paragraph, but, for the purpose of simplicity, we are going to look at the thesis-statement-last introduction.

Writing your introduction

1. Write the thesis of your essay ¼ of the way down your page (leaving several empty lines above it).
2. Using the empty lines before your thesis lead your readers to your thesis.

This means you need to discuss things related to the topic in your thesis.

How do I lead my reader to the Thesis statement?

There are several ways to begin your essay, and more specifically, your introductory paragraph. The following are some options:

- Begin your essay by asking a question
- Begin your essay by telling a very brief story
- Begin your essay by using a quote
- Begin your essay by stating an interesting fact
- Begin your essay by telling a joke
- Begin your essay by offering a description

Examples:

(Using a question)

Have you ever wondered why we have a legal drinking age? Many underage teens will argue that having a legal drinking age is useless. Teens will drink when and if they feel like it. Alcohol is easily accessible, so why bother with an age restriction? Perhaps it is because underage drinking may create such serious problems. There are many serious issues associated with underage drinking.

(Using a description)

Krista and I have been best friends for a long time. We have been through thick and thin. Good times and bad times, and our friendship has experienced many changes in between. "Best friendship" is a very special relationship that requires many different characteristics to be successful.

ACTIVITY 6A

Write a rough copy of the introduction for the essay body you completed in Activity 5B.

Writing the Conclusion

OK, two out of three parts completed! Now for the last part – writing the conclusion.

The concluding paragraph of an essay, or conclusion, is your last say on your essay topic. This is where you wrap your ideas up and close the essay. Essentially, the conclusion of your essay need only be one paragraph; it is not limited to that, however. In your conclusion you may

- Restate your thesis
- Summarize the main points of your essay
- Draw a final conclusion about your topic
- Leave your reader with a memorable statement or quote

Most importantly you want to leave your reader feeling something and offer them closure.

ACTIVITY 6B

Write a rough copy of the conclusion for the essay body you completed in Activity 5B.

ACTIVITY 6C

Connect your introduction, body and conclusion together to form your completed (rough) essay.

Source for all the session with permission from Engram, Judith A

http://hrsbstaff.ednet.ns.ca/engramja/exsix.html

Session Seven
(All the skills)

Task One

a. How to write an essay

An essay is a piece of writing which is relatively short and it expresses the writer's view on a particular topic. The kinds of essays are varied according to the purpose of writing itself. However, the most notable ones are descriptive, argumentative, scientific, narrative, comparative, and contrastive. In order to be able to write any essay you need to do the following:

1. Decide what your topic is
2. Brainstorm ideas
3. Organize the ideas and find connections between them
4. Write the first draft
5. Revise the first draft with yourself and with others
6. Write the final draft
7. Proofread the final draft – do this on your own and with others' help.

The following is a description of what descriptive, argumentative, and scientific essays should look like.

1. Descriptive

A descriptive essay involves describing a person, place, a memory, or thing in such vivid detail that the reader can easily structure a precise mental picture of what is being written about. To make this interesting, the author may use a degree of imaginative language, interesting comparisons, and some images that appeal to the senses. (Albaaly, 2008)

Example

My Own Little World

The door to my study is nearly always closed. It's the place I go to read and work in tranquility. Today, however, I'm inviting you in for a visit.

As you open the door, notice the Guatemalan crucifix with its bright gold and maroon flowers; it joyfully reminds me to dedicate my work to God. Although the room is small, I hope you find it cozy. A big cheerful window lets in the morning sunshine, which saturates the room with its warmth and embraces us with light. Birds chirp outside, beckoning you to enter.

An old-fashioned doctor's desk with brass drawer handles sits in front of the window, its wood full of nicks from many careless moves and tow once-teething puppies. May I introduce you to Ralph, my friendly computer, who sits on top of the desk? When I turn him on, he'll crackle "hello" and blink an inviting amber command on the screen. That's my dog Chico under the desk, snoring in harmony with Ralph and the birds.

Against the left wall are my book cases, sagging with the wise weight of cheap paperbacks and a few expensive gold-spined volumes interspersed. A bronzed Indian chief in a watercolour squints knowingly at us from the wall. Won't you have a seat in the tattered old green armchair nestled in the other corner? I know you smell the freshly perked coffee. I made it especially for your visit. Use my favourite cup there on the tray; it's the one with red and blued balloons around the rim.

Stay as long as you wish, but when you're ready to leave, be sure to close the door behind you. I like the peaceful security of this, my own little world.

Passage taken from Theodore Johnston and James Gonzales, The Writers Advice Book, Ginn Press, Massachusetts, 1987, p. 72. In http://www.swadulted.com/workshops/eslcourse/essays.html Access date 18-02-2008.

2. Argumentative

An argumentative essay tends to adopt a certain position of thought. It shows a balance of two or more opposing or

other views. It gives examples of those views. However, it proves with evidence or examples that the writer's view is correct. (Albaaly, 2008)

You Just Don't Understand

Experts and nonexperts alike tend to see anything women do as evidence of powerlessness. [The language of the media is replete with examples of how difficult it is for women to be regarded as beings with authority and power. The attitude follows women in power everywhere, but]... nowhere is the conflict between femininity and authority more crucial than with women in politics.

The characteristics of a good man and a good candidate are the same, but a woman has to choose between coming across as a strong leader or a good woman. If a man appears forceful, logical, direct, masterful, or powerful, he enhances his value as a man. If a woman appears forceful, logical, direct, masterful, or powerful she risks undercutting her value as a woman.

As Robin Lakoff shows in ***Language and Woman's Place***, language comes at a woman from two angles: The words they speak, and the words spoken about them. If I wrote: "After delivering the acceptance speech, the candidate fainted, "you would know I was talking about a woman. Men do not faint; they pass out. And these terms have vastly different connotations that both reflect and affect our image of men and women. Fainting conjures up a frail figure crumpling into a man's rescuing arms, maybe just for dramatic effect. Passing out suggests a straightforward fall to the floor.

An article in Newsweek during the 1984 vice presidential campaign quoted a Reagan aide who called Ferraro [Geraldine Ferraro- a 1984 vice presidential candidate] "a nasty woman" who would "claw Ronald Reagan's eyes out." Never mind the nastiness of the remark and of the newsmagazine's using it to open its article. Applied to a man, nasty would be so tame as to seem harmless. Furthermore, men don't claw; they punch and sock, with correspondingly more forceful results. The verb claw both reflects and reinforces the stereotypical metaphor of women as cats. Each time someone uses an expression associated with

this metaphor, it reinforces it, suggesting a general "cattiness" in women's character.

In his book The Language of Politics, Michael Geis gives several examples of words used to describe that undercut her. One headline called her "spunky" and "feisty." As Geis observes, spunky and feisty are used only for creatures that are small and lacking in real power; they could be said of a Pekingese but not a Great Dane, perhaps of Mickey Rooney but not of an average-size man.

It's not that journalists, other writers, or everyday speakers are deliberately, or even unintentionally, "sexist" in their use of language. The important point is that gender distinctions are built into language. The words available to us to describe women and men are not the same words. And, most damaging of all, through language, our images and attitudes are buttressed and shaped. Simply by understanding and using the words of our language, we all absorb and pass on different, asymmetrical assumptions about men and women.

Passage taken from "You Just Don't Understand," by Deborah Tannen, in Mosaic Two, Blass, Laurie and Meredith Pike-Baky, The McGraw-Hill Companies Inc., New York, 1996, p. 50, 51. In http://www.swadulted.com/workshops/eslcourse/essays.html#Argumentation Access date 18-02-2008

3. Scientific

   This type focuses on giving scientific facts about something. It defines and describes it and/ its parts in scientific terms. It uses rigid, clear language, sometimes with percentages and scientific facts – no imagination used. (Albaaly, 2008).

The Earth

The earth is a solid sphere. It is made up of three concentric spheres or layers. These are called the core, the mantle, and the

crust. The solid sphere is surrounded by a gaseous sphere, which is called the atmosphere.

We know most about the crust of the Earth which is the outermost sphere. This layer is very thin compared with the diameter of the whole Earth. It is only about 10 km thick under the ocean and about 30 km thick on land. It consists of rock which contains a lot of minerals. These are usually in compounds called oxides, containing oxygen, or sulfides, containing sulfur.

The mantle is much thicker than the crust. It is about 30 km thick. It consists mainly of rocks, but we do not know much about their composition.

The core, which is situated inside the mantle, seems to be divided into two parts. The inner core is about 2800 km in diameter. We believe that it is mainly composed of iron, but it also contains about 10% nickel. The layer surrounding the inner core is called the outer core and is approximately 2000 km thick. It is probably composed of molten iron and nickel. However, the metals in the inner core seem to be rigid, and therefore solid. This is because they are under very high pressure, which causes solidification in spite of the high temperatures at the centre of the Earth.

From Nucleus: English for Science and Technology (General Science), Longman Press, 1983, p.27. In http://www.swadulted.com/workshops/eslcourse/essays.html#Definition Access date 18-02-2008. No contact details found to take permission.

b. Now, write two short essays: one describing this classroom and another giving scientific facts about a disease you know well.

(Albaaly, 2008)

Session Eight

Task One (Skill One) Grammar revision.

a. Identify the erroneous word or part in each of the following sentences. Work with your partner.

1. The coyote is somewhat smaller in size that a timber wolf.

2. The weather reports all shows that there will be a tremendous storm front moving in.

3. Seldom cactus plants are found outside of North America.

4. In a basketball game a player what is fouled receives one or two free throws.

5. Until recently, California was larger producer of oranges in the U.S.

6. An understanding of engineering basics and problems are not possible until basic arithmetic is fully mastered.

7. The earliest the CVS (chorionic villus sampling) procedure in the pregnancy, the

greater the risk to the baby.

b. Each of the following sentences has words or groups of words that should be parallel. Identify the word which indicates that the sentence should have parallel parts. Underline the parts that should be parallel. Then, indicate if the sentences are correct (C) or incorrect (I).

1. She had jobs as a teacher, a housekeeper, in a restaurant. I

2. The report you are looking for is in the file on the desk. C

3. She works hard but usually gets below-average grades.

4. The speaker introduced himself, told several interesting anecdotes, and was finishing with an emotional plea.

5. You have to know when the course starts and how many units you must complete.

6. The term paper he wrote is rather short but very impressive.

7. She suggested taking the plane in the evening or that we should go by train tomorrow.

8. The dean or the assistant will inform you of when and where you should be registered for the diploma.

9. There are papers to file, sheets to type, and those letters to be answered.

10. The manager wants a quick but thorough response.

c. The paired conjunctions both. . . and, either. . . or neither. . . nor and not only. . . but also require parallel structures. Examine the following:

I could know both where you went and what you did.
Either Mark or Sue does that work. /
The money are neither in my pocket nor in my purse.
He is not only an good student but also an outstanding athlete.

d. The following outlines the use of parallel structure with paired conjunctions:

PARALLEL STRUCTURE WITH PAIRED CONJUNCTIONS
both (same structure) and (same structure)
either (same structure) or (same structure)
neither (same structure) nor (same structure)
not only (same structure) but also (same structure)

e. which sentence of the following is correct and which is not.

I 1. According to the syllabus, you write a paper you can take an exam.

C 2. It would be noticed appreciated when you finish the work before you leave.

3. She would like neither to see a movie but to go bowling.

4. Either the director or her assistant can help you with your refund.

5. She wants not only to have a trip to Europe but she also would like to travel to Asia.

6. He could correct neither what you said nor he wrote.

7. Both the tailor or the laundress could not fix the damage to the dress.

8. He not only called the police department but also called the emergency services.

9. You become a graduate either at the end of the fall semester or you can graduate at the end of the spring semester.

10. The movie was neither impressive nor was it interesting.

References

Selected from Deborah Phillips (1996a). Longman Preparation Course for the TOEFL (2nd ed.): Wesley Publishing Co. Inc.

Session Nine

(all the skills)

Task One

An Essay Question

MODEL ESSAY: Read the following essay and pay attention to thesis statement, transitions and topic sentences, also to grammar, punctuation, spelling and other writing aspects. Write a one on your own on the same topic. Work with your partner.

Why Women Should Not Have an Abortion

Many women in the entire world have abortions. Women believe there are many reasons to abort such as fear of having or raising a child, rape, or not having enough money. But whatever the situation, there is never an acceptable reason to get an abortion. **Some important reasons why women should not abort have to do with human values, religious values, and values of conscience.**

The first reason why women should not have an abortion is related to basic human values. Women need to think about their unborn babies who are not responsible for this situation. These unborn babies should have the privilege to live and grow into a

normal person. Women need to be more humanitarian and less egoistic with these babies. **On the other hand,** the baby doesn't know how or why he is here. It is not necessary to kill a life; there are many other solutions to resolve this problem short of abortion.

The second reason why women should not abort has to do with religious values. In almost all religions, a woman is not permitted to have an abortion. If they do, their religions will punish them. In some religions, for example, a woman cannot take communion after having an abortion, and before taking communion again, she must do many things as a form of penitence. In whatever religion, abortion is punished and for this reason, women should not abort.

Finally, the third and most important reason why women should not

abort is the related to her conscience. When a woman has an abortion, she will always think about the baby she might have had. She will always believe about the future that could have happened with her baby which will always remind her that she killed it. Because she has had an abortion, she will never have a good life, and her conscience will remind her of what she had done. Because a woman who has an abortion can't forget about what she has done, these thoughts will always be with her, and the results can be calamitous.

There are many reasons why women should not have an abortion. The truth is that women need to think about the consequences that can occur before having sexual relations. I think that the effects of an abortion can be very sad for everyone involved, both for the woman who has the abortion and for the family who lives with her.

Selected from from http://webcache.googleusercontent.com/search?q=cache:Y7HQEwGK9kIJ:dis.fatih.edu.tr/download/file516.doc+argumentative+essay+question+and+sample+answer&cd=6&hl=en&ct=clnk&gl=uk

All skills

Task Two

MODEL ESSAY: Read the following essay and pay attention to thesis statement, transitions and topic sentences, also to grammar, punctuation, spelling and other writing aspects. Write one on your own on the same topic. Work with your partner.

Why You Should Not Smoke

I am sure that you know that smoking harms your body. Then why do you continue smoking? Maybe you do it because you haven't really become conscious about all the effects that smoking has. There are a lot of reasons why you shouldn't smoke. Some of them are that smoking affects your health, that you spend a lot of money on cigarettes, and that when you smoke you are not respecting people around you.

The first reason why you shouldn't smoke is that smoking affects your health. If you smoke, your physical condition will be negatively affected, so it will be very difficult for you to succeed in sports. Also, smoking produces lethal diseases like cancer and reduces the length and quality of your life. Maybe you don't notice all the physical effects of smoking immediately, but you surely will be sorry one day.

The second reason why you shouldn't smoke is because of all the money that you spend on it. Maybe you start smoking only when someone offers you a cigarette, but there will be a day when you will feel the need of a cigarette. By this time, you will pay whatever to smoke, and each time you will smoke more, so you will spend more money. All the money you would spend on cigars could have been spent in something better, don't you think?

The last reason why you shouldn't smoke is out of respect for the people around you. When you smoke, you not only harm yourself, but you also harm all the people around you. So you mustn't be selfish; you should at least avoid smoking in front of people who don't smoke. Also, many people don't like the cigarette's smell, so they won't enjoy your company. Would you like that?

I have said just some reasons of why you shouldn't smoke, so I hope that now those of you who smoke are able to think a little and try to make a smart decision. In addition to all the reasons I've said, I would like you to think about how much you love yourself and then whether you want to continue harming yourself. Think also about all the people who love you, like your family who doesn't want to see you suffering or sick. If you decide to continue smoking, what a pity. But if you decide to stop smoking, congratulations! Remember that "If you can dream it, you can do it."

Source: By Luisa Moad ITESM, Campus Queretaro Advanced English C

Selected from **http://webcache.googleusercontent.com/search?q=cache:Y7HQEwGK9kIJ:dis.fatih.edu.tr/download/file516.doc+argumentative+essay+question+and+sample+answer&cd=6&hl=en&ct=clnk&gl=uk**

Vocabulary

1. . Cross out the word that doesn't belong with the others in the group.

uncle father ~~aunt~~ brother

EST pm ~~Ph.D.~~ BC

meadow ~~river~~ yard field

2. Categories - You give the example; students give the category. Or vice versa.

Examples: gun, knife, club: *weapon*

Category: weapon: *gun, knife, club*

3. Complete the sentence

I was exhausted after _____

Voc. Distinguishing shades of meaning & synonyms

1. Choose *two* possible answers which complete each sentence.

Semantic: She *longed for* . . .

(a) her freedom.

(b) her lover who was far away.

(c) some ketchup for her French fries. *(only a joke; not serous enough)*

Grammatical: He pondered . . .

(a) his future.

(b) that he didn't know what to do. *(only followed by a noun, not a clause)*

(c) the meaning of life.

Selected from Pettigrew (1995). **Teaching Vocabulary: Two Dozen Tips & Techniques**

Session Ten

Skill 16

Task One

In an essay format, write on the following topic: " Some think that the internet is full of benefits while others see it is harmful". Try to present both parties' views, giving a *balanced* account of those vies.

Remember the following rules:

1. Decide what your topic is
2. Brainstorm ideas
3. Organize the ideas and find connections between them
4. Write the first draft
5. Revise the first draft with yourself and with others
6. Write the final draft
7. Proofread the final draft – do this on your own and with others' help.

Skills 21 &24

Task two

Revise the essay you have written to improve your standard writing and word choice.

Skills 8 & 9

Task Three

Act as a juror

37. Give your partner your writing and take his. Decide on ways to improve unity and focus of his writing
38. Read the writing again and judge how much background knowledge they have on the subject and put down you additions in a new, amended version

Skill 16

Task Four

In an essay format, write on the following topic: " Some think that the internet is full of benefits while others see it is harmful". Try to present both parties' views, giving a *balanced* account of those vies.

Remember the following rules:

8. Decide what your topic is
9. Brainstorm ideas
10. Organize the ideas and find connections between them
11. Write the first draft
12. Revise the first draft with yourself and with others
13. Write the final draft
14. Proofread the final draft – do this on your own and with others' help.

Skills 21 &24

Task Five

Revise the essay you have written to improve your standard writing and word choice.

(Albaaly, 2008)

Skills 8 & 9

Task Six

Act as a juror

39. Give your partner your writing and take his. Decide on ways to improve the unity and focus of his writing
40. Read the writing again and judge how much background knowledge they have on the subject and put down you additions in a new, amended version

(Albaaly, 2008)

Session Eleven

Task One

Skills 7 & 16

Write an essay on a medical course you studied in the past, giving a balanced account of what you write with respect to both merits and demerits of the course. (No longer than 45 minutes)

(Albaaly, 2008)

Skills 9 & 8 & 24

Task Two

Sit in pairs. Exchange your essay with your partner's. How much do you think your partner has about the topic? What are the aspects of unity and focus of the essay? How do you think he/she can improve those aspects? Are there any informal expressions/ words which could be changed into formal language?

(Albaaly, 2008)

Session Twelve

Skills 2 &24

Task One

Which word in each pair is *informal*?

a child …… shit……. to fail….. …….

mom ……disgusting……. poorly

a kid …….. poo……..to flunk…….

mother……..gross……..ill

(Albaaly, 2008)

Skills 2 & 28

Task Two

Complete these definitions - *How* are these actions done?

shatter = to break into pieces……

hurt= …….

thrust = ……

slim=……

thin=……

tap = ……

raise=……

rise=……

(Albaaly, 2008)

Skills19, 2, 8, 10 & 26

Task Three

Choose the correct word and say why both from the structural and semantic point of view.

a. ……the fact that the exam was hard, it also did not give us enough time to answer the questions.

-Beside

-Besides

b. Use every conjunction within the following twice, to join two sentences. Do this on the board. Consult your partner first.

After, Before, when, once, if, unless, as if, as though, if only, since, for, ago, since, as, because, now that, inasmuch as, so that, in order that, in order for, as long as, as soon as, hardly..when, scarcely..when, no sooner…than, no matter, though, although, even though, despite, even if, in spite of, till, until, whereas, while

(Albaaly, 2008)

Session Thirteen

All the skills

Committed to all the skill you have learnt during this course,

a. Write an essay telling us about "an unforgettable day in my life", exchange your essay with your partner after you finish it, and give them feedback (30 minutes).

b. Write an essay on "dangerous diseases", exchange your essay with your partner after you finish it, and give them feedback (45 minutes).

Session Fourteen

All the skills

Committed to all the skill you have learnt during this course,

a. Write an essay telling us about "a good personality type ", exchange your essay with your partner after you finish it, and give them feedback (30 minutes).

b. Write an essay on "a visit to an attraction", exchange your essay with your partner after you finish it, and give them feedback (45 minutes).

Notes

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APPENDIX L

EXPERIMENTAL DATA

Student No.	Writing Test Control Group Data						Writing Test Experimental Group Data					
	pre			post			pre			post		
	Q1	Q2	TOT	Q1	Q2	TOT	Q1	Q2	TOT	Q1	Q2	TOT
1	18	18	36	26	26	52	35	34	69	55	57	112
2	17	11	28	39	43	82	13	15	28	43	45	88
3	19	15	34	39	43	82	20	15	35	45	51	96
4	13	13	26	45	51	96	15	10	25	40	45	85
5	14	13	27	46	44	90	18	18	36	25	25	50
6	35	33	68	56	55	111	33	37	70	51	56	107
7	34	32	66	47	45	92	10	12	22	45	43	88
8	15	16	31	47	52	99	18	16	34	43	43	86
9	14	12	26	40	45	85	13	15	28	39	45	84
10	39	26	65	40	44	84	16	17	33	30	31	61
11	18	12	30	27	25	52	35	31	66	52	55	107
12	19	20	39	27	25	52	13	19	32	43	41	84
13	33	33	66	39	43	82	21	20	41	42	40	82
14	16	13	29	39	44	83	17	16	33	30	29	59
15	18	15	33	46	51	97	20	21	41	31	35	66
16	12	14	26	46	46	92	35	34	69	50	56	106
17	15	16	31	57	46	103	14	20	34	40	41	81
18	33	32	65	57	55	112	19	18	37	40	39	79
19	30	29	59	60	59	119	15	10	25	31	36	67
20	17	16	33	47	47	99	19	10	26	31	32	63
21	11	12	23	47	47	99	18	18	36	57	58	115
22	20	16	36	40	43	83	15	10	25	40	41	81
23	15	12	27	46	42	88	20	15	35	47	46	93
24	17	13	30	46	42	88	13	15	28	41	43	84
25	18	14	32	30	27	57	35	43	78	23	25	48
26	17	15	32	29	27	52	18	18	36	23	36	59
27	21	17	38	37	43	80	15	10	25	39	40	79
28	12	12	24	37	40	77	20	15	35	46	39	85
29	17	17	34	45	43	88	13	15	28	45	40	85
30	30	30	60	55	54	109	35	34	69	56	51	107

IWB Attitude Survey Data (experimental group)		Writing Attitude Questionnaire Data			
		control group		experimental group	
pre	post	pre	post	pre	post
0	24	36	51	30	56
0	19	32	45	18	46
0	21	28	51	29	62
0	16	42	45	42	71
0	18	41	45	39	43
0	18	30	36	29	56
0	23	29	43	30	46
0	17	33	43	18	62
0	18	28	30	29	71
0	17	22	41	42	43
0	20	30	43	39	56
0	15	18	35	29	56
0	25	29	33	30	57
0	19	42	45	40	44
0	20	38	43	43	71
0	17	30	40	30	63
0	20	30	46	20	46
0	20	18	44	31	57
0	24	32	35	26	46
0	19	39	39	20	60
0	17	45	51	41	57
0	20	37	43	38	58
0	19	22	21	19	47
0	19	24	27	23	51
0	20	21	31	21	52
0	22	33	46	35	58
0	17	38	50	36	61
0	18	39	44	40	57
0	19	33	34	31	70
0	15	20	28	19	49

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