Using ICT in English Classes in Bahraini Schools

Chapter One
Overview

For more than a thousand years, the principal methodology used in most educational establishments was one where the all-knowing teacher disseminated knowledge to the student-listener. Even as diverse approaches to educational methodologies emerged – such as the grammar-translation approach, the communicative competence approach, the audio-lingual approach, or the cognitive approach – the basic methodology of students facing the teacher while knowledge was being disbursed – did not change. Effectively, classrooms remained teacher-centered, and students continued in their efforts to regurgitate the disseminated wisdom bestowed by the teacher.

Contemporary literature reviews maintain that the teaching approach chosen by educators is typically linked to the current teaching philosophy. For many years, a deep-rooted teaching philosophy, evidenced by a teacher-centered, stimulus-response learning approach, was not challenged. An example is evidenced with the Behavioristic teaching philosophy of Skinner’s stimulus-response and one of its matching teaching approaches – the communicative competence approach: an immediate and automatic response to the language stimulus presented. With changes in the philosophical views on education, educators began to question the prevailing teaching methodology. A major consequence of this event was a corresponding change in the approach classes were taught. Since the initial move to accept change in the educational philosophy, a continuum of changes in both philosophy and teaching methodology has evolved. Most recently, an interactive teaching philosophy has emerged where it is stipulated that for learning to occur, an interactive social process that directly involves the learner needs to be present. As a result of this latter theory, some teaching approaches have made major changes towards becoming interactive, thus complementing the teaching philosophy of interactivity.

One of these interactive teaching approaches involves computer technology. Since the inception of the computer in the educational domain over 25 years ago, there has been an ever-growing inventory of studies showing positive learning results with computers. However, almost all of these studies have dealt with computer technology in areas outside the Arab World. As of this writing, next to nothing has been investigated in Bahrain or in the Arab World on empirical studies involving computer technology in the educational arena. From this state of affairs, an expressed need by Bahraini government officials was made to investigate computer technology in the Bahraini public school sector. Specifically, the question that the Bahraini government wanted this study to answer was ‘What, if any, is the effect of using computer technology in language learning classes?’

Objectives of the Study

The Bahraini Ministry of Education voiced a need to investigate if the positive learning with computer technology that has been reported in numerous studies throughout the
world would also apply to its public school students. More specifically, the Ministry requested an investigation into the area of computer technology and language learning.

Towards this objective, the stipulations of this study requested the investigation:

- To design a communication skills teaching model using information and communication technology (ICT);
- To incorporate the model into the course curriculum;
- To define the relative teaching and learning theories;
- To define the assessment model; and
- To assess the results of the study.

**Importance of the Study**

The importance of this study is to gain insight into the benefits of using ICT in language learning situations. If the results are positive, language teachers could use this knowledge to reshape their instructional methodology, in the endeavor to help students learn language in a quicker and easier format. The knowledge obtained from this study could further clarify the distinction between the use of traditional methods of teaching language to Bahraini students and the use of technological methods. If positive learning is achieved, this knowledge could pave the way for future studies where ICT could be considered for use in other language skills, as well as in other disciplines in the Bahraini public school sector.
Chapter Two
Orientations of the Ministry of Education

Based on the English Language Syllabus for Basic Education, published by the Directorate of Curricula in the Bahraini Ministry of Education (1995), a number of factors have been stipulated for comprising an effective EFL syllabus. Among these factors are (1) a recognized need to shift from traditional approaches to social approaches, (2) a flexible syllabus with a venue towards its presentation in a communicative/functional approach, (3) a division between teaching grammar explicitly and implicitly, (4) a recognition of the changing roles of the student and the teacher based on the situation, and finally (5) a need for a non-threatening environment.

In the Syllabus, three specific sections are relevant to this study: Aims and Objectives, Writing, and Evaluation.

Aims and Objectives

As the students involved in this study are in their second year of studying English, the aims and objectives for the second year were considered. In the Content section of Language Functions/Structural Exponents for Year Two of English education (p. 26), a number of functions and structural exponents to be mastered are given. The objectives stated in the Syllabus that coincide with the objectives slated for the testing period of this investigation (Units 8 to 14 in English Together: Pupils’ Book 2) are: [1] future tense, using ‘going to’ (p. 32), [2] use of ‘wh’ words in relation to time (p. 28), [3] personal pronouns (p. 27), [4] seeking permission, using ‘can’ (p. 29), [5] adverbs of frequency: always, sometimes, (p. 33), [6] expressing time (p. 28), [7] prepositions (p. 33), and [8] use of words related to different weather conditions (p. 31).

Some objectives for Units 8 to 14, stated in English Together, do not appear in the Syllabus, and vice versa. For example, the use of the expression ‘by’ as in ‘by bus’, ‘by train’ does not appear in the Syllabus but appears in Unit 14. While it is clear that a textbook would not normally contain all of the objectives given by an institution, the objectives in the text that are taught but do not appear in the Syllabus may be considered a matter of concern. At the same time, the argument that no syllabus can be complete in its scope may apply here.

Writing

The section on ‘Writing’ in the Syllabus states Specific Objectives for the first through sixth year. There is no indication which objectives should be learned in each year. In addition, the skills are not listed in a graded order from basic to complex, thereby making an educated guess of which skills apply to the second year not possible.

Some asymmetrical questionable performance objectives according to their class year are evident. For example, two entire years (4/5) are dedicated for the student to be able to ‘write dictated words’ while at the same time, the students in grade 4 are expected to also be at the level where they can “write simple sentences describing pictures/objects according to listed properties” (p. 17). Thus, the students in grade 4 might be able to reach the level of being able to write simple sentences by the end of the year, but are then, when they begin grade 5, regressed back to being instructed on writing words when they begin their next year.
Concern here is focused on the need to devote two years to teaching writing words while also expecting the students to be able to write sentences and more. In general, a more thorough analysis of performance objectives, their difficulty level, and the time allocated to their learning is recommended. A gradual advancement in difficulty in the objectives needs to be more structurally presented.

**Evaluation**

This part of the Syllabus clearly shows the importance of evaluation. It affirms the purpose of evaluation being the measuring stick for student progress as well as the measuring stick for evaluating the methodology for teaching. However, no explicit guidelines are given to ensure that students are evaluated on the stated objectives to be learned.

Two major types of evaluation are given: summative and formative, from which diverse forms of these two evaluations are exemplified, such as diagnostic tests, continuous assessment, and self-assessment. Peer evaluation and self-evaluation are not only encouraged, but are deemed to be the most effective kind of evaluation by the writers of the Syllabus. These types of evaluation are not conducive to a teacher-centered classroom but rather work well in a student-centered classroom.

Evaluation of writing is considered a recording of testing “actual language production” (p. 65). This contention is questionable, and at most, unclear. By claiming that writing is merely a reproduction of spoken language, the known differences between oral and written language is disregarded. In addition, learning theories related to writing (e.g., writing process, discussed in the Review of the Literature section), which hold that writing is not linear, but is instead, a cyclic process, are disregarded.
Chapter Three
Review of the Literature

Computers in Bahrain

No known academic study has been reported on actual computer use in Bahraini schools. Of the two known works that touch on ICT and education in Bahrain, the discussions deal with recommendations for implementation and/or survey findings. The first paper (UNESCO, 2002) suggests a plan for the implementation of Internet usage in Bahraini educational establishments, supporting its plan with the logic that “ICT has the potentials to facilitate the shift from a teaching model to a learning model of education” (p. 49), thus supporting a shift from the traditional teacher-centered classes to the more recently advocated student-centered classes.

The second document discusses the possibility of the usage of the Internet in Bahraini secondary schools (Mandoura & Dahlawi, 2001). It presents its survey results related to the number of computers in Bahraini schools, how they are used, and teacher and student attitudes towards computer use. Although 97.6% of the students surveyed report that they have computers in their schools, the number of computers was sometimes less than one to a class. In addition, 85% of the teachers report that the computers are used for text processing documents, such as for typing letters and reports. This use could be attributed to the reported 60-70% of teachers who state that they do not know how to use or do not use the computer at all. The survey results also show that students are taught how to repair and assemble computers in case they need to obtain a computer maintenance job later on. During the four years of computer classes, the curriculum illustrates, year-by-year, the ‘talking about’ using the computer and not the actual using of the computer. The concept of using the computer as a means for learning subject material is not employed. Networking and multimedia techniques are also not utilized.

Computers in the Arab World

Use of the computer in educational situations elsewhere in the Arab World is sparsely presented in investigative articles. In an article published in 2001, Tawalbeh reports on the development of information technology in Jordanian public schools during the period 1984-1998 and shows that the introduction of computers into the educational system has been facilitated due to the cooperation of governmental policy. No known investigation on the effect of this introduction of technology in the Jordanian schools has been reported. However, in a document written one year later, (Fattah, 2002) reports on elementary schools being wired and on universities having established dedicated information technology colleges. In addition, this latter document reports that specialized computer-related courses are being conducted year round.

In Egypt, Bahaa el Din (1997) cites the Egyptian Minister of Education’s support for modern technological training in Egyptian elementary schools. In the Minister’s speech, he says that it is necessary for tomorrow’s professionals to be prepared to fully interact with the language of tomorrow, and the way to prepare the students would be to start training them to use technology early in their education. Even so, one published study on the effects of technology in Egyptian schools (Tawila et al., 2000) reports that the culture of the Egyptian
educational system discourages innovation in teaching methodology, thus seemingly obliterating optimism for using computer technology in their schools.

In another study on the Arab culture and computer technology, Piecowye (2003) observes that women in the United Arab Emirates are not affected by the culture of the computer. Rather, Piecowye reports that the UAE culture is reinforced through an establishment of communication lines with other UAE women throughout the world. Piecowye further suggests that UAE women consciously choose the elements of global cultures that they see fitting for them while maintaining their own cultural values and practices.

In 2003, the Government of Saudi Arabia embarked on a nation-wide project to install 17,000 computers in 845 Saudi schools throughout the Kingdom. This project is in line with the Saudi Government’s strategy to integrate information technology into the educational system. No known research on the effects of this technological project has been reported.

During the last ten years, Lebanese schools have been witnessing a proliferation of computers in classrooms. However, this growth appears to be attributed more to keeping up with the times than to advancing in technological possibilities in the educational arena. During the process of revising the national curriculum, private efforts were made to integrate the computer as a tool (Ghaleb, 2000) into the English curriculum. Nonetheless, the efforts were rejected and instead the curriculum was written to teach the computer as a science – to understand the inner functioning of the machine and to understand how to write computer programs. There are currently no known empirical studies that have investigated the results of using computers in the Lebanese educational arena. Yet, personal comments made to this researcher by some instructors using computers in their classes, admit to a situation of not knowing what to do with the technology. They recognize the need to modernize in their teaching, but are unsure of how to apply the technology. Thus, most teachers simply report that they use the computer class to teach ‘about’ the computer. In addition, some instructors admit to unfavorable results in their classes that ‘teach about the computer’. These classes show reports of ennui, lack of motivation, and even some levels of animosity towards the computer.

Computers on the International Level

Research findings on the importance of computers in language learning classrooms has changed from a beginning of being regarded as unimpressive (e.g., Streibel, 1986), rising to its current status of its being highly positive (e.g., Murphy, 2001). A comprehensive listing of international results in using the computer is detailed in the CMC and InterChange section (Chapter Four) of this report.

Computers and Teaching

Although the educational rationale for employing computers in classrooms was not defined in its earliest uses, unsupported claims were that the computer was originally accepted because of the deficiencies of the reigning traditional approach.

Inasmuch as some educators tend to maintain that once a new approach is adopted, the older approach needs to be discarded, others acknowledge that there must be some merit in the older approaches, as generations of students have learned using them. Garrett (1991) agrees and argues that any of the seemingly discarded traditional approaches can be
comprised in computer education. The way the computer is used and the context in which it is used determine the efficacy of the use of the computer (Chiquito et al., 1997).

While the teaching approach that is used in a computer class can affect the success or failure of the learning process, the type of computer program that is used is equally – if not more – important to determining success or failure. Numerous studies (cited in Chapter Four) have shown that computer classes with high percentages of success are those classes that employ a program that has the capability for social, interactive features, thus matching the contemporary teaching philosophy of interactivity. This category of computer programs is frequently referred to as computer-mediated communication (CMC).

**Writing, English as a Foreign Language (EFL)**

Two major schools of thought on development of ideas during composing exist. There is the one that claims that ideas are identified before composing begins and the other that claims that ideas are discovered during the composing process. The first school of thought holds that writing is merely a transcription of ideas that are fully developed before writing begins. Towards this end, most EFL students perceive writing classes to be places where grammar-based instruction and the expectation of perfection in grammar use are the rule, even though this orientation may impede the development of their writing (Jacobs, 1982). When unskilled or EFL writers write, they are usually distracted from exploring their ideas because of surface-level concerns (Perl, 1980), and they often wind up with ‘first thoughts’ papers. They plan less than skilled writers do, writing one grammatically correct sentence after another. They rarely rescan their work except for surface-level errors (Faigley & Witte, 1981). In addition, they spend little time considering who their audience is (Flower, 1979). EFL students appear to be convinced that the grammar-based approach is how writing is accomplished, because the pedagogy with which they are taught insists on imparting grammar-based approaches criteria to teach writing. Because students are given little opportunity to explore their thoughts while writing and are taught with an approach that focuses on product, EFL students assume that writers know beforehand what it is they will say.

The second school of thought on the development of ideas holds that both skilled writers and unskilled writers – who can be native or foreign speakers of the language – often discover their ideas during the composing process (Taylor, 1981; Emig, 1971). Skilled writers allow meaning to evolve during the writing process as their discovered thoughts are placed in an ‘incubator’ while they plan their paper. As the skilled writers compose, they read what they have written to facilitate what comes next. Numerous writers have reported that although they begin their paper thinking that they know what it is they will write, they are surprised to see that they actually change their ideas as they write. As the writing progresses, they withdraw thoughts, previously placed in the incubator, to complete the paper (Zamel, 1983; Emig, 1971). The knowledge that ‘the writer will not know what he wants to write until he begins writing’ supports the thought of the discovery of ideas during the composition process.

**Attitudes Towards Technology in Education**

The perception of teachers, students, and parents are crucial to the application of technology. Seeing that technology is a major shift from the traditional methodology of teacher-centered instruction, the perceptions of those involved can be major causes to its acceptance or rejection. Positive affective states, such as enjoyment or less anxiety, can
provide the learner with additional incentive to learn. Ellis (1994) found a direct correlation between affective feelings and learning. Donaldson & Morgan (1994) claim that when students have a positive emotional state – e.g., a decrease in anxiety and an increase in enjoyment – their enthusiasm for learning increases. Krashen’s Monitor Model (1978) advocates that more and better learning takes place with a lower anxiety level.

Three relevant studies focus entirely on attitudes toward computer use in a language-learning classroom. Beauvois and Eledge (1996) examined the attitudes of university students in America toward using computers and found that most students, regardless of their personality profiles as measured by the Myers-Briggs Type Indicator personality test, perceive CMC discussions to be beneficial linguistically (value), affectively (confidence and liking), and interpersonally. Ritter (1993) reports that American students’ anxiety levels were reported to be lower when they used technology; also, when their anxiety levels were lowered, students became more active participants in the learning process. In a study that surveyed Lebanese university English teachers’ attitudes towards the computer, Soubra (1996) reports that computer knowledge and computer experience are related to affective reactions (confidence and liking) but not to evaluative (value) reactions. In addition, she concludes that teaching experience does not have any effect on teachers’ attitudes. Few articles deal with teacher training for using technology. Daud (1992) provides some suggestions to help teachers use technology more comfortably. Motteram (1992) proposes that the inclusion of technologies in teacher training will enable teachers to become more critical of available software. Okinaka (1992) reports that teachers who have positive attitudes towards technology are more likely to pursue additional training especially since the pace of keeping up with innovative uses of computer technology can be challenging.
Chapter Four

Computer-mediated Communication (CMC) and InterChange

Given the more popular view that all writers – skilled, unskilled, and EFL – discover their ideas during writing (Zamel, 1983; Enig, 1971), a method that allows the writer to further pursue his or her thoughts would seem to be recommended. Skilled writers would benefit from such a method by being offered a venue to discuss and expand on the topic. Unskilled and EFL students would benefit by being placed in a discussion group that is focusing on the topic, and not on the grammar being learned. Such a method might encourage discussions that would eventually allow the student to have more time to discuss and rethink his/her ideas on the topic. This could ultimately help the student produce more fully developed arguments. For those who espouse the theory that writing is a process, the effects of using a CMC class for EFL students could result in positive learning. CMC allows for process-oriented discussions on thoughts, thus giving the student more time to discuss and rethink about the topic. The presentation of written thoughts, the questioning and/or commenting on these thoughts by others, the rewriting of the thoughts, and so on, are readily presented in the format of a CMC program. In addition, CMC can alleviate specific EFL composition problems (Finholt, Kiesler, & Sproull, 1986). For students with fears of participating, CMC classes can provide a venue for them to be heard in the same voice as all classmates are heard, consequently encouraging their participation.

CMC classes have been found to offer a venue for the students to collaborate and be able to broaden their knowledge of the topic being written about. Selfe (1988) and Swain (2000) report that CMC encourages collaboration among EFL learners. Ohta (2000) holds that collaboration for EFL students is paramount to learning a second language. With this collaborative spirit, EFL students in a CMC class can be exposed to considering topic information from different perspectives. Cohen and Riel (1986) suggest that using CMC interculturally is highly advantageous because writing for an audience with different cultural traditions and ways of thinking requires students to pay particularly close attention to content and clarity in order to avoid misunderstanding. As a result, EFL students in a CMC class can be given the opportunity to focus on the meaning of ‘what’ is being written about rather than only on the ‘how’ it is being written.

InterChange

For the purposes of this investigation, InterChange, a computer-mediated communication (CMC) designed application in the Daedalus Integrated Writing Environment (DIWE) program was chosen. InterChange is a real-time (immediate, asynchronous) tool that uses simple local area networking capabilities to allow for text-based classroom discussions. With InterChange, the interfacing of the individual computers in an enclosed area enables its users to send and receive written messages to and from other users. The InterChange networking connection is similar to the concept of how telephones are connected. In lay terms, it can be called a visual telephone party line. The only way the user can be ‘heard’ is by writing.

CMC does not function with a single user. The minimum requirement involves the presence of at least two users to interact on a topic under discussion. This feature allows for one-on-one communication as well as one-to-many. Messages can be shared with the teacher, an individual, a group, or an entire class – either locally or at a distance.
The InterChange screen is divided into two sections: a section in which students and/or the teacher can type in their out-going messages, and a section in which the in-coming messages can be viewed and reviewed, by selective scrolling. Once the user logs on to InterChange, messages from the participants are sent and received in real-time. Turn-taking rules are not needed, and many problems typically encountered in foreign language classrooms – such as accents, fear of public speaking, or an opportunity to speak – disappear. In addition, all the (written) language produced in the InterChange session can be saved and sorted according to sender or to chronological order. From these transcripts, learners can reflect on what they or others say thus gaining an opportunity to monitor their own language production as well as that of others.

The pedagogical benefits of CMC as facilitated through programs, such as DIWE, has become one of the most commonly discussed topics in foreign language literature (Salaberry, 1996). One of the most important reasons that InterChange has received a good deal of attention from second language teaching professionals is that it enables students to have meaningful and authentic conversations with others in the target language. Unlike many non-CMC (individual) computer applications, InterChange seems to promote meaningful human interaction that can foster the language learning process. That is, advocates claim that CMC programs such as that found in InterChange can be an excellent medium for cultivating social relationships within or across classrooms, resulting in collaborative, meaningful, and cross-cultural human interactions among members of a discourse community (Warschauer, 1997; Salaberry, 1996).

Additional advantages of using CMC technology are long and have been repeated in a number of studies. The following inventory is only a sampling of the total acknowledgments attributed to CMC technology. In the majority of the following studies, InterChange (DIWE) is the focus of the investigations. Findings from these studies show: (1) equality of participation (Kitade, 2000; Lamy & Goodfellow, 1999; Warschauer, 1998), (2) opportunity to negotiate lexical meaning and a wider variety of discourse functions through interactional modifications (Toyoda, 2002; Sotillo, 2000; Blake, 2000); (3) alleviation of traditional obstacles such as pronunciation (Faigley, 1989); (4) enhancement of the writing process (Thorson, 2000; Ghaleb, 1993); (5) setting where errors are not the focus of learning (Ghaleb, 1993); (6) lesser percentage of errors (Gonzalez-Bueno & Perez, 2000; Brière, 1966); (7) more writing production than in regular face-to-face classroom-based activities (Blake, 2000; Sullivan & Pratt, 1996; Ghaleb, 1993; Faigley, 1990; 1989); (8) easier mode for acquiring vocabulary (Blake, 2000) and abstract words (Tsou et al., 2002), (9) opportunity to enhance the noticing, reflection, and subsequent focus on form (Kitade, 2000) through self-correction of mistakes (Salaberry, 2000; Yuan, 2003; de la Fuente, 2003); (10) production of better language (Braine, 1997) with higher values on syntactic complexity and lexical range measures than with face-to-face oral discussions (Warchauer 1995-1996); (11) more peer and teacher feedback (Ogata et al., 2000; Braine, 1997; Hoffman, 1995-1996; Chun & Brandl, 1992); (12) increased learner autonomy with decreased teacher control (Sullivan & Pratt, 1996; Hoffman, 1995-1996); (13) higher rate of self-esteem and confidence (Davis & Thiede, 2000; Braine & Yorozu, 1998; Beauvois, 1994; Dunkel, 1990); (14) a developed awareness of language composition structures (Otowski, 1998); (15) an aid for basic writers (Batschelet & Woodson, 1991); (16) supporting tool for collaboration (Mabrito, 1992); (17) venue for a greater sense of audience (Spitzer, 1990); and (18) an opportunity for gaining linguistic and psychological benefits (Gonzalez-Bueno & Perez, 2000; Sullivan & Pratt, 1996; Warschauer, 1995-1996; Beauvois, 1994).
Learning theories embedded in InterChange

While education is understood to be a consortium of theories that, together, give the final effect of education, selective learning theories within this grouping can be analyzed as being an integral part of the CMC classroom environment. More specifically, in the InterChange sessions of the Daedalus Integrated Writing Environment (DIWE), at least five learning theories can be recognized. The first theory is the ‘writing as a process’ theory. In 1971, Janet Emig conducted her innovative study that argues that writing is not linear. Instead, Emig contends that writing is a recursive, coiling process where precise language meaning is reached through social language interaction. Only through actually writing down words, can one begin to reach his/her ultimate goal of writing what is intended. Through the process of writing, having others read and respond to what is said, rewriting, re-responding, and so on, until the real intentions of the writer are visible on the printed page, can writing be achieved. With InterChange, discussions revolve around the writing, and rewriting of thoughts, revised as a result of the interaction of other discussants.

A second theory, evident in InterChange, is the ‘writing as a social process’ theory. Computer-mediated communication combines several features that make it a powerful new medium of social interaction in the classroom (Warschauer, 2000). Based on research that embraces Vygotsky’s (1930) social learning theory that words and their intentions and situations are learned as a unit, writing is seen as not being universal but rather as being social (Giroux, 1983). Thus, writing cannot be viewed in isolation from the culture or environment in which it occurs. Taking a social view of writing includes rejecting the assumption that writing is a private matter. Instead, it embraces the view that writing is a reflection of the specific culture or environment. The cognitive viewpoint of social learning is limited in that it is focused solely on the individual experiences of the participants (Bizzell, 1982). However, with a program like InterChange, the cognition that is eventually revealed stems from the lives and experiences of the class members. Many educators place dialog at the center of the process of teaching and learning (e.g., Laurillard, 1993). Echoing Vygotsky’s socially oriented approach (1930), researchers concur that language learning is fundamentally a social process – the result of interaction between participants and their contexts (Kafai & Resnick, 1998; Norton, 1997; Lantoff & Appel, 1994). Audience knowledge, culture, experience, and emotions are a part of the discussions held during an InterChange class. In this kind of communication, the interactive and reflective aspects of language merge into a single medium.

The third and fourth theories, the positions of grammar instruction and error correction in writing classes have been major research focuses over the years. Numerous case studies over a span of 80 years have suggested that grammar-based approaches do little to increase writing ability (e.g., Underwood, 1984; Lauer, 1980) and consequently grammar instruction should not be the focus in writing classes (Raimes, 1991; Zamel, 1985). Both native and EFL language learners in grammar-based programs seem to perform well enough in classes, but their work shows little improvement when they are faced with real-life situations where they have to write on their own. In Seliger’s (1979) experiment with native and EFL English students, he found no correlation between the ability to state a grammatical rule and the ability to apply it correctly, either with native or EFL students. Dvorak (1977) found that students in classes where grammar is not explicitly taught do not perform worse in terms of grammar than those students who receive mechanical practice and error correction. Garrett’s 1988 study of teaching, learning, and language acquisition research reports that language acquisition results from direct use of the language and not from rote memorization...
of the grammar. In InterChange classes, the focus is on what is being said, thus giving grammar a secondary importance.

In fact, a few studies have reported adverse effects resulting from using the grammar-based approach to teaching language. Harris (1962) conducted a study on native English-speaking children in two different writing classes, with the major difference between them being that the control class studied formal grammar in writing sessions while the experimental class devoted its time to direct practice in writing. Although both classes were taught grammar, the control class followed a logically organized program of traditional grammar instruction, while in the experimental class grammar instruction was provided when specific kinds of errors came to the teacher’s attention. Results of the study show that the grammar teaching in the control class had a negligible or even a relatively negative effect upon the correctness of the students’ writing. Reber (1967) reports that providing students with formal rules substantially lowers their performance. Students given the rules of the language do less well in “acquiring” (e.g., innate knowledge versus “learning”, conscious awareness) the rules than those students who are exposed to the rules informally. Hunt (1989) shows through his description of the writing experiences of a young child, how responding to ‘what’ is said rather than responding to grammar errors, helped him correct his grammar use.

Errors can be both beneficial and destructive, and for this reason, care must be taken in how errors are treated. In studying a second language, errors can serve as a helpful transition towards learning the target language. According to some educators (e.g., Horning, 1987, Krashen, 1982), a learner acquires a language in a pre-set sequence, ignoring any rules that are imposed out of the pre-set order; errors will be self-corrected when the learner is ready to perceive the rule. Just as the child makes errors, such as overgeneralizing, after continued exposure to use of the language, he/she will come to understand the correct form when he/she is ready. These educators maintain that second languages are learned in a similar manner. When errors are used merely to point out flaws in the hope that they will not be repeated, they can become destructive, especially for EFL learners. An obsession with errors can be a barrier that keeps the writer from having anything to say (Rose, 1980; Shaughnessy, 1977). Less skilled writers, and especially EFL students, become so inhibited by their concern for correctness that they cannot get very far in the development of their ideas (Perl, 1979). With InterChange, the discussions are typically conducive to meaningful topics. The format of InterChange does not promote error correction but rather information correction.

The presence of a non-threatening environment in InterChange classes illustrates the fifth learning theory. Primarily because it de-emphasizes grammar and errors, the CMC class enjoys the reputation of being a non-threatening environment, and consequently, students enjoy participating in class activities (Roberts, 1987). Research on computer environments and traditional classroom environments show that the computer class exhibits a less threatening environment (Selfe & Meyer, 1991; Wilkins, 1991). In another comparative study, Greenleaf (1989) reports that the computer class was more active, with students collaborating in their writing and enjoying the class more. Cohen & Riel (1986) rationalize that although students from some cultures take longer to relax and write freely in this unusual environment, when they witness their classmates taking risks and succeeding, they back away from the traditional rules and formats that had inhibited their earlier writings. In addition, Cohen & Riel found that the smooth flowing of ideas in a relaxed environment resulted in reduced global errors. Finally, these researchers hold that the non-threatening environment
heightens the students’ positive attitude towards learning and consequently allows the students to pay more attention to content and clarity.

Despite the long list of studies given above, none have focused on students in Bahrain or even in the Arab World. Subsequently, this investigation has set out to obtain empirical data on the effects of using an interactive CMC program, InterChange, in 5th grade Bahraini public school classes.
Chapter Five
Methodology

This study was designed as an experimental study to examine the possible benefit(s) that CMC might have on Bahraini public school students in their English-as-a-foreign-language (EFL) class. The starting date for the study was selected for early February 2004. Four trips to the testing area were planned to (1) meet with officials and assess the state-of-the-art situation, (2) conduct teacher-training workshops, (3) observe some classes, and (4) discuss the experiment with the teachers.

A sample selection of public schools in the Bahrain was selected, equally divided between schools for boys and schools for girls. From a listing provided by the Ministry of Education of 25 schools for girls and 22 schools for boys, every other school from each of the listings were chosen – resulting in 12 schools for each gender.

As students in the Bahraini public school system begin to study English in the fourth grade, it was deemed that the fifth grade – where the students had already been taught one year of foreign language – would be an appropriate class level to investigate. Equality of knowledge of the English language among fifth graders was assumed. Within each school, an experimental and a control class was randomly chosen, with an equal number – as much as possible – of teachers who teach both the experimental and the control classes, and of teachers who teach only one of the two types of classes. In each class, there would be a computer for each student, one for the teacher, and one to function as the file server.

In an initial interview with some teachers during the first visit, it was understood that teaching objectives were identical throughout the public school system; and, the time schedule for those objectives were identical. Participating teachers in both the control and experimental classes were requested to administer a pre-test to their class, the contents of which would be the exact same test that would be administered to the class as the final test (post-test). In other words, they were to include in the pre-test the questions that would be given at the end of the semester to evaluate the students’ learning of the curriculum objectives.

After the experimental classes were administered the pre-test, they were scheduled to use InterChange in their English language writing classes over a five month period. At the conclusion of this testing period, they were to be given a post-test for measuring the degree, if any, of learning (APPENDIX 1). The control classes were also scheduled to take a pre-test, being isolated from any influences of the experimental treatment, and also to undergo five months of their traditional methods of learning. At the end of the testing period, the control classes were scheduled to be administered the post-test for measurement of learning. The investigator would observe two experimental and two control classes towards the end of the observation period.

The degree of learning between the two testing periods (pre and post) of the two types of classes would then be compared. If any one of the two types of classes showed greater improvement, it could be reasonably concluded that the presence, or absence, of technology could be the rationale for the difference.
The DIWE program was to be installed in each of the participating schools. The teachers that would be chosen to teach the CMC class would be asked to attend a one-day workshop on the use of the chosen software and its possible applications in the school curriculum. After a thorough review of curriculum objectives and discussions with administrators and teachers on these objectives, sample lesson plans would be designed for use with InterChange. In addition, the distribution and acting out of EFL sample lesson plans for use with InterChange would be conducted.

The data will be obtained from the following sources:

1. Pre and post-tests
2. Surveys/questionnaires
   a. Teachers (APPENDIX 2)
   b. Students (APPENDIX 3)
   c. Parents (APPENDIX 4)
3. Ethnographic information

For the pre and post-tests, a measure of the specific curriculum learning objectives slated for the testing period would be selected as key questions for evaluation. Based on the national curriculum these objectives are: (1) use of the progressive tense, (2) use of wh words, (3) identification of what time it is, using words, (4) use of ‘by’ in phrases related to transportation, (5) use of words that identify the weather, and (6) use of words that are related to activities. At the end of the testing period, the pre and the post-test of each student will be graded based on these objectives, and a comparison between the two grades will be made. Finally, a comparison between the grades of the two types of classes (experimental and control) will be made. Other statistical evaluations will be conducted.

The ethnographic information will be a straightforward report on the investigator’s observations.
Chapter Six
The Study

Methodology as Actually Conducted

There were four major changes in the original design of the methodology. The first change was in the time set to begin the study. Although this date was originally planned to commence in early February, major problems delayed the beginning to different schedules, starting with early March, and extending on a continuum with other classes to late May. Thus, some classes used InterChange for only two sessions while others used it for up to sixteen sessions. The major cause of postponement in starting to use InterChange was the delay of equipping the classes with computers while other classes did not have their networking system operational.

The second major change involved the number of schools participating in the study. Due to the delay in computer and/or networking installation in some of the schools or due to the concurrent participation in another study (Guided Reading), the number of schools originally slated for the study dwindled. At least two schools, not on the originally selected list, were added to compensate for those schools that had withdrawn from the study. Thus, from the original 24 schools chosen for the study, 15 schools remained: 8 schools for girls and 7 schools for boys.

A third change involved the number of students in each experimental class. Where the original methodology called for one student per computer, this ratio changed. In each experimental class, there were a total of 30 computers. Of the 30 computers, one was reserved for the teacher and one for file server purposes, thus leaving 28 computers for the students to use. However, it was realized that in a large number of the experimental classes, there were more than 30 students enrolled, resulting in some students having to share a computer. In addition, there were incidents of at least one computer becoming temporarily dysfunctional in some classes. This would increase the number of students having to share a computer.

Halfway into the study, the investigator received the pre-tests from the teachers. A survey of many of the tests showed that – despite the previous assurances of the teachers and administrators of uniformity in objectives being tested – the test contents were dissimilar. In addition, many of the schools totally omitted asking questions relative to the learning objectives. Thus, there was little, if any, means to be able to evaluate the learning of the curriculum objectives. Means with which to compare pre and post learning became impossible. This major change in the original plan resulted in the need for the researchers (1) to devise and distribute a uniform post-test for all participating students that would allow for a comparative assessment of how well experimental and control classes use the objectives in the researcher-made post test and (2) to cancel the pre- and post-test comparisons of individual students. These alterations represent the fourth major change in the study.

Visits to Bahrain

Four visits were made to Bahrain. The first visit, December 6 and 7, 2003, was generally a fact-finding trip. During this visit, three major purposes were slated: meeting
Meetings were held with Ministry officials, school administrators, teachers, and computer technicians. In these meetings, all concerned voiced a general positive attitude towards technology. No problems with using technology were envisioned by officials, administrators, teachers or technicians. When asked about teaching objectives and time schedule for teaching these objectives, the teachers stated that the curriculum was centralized in that the Ministry set the objectives and the time frame for teaching the objectives; thus objectives were identical throughout the school system, and the time these objectives were taught was also uniform. The only aspect that was not uniform was the teaching methodology. Teaching methodologies used were a matter of individual teacher preference. When asked about students’ capabilities in English, most teachers said that their students had, at least, reached the level of writing a paragraph. Although some teachers felt their students were still at the basic sentence writing level. During the discussions, it was noted that a number of teachers only had a ‘fair’ oral command of English themselves. Meetings with various computer technicians were also conducted. The technicians interviewed expressed confidence in overseeing and solving trouble-shooting problems in the networking classes. When asked if they had local area networking software available, all gave positive responses. Some of the technicians reported that they had taken specific classes for networking.

The second purpose of this trip was to visit a sampling of the schools that would be participating in the study. During the visits, the computer classrooms were visited. Overall, the rooms were well set up and furnished. Most of the classrooms were well lit. Thirty computers were set up in each computer room. At least one printer was available in each classroom. Computers were arranged, facing the wall, around the classroom. In smaller classrooms, computers were also placed in the center of the room, one next to the other. The chairs were computer-friendly. In some classrooms, white boards were present, in others, traditional blackboards. Hanging on the walls were computer-usage related posters, such as, naming computer paraphernalia or how to care for your computer.

The third purpose of this first visit was to provide the Ministry with a computer technology attitude instrument (APPENDIX 5) to be distributed to participating teachers prior to the commencement of the observation period. The instrument was divided into two sections, one for obtaining demographic information: gender, name of school, position, highest degree obtained, number of years teaching English, self-evaluation on computer knowledge, computer experience, use of computer as a tool. The second section contained 33 attitude questions categorized under three attitude dimensions: confidence in using the computer, perceived value for using the computer in the educational arena, and partiality towards the computer. The instrument was adapted from that used by Soubra (1996) in her study on attitudes towards computers. A panel of four judges who were university English or Education majors had established validity and reliability for the instrument. Estimates of internal reliability of the instrument (alpha coefficients) were computed for each subscale. For the confidence subscale, alpha was equal to .81, for the perceived value subscale, alpha was equal to .78, and for the partiality towards the computer, .90. Each category was allotted an equal number of questions, some presented in positive statements, others in negative format. Teachers were asked to respond to the questions by selecting one of four Likert Scale responses ranging from ‘strongly agree’ to ‘strongly disagree’. No option for ‘undecided’ was made available. The purpose of this instrument was to measure the attitudes of the teachers towards computer technology before using the computer.
The second visit took place between March 13 and 18, 2004. The major purpose for this trip was to conduct workshops on how to use InterChange, and to illustrate how to integrate lessons using InterChange. Two workshops were arranged, one for female teachers and one for male teachers. During the first workshop, given to the female teachers, and after a short oral presentation of the theoretical basis for using CMC, a hands-on workshop session was planned. However, it was discovered at the beginning of this session that the networking set-up was not functional. What resulted was an impromptu session of a pretend, simulated InterChange class, where a ‘what you will see on the screen’, took place. Sample lessons from the DIWE software package for EFL students were orally presented. In addition, a lesson plan was illustrated for an objective from the 5th grade textbook.

A few minutes before the end of the second workshop with the male teachers, an expert from the Ministry had managed to get the networking system partially set-up. For the few teachers who did not have to immediately return to their schools, an actual simulation with InterChange was demonstrated. A brief lesson plan was also illustrated using InterChange.

Three purposes were set aside for the third trip, achieved during the period April 23 to 26, 2004. The first was to collect the pre-tests. The second purpose was to meet with teachers in the experimental classes and discuss any problems they might be experiencing. The third purpose was the observation of two experimental and two control classes.

With regards to possible problems being experienced, none of the teachers reported having any problems with using InterChange. In fact, the only request for assistance came via e-mail to this researcher several days after the conclusion of the trip. The problem experienced was that the teacher had forgotten how to archive lessons. While it is acknowledged that InterChange is not difficult to use, the fact that there were no difficulties being experienced by the teachers raised doubts as to the full and proper utilization of the program.

Of the four classes observed, the first was an experimental class in one of the schools for girls. The methodology used followed a traditional teacher-centered mode. InterChange had already been used once a week for five weeks (45 minutes each time) in this school. Teacher-led (oral) questions and answers about visuals that encouraged the use of pronouns and identifying time were conducted, followed by instructions to ‘write about the photo’. No interactive discussions on the computer were held prior to writing about what they saw in the photo. Some of the students refrained from writing anything even though they were told orally and in writing on the InterChange screen, to write. During the latter part of the session, the teacher noted which students were not writing, and sent written messages telling them to participate in the exercise. On a couple of occasions, the teacher sent out oral instructions, such as ‘Bushra, write a sentence!’ In addition, the teacher made some oral encouragements as well as gave oral comments about capitalization rules. Students would ask questions orally, to which the teacher then responded with a request that they write their questions on InterChange, and she would respond to them, in writing. Some students would scroll to earlier messages, read them, and then commence to write their own messages, sometimes identical to the just read messages. At least five students were observed looking at their textbooks while attempting to write their responses. Logging on and off appeared to present no problems.
In the second experimental class (boys), InterChange had only been used once before. This class session was devoted to teaching the students how to log on. The students were very slow in using the English keyboard. This weakness was attributed to the fact that this class had only begun to take computer literacy. A second drawback was that the literacy class only teaches the Arabic keyboard. For the very few students that had logged on successfully, at least three of them wrote gibberish messages, sometimes just hitting the same key in succession.

In the first control class (girls), students sat around four grouped tables. Instruction began with a teacher-led questions and answers session about the date and the weather. The focus of this lesson was on animals. Almost all of the students were actively involved in answering questions about the animals. Some questions using ‘wh’ words were presented, such as ‘Why do people kill elephants?’ or ‘What do they do with the tusks?’. Then the students played a game where one student would read a short description of an animal (provided by the teacher) and the class was to guess which animal was being described. After this semi-interactive session of question-answer, the students were instructed to write about one of the animals already discussed. Students were given papers to write on, each paper having some relative vocabulary words printed on them. In addition, other relative vocabulary words were placed on the felt board in the front of the classroom. The teacher suggested that students use the exercise in their textbook to help them get started with the writing. As they wrote and as the teacher walked around the classroom, she reminded the students about specific grammar rules. It was noticed that this instructor gave different papers to the students. When queried, she responded that for the students with a stronger knowledge of English, less vocabulary words were given; for the weaker students, more words.

In the second control class (boys), instruction was strictly teacher-centered. The lesson focused on use of the expression ‘by’ such as in ‘by bus, by plane’. For most of the class time, the teacher lectured and gave examples of how to use the expressions. It was noticed that at least three students asked to be excused during the lecture. When they returned, they opened their books and appeared to be reading from them. However, the teacher was not using the textbook at that time. Comprehension questions and written exercises were then distributed for individual student answers. This exercise was followed by instructions for the students to ‘write sentences about yourself and your partners’ with no indication for them to use the just taught expressions.

The fourth and final visit took place between June 12 and 16, 2004. The agenda for this visit included (1) the collection of: (a) the post tests, (b) the DIWE CDs that were on loan to the schools, and (c) the student/teacher/parents questionnaires, as well as (2) the conducting of individual interviews with the experimental teachers on their final comments about the program. The comments offered are cited in Chapter Eight.
Chapter Seven

Results

Table 1 presents parents’ perceptions of their children’s experience with InterChange. These perceptions generally suggest that the parents felt that their children enjoyed using computers in their English classes. However, the majority of the parents reported that they do not actually know whether the proficiency levels of their children have improved. Specifically, 55.4% of the parents reported that their children have learned a lot and 78.9% reported that the children enjoyed using computers in their classes. Over half of those polled, 51.3%, felt that using computers was an easy process for their children. Conversely, 57.6% of the parents reported that they do not know whether their children have improved their writing proficiency and 45.2% reported that they do not know if their children gained more English terms and expressions as a result of using InterChange.

The InterChange class is primarily a writing class. While it can be argued that there is a distinction between ‘learning’ and ‘making a difference in writing skills’, this distinction is a very thin line. For ‘learning’ in the InterChange class should be understood to be ‘learning to write’. Thus, the perception of the parents presents contradictory results. Overall, we could probably conclude that while there is a high level of excitement in having their children use InterChange, the parents’ perception of actual improvement in the ‘vocabulary and expressions’ and ‘writing skills’ of their children is unknown, with 57.6% + 45.2% saying they ‘don’t know’.
Table 1: Parents’ perception of the experience of their children with CMC

<table>
<thead>
<tr>
<th>Learned through using computer</th>
<th>Felt about using it in class</th>
<th>Describe process of using computer in class</th>
<th>Made difference in vocab &amp; expression</th>
<th>Made difference in writing skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>learned nothing</td>
<td>4.1%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>learned very little</td>
<td>9.4%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>learned a little</td>
<td>31.1%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>learned a lot</td>
<td>55.4%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mean 3.38</td>
<td>SD 0.82</td>
<td></td>
</tr>
<tr>
<td>didn't like it</td>
<td></td>
<td>0.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>boring</td>
<td></td>
<td>1.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ok</td>
<td></td>
<td>19.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>enjoyed it</td>
<td></td>
<td>78.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mean 3.76</td>
<td>SD 0.51</td>
<td></td>
</tr>
<tr>
<td>difficult process</td>
<td></td>
<td>4.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>somewhat difficult process</td>
<td></td>
<td>14.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ok</td>
<td></td>
<td>29.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>very easy process</td>
<td></td>
<td>51.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mean 3.28</td>
<td>SD 0.87</td>
<td></td>
</tr>
<tr>
<td>gained more terms &amp; phrases</td>
<td></td>
<td>24.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>gained same number of terms &amp; phrase</td>
<td></td>
<td>12.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>gained less terms &amp; phrases</td>
<td></td>
<td>17.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>don't know</td>
<td></td>
<td>45.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mean 2.84</td>
<td>SD 1.24</td>
<td></td>
</tr>
<tr>
<td>Slight improvement in writing skills</td>
<td></td>
<td>16.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>no improvement in writing skills</td>
<td></td>
<td>4.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>deterioration in writing skills</td>
<td></td>
<td>21.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>don't know</td>
<td></td>
<td>57.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mean 3.20</td>
<td>SD 1.12</td>
<td></td>
</tr>
</tbody>
</table>
Table 2 presents students’ perceptions of their experience with InterChange and shows the following aspects of interest. First, 70.8% of the students reported that they ‘learned a lot’, 85.6% ‘enjoyed’ using computers, 66.5% considered using computers ‘very easy’, 88.9% ‘liked’ using computers, and 83.6% used computers to ‘communicate with peers’. Second, only 22.2% reported that they ‘learned a little’. These results show that the students were generally positive about using computers for communication with peers and less positive about the ease of using computers in their classes.

Table 3 presents teachers’ perceptions of their experience with InterChange. The table shows that 20.0% of the teachers considered that students learned a lot and that 66.7% considered that the students learned somewhat more in the InterChange classes than in the traditional classes. Furthermore, 40.3% of the teachers reported that they enjoyed using InterChange and 53.3% reported that using it was ‘O.K.’. However, 20% of the teachers considered that it was difficult to use computers in their teaching, 40% a little difficult, and 14.3% reported that they prefer talking to their students to communicating with them through the computer. This shows that although the majority of the teachers felt that InterChange could be effective in improving the learning of their students, a considerable percentage of them (60%) considered using computers to be a difficult process. Likewise, the majority of the teachers either did not like using computers to communicate with their students (14.3%) or were not excited about using it as a medium of communication (57.1%).

Table 4 presents teachers’ perceptions of the effectiveness of the InterChange program in teaching English language structure and mechanics. The Table reveals that 66.7% of the teachers agreed that InterChange was helpful in teaching the ‘some/any’ objectives, 66.7% reported that InterChange was not helpful in teaching the ‘tell time’ objectives. Similarly, the teachers were divided in their views regarding whether InterChange was useful in teaching the expressions ‘by car’, ‘by bus’, and ‘by plane’. They were also divided with regard to the question of whether there was a difference in ‘learning about weather expressions’ with InterChange or without it. Specifically, while 26.7% of the teachers agreed that InterChange was helpful in teaching the expressions of ‘by car, by bus, by plane’, 33.4% of the teachers disagreed. While 33.3% of the teachers agreed that InterChange did not make a difference in learning about weather expressions, 33.3% disagreed, and 33.3% were neutral. Finally, it should be noted that considerable percentages of the teachers questioned the relevance of the InterChange program for teaching the ‘some/any’ objective (26.7%), for teaching the ‘tell time’ objective (20.0%), for teaching the expressions ‘by car, by bus, by plane’ objective (40.0%), and for learning about weather expressions (33.3%).

Attention needs to be drawn to the ‘does not apply’ column. Where each of the teaching objectives asked about in the questionnaire were obligatory objectives for the testing period, a relatively high percentage of the responses were ‘does not apply’. This can be attributed to either (a) this particular objective was taught before InterChange was installed in the class or (b) the objective was not taught.

Table 5 presents teachers’ perceptions of the effectiveness of InterChange in teaching writing. All of the teachers (100%) agreed that InterChange encouraged students to interact with other students, 86.7% agreed that it motivated students to like writing, 86.7% agreed that
<table>
<thead>
<tr>
<th></th>
<th>Felt after using computer</th>
<th>Felt about using it in class</th>
<th>Think about using computer in class</th>
<th>Communication with teacher through computer</th>
<th>Communication with peers through computer</th>
</tr>
</thead>
<tbody>
<tr>
<td>learned nothing</td>
<td>1.8%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>learned very little</td>
<td>5.2%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>learned a little</td>
<td>22.2%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>learned a lot</td>
<td>70.8%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Mean 3.62</td>
<td>Std. 0.67</td>
</tr>
<tr>
<td>didn't like it</td>
<td></td>
<td>0.8%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>boring</td>
<td></td>
<td>1.6%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ok</td>
<td></td>
<td>12.6%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>enjoyed it</td>
<td></td>
<td>85.6%</td>
<td></td>
<td>Mean 3.83</td>
<td>Std. 0.46</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>difficult process</td>
<td></td>
<td>1.5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>somewhat difficult process</td>
<td></td>
<td>13.4%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ok</td>
<td></td>
<td>18.6%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>very easy process</td>
<td></td>
<td>66.5%</td>
<td></td>
<td>Mean 3.50</td>
<td>Std. 0.78</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>didn't like it</td>
<td></td>
<td>3.6%</td>
<td></td>
<td>5.2%</td>
<td></td>
</tr>
<tr>
<td>ok</td>
<td></td>
<td>7.5%</td>
<td></td>
<td>11.2%</td>
<td></td>
</tr>
<tr>
<td>liked it</td>
<td></td>
<td>88.9%</td>
<td></td>
<td>83.6%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Mean 2.85</td>
<td>Mean 2.78</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Std. 045</td>
<td>Std. 0.52</td>
</tr>
</tbody>
</table>
Table 3: Teachers’ perceptions of their experience with CME in their teaching

<table>
<thead>
<tr>
<th>Felt after using computer</th>
<th>Felt about using it in class</th>
<th>Think about using computer in class Before DIWE</th>
<th>Think about using computer in class Before DIWE</th>
<th>Communication with students through computer</th>
</tr>
</thead>
<tbody>
<tr>
<td>learned nothing</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>learned very little</td>
<td>13.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>learned somewhat more</td>
<td>66.7%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>learned a lot</td>
<td>20%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean 3.07</td>
<td>Std. 0.59</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>didn't like it</td>
<td>6.7%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>boring</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ok</td>
<td>53.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>enjoyed it</td>
<td>40.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean 3.27</td>
<td>Std. 0.80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>difficult process</td>
<td>20.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a little difficult process</td>
<td>40.0%</td>
<td>6.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ok</td>
<td>20.0%</td>
<td>73.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>very easy process</td>
<td>20.0%</td>
<td>20.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>didn't like it</td>
<td>14.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ok</td>
<td>57.1%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>liked it</td>
<td>28.6%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean 2.14</td>
<td>Std. 0.66</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 4: Teacher’s perceptions of the effectiveness of the DIWE program in teaching language expressions and structures

<table>
<thead>
<tr>
<th>Rate the following statements by circling the number that represents the response closest to your opinion</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
<th>Does not apply</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>In teaching the objectives &quot;some/any&quot;, I found DIWE helpful</td>
<td>6.7</td>
<td>-</td>
<td>60.0</td>
<td>6.7</td>
<td>26.7</td>
<td>3.47</td>
<td>1.13</td>
</tr>
<tr>
<td>To &quot;tell time&quot;, the DIWE program did not help</td>
<td>6.7</td>
<td>6.7</td>
<td>33.3</td>
<td>33.3</td>
<td>20.0</td>
<td>3.53</td>
<td>1.13</td>
</tr>
<tr>
<td>The lesson on using the expression &quot;by car, by bus, by plane&quot; was quickly learned because of using the DIWE program</td>
<td>6.7</td>
<td>26.7</td>
<td>20.0</td>
<td>6.7</td>
<td>40.0</td>
<td>3.47</td>
<td>1.46</td>
</tr>
<tr>
<td>Learning how to ask permission with DIWE made the lesson more difficult</td>
<td>6.7</td>
<td>13.3</td>
<td>26.7</td>
<td>33.3</td>
<td>20.0</td>
<td>3.47</td>
<td>1.19</td>
</tr>
<tr>
<td>There was no difference in learning about weather expression with DIWE or without it</td>
<td>-</td>
<td>33.3</td>
<td>20.0</td>
<td>13.3</td>
<td>33.3</td>
<td>3.47</td>
<td>1.30</td>
</tr>
</tbody>
</table>
Table 5: Teachers perceptions of the effectiveness of the DIWE program in teaching writing

<table>
<thead>
<tr>
<th>I felt that for learning writing, the DIWE computer program was:</th>
<th>Agree</th>
<th>Disagree</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detrimental to learning writing</td>
<td>57.1</td>
<td>42.9</td>
<td>1.43</td>
<td>0.51</td>
</tr>
<tr>
<td>Ineffective in encouraging writing</td>
<td>13.3</td>
<td>86.7</td>
<td>1.87</td>
<td>0.35</td>
</tr>
<tr>
<td>Time-consuming for the teacher</td>
<td>33.3</td>
<td>66.7</td>
<td>1.67</td>
<td>0.49</td>
</tr>
<tr>
<td>Time-consuming for the student</td>
<td>33.3</td>
<td>66.7</td>
<td>1.67</td>
<td>0.49</td>
</tr>
<tr>
<td>No difference between DIWE and traditional way of teaching</td>
<td>33.3</td>
<td>66.7</td>
<td>1.67</td>
<td>0.49</td>
</tr>
<tr>
<td>Fun to use for the students</td>
<td>93.3</td>
<td>6.7</td>
<td>1.07</td>
<td>0.26</td>
</tr>
<tr>
<td>Fun for the teacher</td>
<td>86.7</td>
<td>13.3</td>
<td>1.13</td>
<td>0.35</td>
</tr>
<tr>
<td>Encouraged students to write more</td>
<td>86.7</td>
<td>13.3</td>
<td>1.13</td>
<td>0.35</td>
</tr>
<tr>
<td>Motivated students to like writing</td>
<td>86.7</td>
<td>13.3</td>
<td>1.13</td>
<td>0.35</td>
</tr>
<tr>
<td>Encouraged students to interact with other students more</td>
<td>100.0</td>
<td>0.0</td>
<td>1.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>
it encouraged students to write more, and 93.3% agreed that it was fun to use with the students. In addition, 86.7% of the teachers disagreed that InterChange was ineffective in encouraging writing. Strangely, 57.1% of the teachers considered InterChange to be detrimental to learning writing. This contradiction is attributed to what the researchers feel was a lack of language proficiency in understanding the meaning of the word ‘detrimental’. However, it should be noted that 33.3% of the teachers considered InterChange to be time consuming for the teachers and for the students, and that they felt that there was no difference between InterChange and the traditional way of teaching writing.

Table 6 displays the results of the Multivariate Analysis of Variance (MANOVA) test of the effectiveness of the InterChange program by school. The results show overall statistically significant differences between the InterChange program and the traditional way of teaching at the P<.05 alpha level of significance in the Arad, Al Duruz, Boury, Sakina, Sitra, Abou Saiba, Badr Al Kubra, Ibn Sina, Al Khamis, and Sumaya schools. However, the results did not reveal overall statistically significant differences between InterChange and traditional instruction in the Al Ali, Karana, Karzakan, Abu Bakr, and Yarmuk schools. Further univariate analysis revealed that InterChange was more effective than traditional instruction on certain variables at the Arad, Al Duruz, Boury, Abou Saiba, Badr Al Kubra, and Sumaya schools. Conversely, the results of the univariate analysis were generally in favor of the traditional way, rather than in favor of InterChange, at the Al Khamis School. Furthermore, mixed univariate results were obtained at the Sakina, Ibn Sina, and Sitra schools. Specifically, in the Arad school, InterChange was more effective than traditional ways in helping students use the right tense, and only with regard to writing the time in the Boury School. Yet, InterChange was more effective than the traditional way on the variables of the grammar structure of using the wh-questions, using the right tense, and writing verbs in the Abou Saiba School and on the variables of using the right tense, using the expressions ‘by bus’ and ‘by train’, using adjectives, and using different verbs in the Badr Al Kubra School.

Finally, in the Sumaya School, InterChange was found to be more effective than traditional instruction on the variable of grammatical structures of using the wh-question format.

At the Al Khamis School, traditional instruction was found to be more effective than InterChange on the variables of wh-questions, grammatical structure of using wh-questions, using the right tense, using the expressions ‘by car’, ‘by bus’, ‘by train’, using different verbs, and holistical evaluation of writing. However, the InterChange classes out-performed the traditional classes at the Al Khamis School on the variable of using adjectives related to the weather.

As for the mixed results, while the traditional classes out-performed the InterChange class at Sakina on the variable of writing the time and using the right tense, the InterChange class did better on the variables of wh-questions and grammatical structure of using wh-questions. At Ibn Sina, the traditional class did better than the InterChange class on the variables of wh-questions and using grammatical structure of using wh-questions while the InterChange class out-performed the traditional class on the variables of writing time, grammatical structure of writing time, and using the right tense. At the Sitra School, traditional instruction was more effective than InterChange on the variables of writing the time whereas InterChange was more effective on the variables of wh-questions, using the right tense, and using new vocabulary words.
Table 6: Analysis of the effectiveness of DIWE by school

<table>
<thead>
<tr>
<th>School</th>
<th>OA</th>
<th>Var 1</th>
<th>Var 2</th>
<th>Var 3</th>
<th>Var 4</th>
<th>Var 5</th>
<th>Var 6</th>
<th>Var 7</th>
<th>Var 8</th>
<th>Var 9</th>
<th>Confidence</th>
<th>Liking</th>
<th>Value</th>
<th>Climate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arad</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>Yes *</td>
<td>no</td>
<td>no</td>
<td>Yes *</td>
<td>Yes *</td>
<td>38</td>
<td>40</td>
<td>26</td>
<td>45</td>
</tr>
<tr>
<td>Ali</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>No</td>
<td>No</td>
<td>30</td>
<td>35</td>
<td>31</td>
<td>39</td>
</tr>
<tr>
<td>Al Duruz</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>Yes *</td>
<td>no</td>
<td>Yes *</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>40</td>
<td>44</td>
<td>33</td>
<td>42</td>
</tr>
<tr>
<td>Boury</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>Yes *</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>37</td>
<td>38</td>
<td>27</td>
<td>33</td>
</tr>
<tr>
<td>Karana</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>39</td>
<td>39</td>
<td>30</td>
<td>39</td>
</tr>
<tr>
<td>Sakina</td>
<td>yes</td>
<td>yes*</td>
<td>Yes*</td>
<td>Yes**</td>
<td>no</td>
<td>Yes**</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>35</td>
<td>32</td>
<td>21</td>
<td>43</td>
</tr>
<tr>
<td>Sitra</td>
<td>yes</td>
<td>Yes*</td>
<td>no</td>
<td>Yes**</td>
<td>no</td>
<td>Yes*</td>
<td>no</td>
<td>Yes*</td>
<td>Yes*</td>
<td>no</td>
<td>41</td>
<td>41</td>
<td>31</td>
<td>38</td>
</tr>
<tr>
<td>Abou Saiba</td>
<td>yes</td>
<td>Yes*</td>
<td>yes*</td>
<td>yes*</td>
<td>yes*</td>
<td>yes*</td>
<td>no</td>
<td>yes*</td>
<td>no</td>
<td>yes*</td>
<td>41</td>
<td>41</td>
<td>30</td>
<td>40</td>
</tr>
<tr>
<td>Bader</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>yes*</td>
<td>yes*</td>
<td>yes*</td>
<td>yes*</td>
<td>no</td>
<td>36</td>
<td>44</td>
<td>32</td>
<td>43</td>
</tr>
<tr>
<td>Ibn Sina</td>
<td>yes</td>
<td>yes**</td>
<td>yes**</td>
<td>yes*</td>
<td>yes*</td>
<td>yes*</td>
<td>-</td>
<td>yes*</td>
<td>no</td>
<td>no</td>
<td>37</td>
<td>44</td>
<td>35</td>
<td>48</td>
</tr>
<tr>
<td>Karzakan</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>No</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>29</td>
<td>28</td>
<td>28</td>
<td>36</td>
</tr>
<tr>
<td>Al Khamis</td>
<td>yes</td>
<td>yes**</td>
<td>yes**</td>
<td>yes**</td>
<td>yes**</td>
<td>yes**</td>
<td>yes**</td>
<td>yes**</td>
<td>yes**</td>
<td>yes**</td>
<td>37</td>
<td>38</td>
<td>29</td>
<td>39</td>
</tr>
<tr>
<td>Abu Baker</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>37</td>
<td>41</td>
<td>28</td>
<td>34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sumaya</td>
<td>yes</td>
<td>no</td>
<td>yes*</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>38</td>
<td>42</td>
<td>35</td>
<td>40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Al Yarmuk</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>38</td>
<td>42</td>
<td>33</td>
<td>38</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* In favor of the experimental group
** In favor of the control group

OA = overall, var1 = wh questions, var 2 = grammatical structure of using wh questions, var 3 = writing the time, var 4 = grammatical structure of writing the time, var 5 = using the right tense, var 6 = using the expression by bus, by train, var 7 = using adjectives in writing paragraphs, var 8 = using different verbs, and var 9 = holistic evaluation of writing.
Chapter Eight
Qualitative Analysis of Data Results

Ethnographic Observation of Schools

To attempt to answer ‘why’ school X performed better than school Y or why school X performed better than school Y in objectives 1 and 2 but not in 3, would be an attempt to make unsubstantiated guesses. For example, to understand why one school performed significantly better in learning vocabulary words about weather conditions but worse in learning vocabulary words about activities is empirically unexplainable with the data available. The common factor, vocabulary learning, should not have logically given different results. A conservative analysis would be that the statistical results can only be understood as being a consequence of some of the factors explained later in this Chapter.

Ten of the total 15 schools involved in this study show overall positive learning results in the experimental class. These schools are:

<table>
<thead>
<tr>
<th>Girls</th>
<th>Boys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arad</td>
<td>Badr Al Kubra</td>
</tr>
<tr>
<td>Al Duraz</td>
<td>Al Khamis</td>
</tr>
<tr>
<td>Sakina</td>
<td>Ibn Sina</td>
</tr>
<tr>
<td>Boury</td>
<td>Abou Saiba</td>
</tr>
<tr>
<td>Sitra</td>
<td></td>
</tr>
<tr>
<td>Sumaya</td>
<td></td>
</tr>
</tbody>
</table>

Six of the eight girls’ schools show positive results in the experimental class and four of the seven boys’ schools show positive results in the experimental class.

The five schools with positive learning results in the control class are:

<table>
<thead>
<tr>
<th>Karana</th>
<th>Abu Bakr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al Ali</td>
<td>Al Yarmuk</td>
</tr>
<tr>
<td></td>
<td>Karzakan</td>
</tr>
</tbody>
</table>

Two of the eight girls’ schools show positive results in the control class and three of the seven boys’ schools show positive results in the control class.

What follows here is a brief presentation of some observations of the classes.

Schools for Girls with Overall Positive Learning Results in Experimental Classes

Arad. As of the end of April, only three InterChange sessions had been held. The delay in beginning to use InterChange was attributed to networking problems. These networking problems recurred during the three previous classes, thus slowing the process of teaching using InterChange. The teacher reported that these problems compelled her to revert to using Word, instead of InterChange, during class time. However, when InterChange was finally used without glitches, the students and teacher thought it was “fun”. The teacher in this class felt a need for additional training in using the software. In addition, she felt that the students needed to master the other skills (listening, speaking, and reading) before focusing on writing, as she considered the students to be weak in the other English skills. A final
comment made by the teacher was that she was unable to use InterChange for all of the objectives she was teaching during the testing period. Of the nine objectives measured, three show significant learning difference. In fact, of the nine variables, the variables that show positive learning in the InterChange class were those variables that were not only positive but were significantly positive.

Al Duraz. As in Arad, the variables that reveal better learning with InterChange received significantly positive different scores. The networking system was not functioning properly until around the first of May. Other drawbacks noted by the teacher were (1) problems keyboarding in English and (2) difficulties in scheduling classes in the computer room. When DIWE was finally functioning, the teacher stated that she and her students liked it. The teacher also offered her conviction that the students were learning with InterChange in that she noticed their sentence structures were improving. She stated that she felt that she needed more training, although she said that she did not have any problems in preparing the lessons using InterChange. She also noted that the students would probably do better if they were required to take an English computer literacy course. A final comment was that if DIWE was approved for use, a rethinking of the curriculum where more time should be devoted to writing sessions.

Sakina. Students in Sakina began using InterChange on April 1. The students showed their enjoyment in using InterChange by returning to the computer room during their breaks and practicing, asking the technician for assistance whenever needed. This enthusiasm is reflected in the positive learning of the grammatical and correct use of wh-words. However, an equal number of variables reveal better learning in the control class as in the experimental class. The problems that were expressed by the teacher were (1) the need for more teacher training (2) more opportunity for student practice and (3) a resolution of the printer problems.

Boury. This school was one of the schools that begun using InterChange almost at the end of the testing period. Their first class with InterChange was on May 15. The teacher in Boury felt that she and the students had very little time to practice using InterChange (before the end of the semester), and she also felt that 30 students was quite a handful for her to teach this new program within such a short period – if there was to be any show of result with using InterChange. Another teacher sentiment was that she felt she had a diverse mixture of English ability in the same class: some students were quite proficient in English while others were very weak. In addition, some of the students were very interested in using the computer while others showed degrees of intimidation. The teacher summed up her opinion of InterChange in that despite all these drawbacks, including the fact that she was only able to use InterChange in two sessions, she still felt that there was some learning as a result of its use. The results of the statistical analysis show that the objective of writing out what time it is was the only objective that the students in this experimental class showed more learning with than the control class. Thus, even though students in the experimental class at Boury began InterChange later than other classes, they still came up with equal or higher scores than the students in the control class at Boury. The students in the control class at Boury did not score higher grades than the experimental class in any of the variables.

Sitra. The teacher in this class reported that her students showed excitement in using InterChange. This positive feeling towards InterChange is reflected in the students showing significantly better performance in four of the nine objectives with only one objective rating a higher score with students in the control class. She noted that the students told her that they
enjoyed their class, that “This is fun.” There was some noted collaboration among the students during their InterChange exchanges. The teacher reported that she felt the students were learning through this medium. On the down side, the teacher noted that they only began using InterChange on May 1, which she felt was not enough time to witness major learning changes. In addition, she felt that she did not have enough class preparation time for using InterChange. She expressed her hope that InterChange could be used throughout the year, and that there would be additional training for the teachers in how to use InterChange for various situations.

**Sumaya.** As with most of the other girls’ schools, the English teacher at Sumaya felt her students really enjoyed using InterChange. However, because her students were also involved in another testing program (Guided Reading) that involved additional work, she felt that the time spent using InterChange was insufficient; classes with InterChange began on May 1. She also noted that her students faced computer literacy problems, such as keyboarding, scrolling, and spacing, and that the computer technician was not usually available to help the students with computer problems during class time. As a final comment, the teacher felt that the students needed more time to be trained in using the computer. Despite all these obstacles, the students in the experimental class were still able to score significant positive differences in one variable and equal results in the remaining variables.

**Schools for Boys with Overall Positive Learning Results in Experimental Classes**

**Badr al Khubra.** All the schools involved in this experiment have male teachers for boys and female teachers for girls, except for Badr Al Khubra whose teachers are females. (This distinction is pointed out as the teachers at this school reported that in other investigations, schools for boys with female teachers typically score higher grades than schools for boys with male teachers.) The students in this school began using InterChange on May 1. The teacher reported that the students enjoyed using InterChange, and that, based on their final exam, that the students had learned with InterChange. The results of the analysis show more learning in this class with significant learning in four of the nine categories of objectives, and equal learning in the remaining variables. Weak students also showed improvement. The teacher was enthusiastic about the program, expressing a hope that she could use InterChange in all her sections in the coming year. Minor networking problems arose but were tended to quickly. The teacher felt that she needed more training in preparing her lessons. She also commented on the need to involve the parents more in their children’s use of computers in English classes.

**Al Khamis.** Students in this school began using InterChange on April 21. The results at this school show that, overall, students in the experimental class performed better than those in the control class. However, when considering the variables individually, the control class outperformed the experimental class in six of the variables. The teacher felt that the more advanced students learned with InterChange whereas the weaker students learned very little. The teacher noted that the students were enthusiastic during class time, and added that some of the parents expressed their enthusiasm as well. The teacher welcomed the change from the monotony of traditional teaching; however, he felt that he needed more training in using the software more effectively.

**Ibn Sina.** Although the students in Ibn Sina began relatively earlier (April 17) than most of the other schools, the teacher’s expected outcome of InterChange was dismal. There were more students in the class than there were available computers. The teacher felt that most of the students were very weak in English as well as weak in both English and Arabic
keyboarding and general computer skills. The teacher did not feel that InterChange made much difference in helping the students to learn. In fact, the teacher reported that many of the students focused on playing, rather than on learning, with InterChange. He also added that he felt that if the students were stronger in their English and computer skills that they would get better results with using InterChange. Still, the analysis of the results shows significant learning in four of the nine objectives. Two of the objectives scored higher in the control class.

**Abu Saiba.** This school had the highest number of positive results with six of the nine variables showing significant difference and an equal score with the control class on the remaining three variables. The students began using InterChange on April 15. The teacher reported that they had no problems with its use. The students appeared to enjoy using InterChange and the teacher reported that as a result of their final test, he judged they learned with InterChange. His students did not appear to have keyboarding problems. The teacher felt that he needed more training on using InterChange although he had no problem in preparing lessons using InterChange. In general, he felt that the program was a success.

**Schools for Girls with Overall Positive Learning Results in Control Classes**

**Karana.** The students at Karana began using InterChange on March 29. In general, there was a positive attitude toward the use of the program from the teacher as well as from the students. Even with this earlier date, there was no difference in scores for any of the nine variables. Students at this school were also involved in the Guided Reading experiment which required additional time on the part of the teacher and the students. The teacher reported that more computers were needed as some students had to double up with others in class. She also noted that although many of her students most likely do not have computers at home, some of them were Chat Room users, thus they were familiar with the set-up of InterChange. The teacher felt that she needed more training in using InterChange. She also felt that in comparison to the non-computer class that she also teaches, that the students learned more in the computer class.

**Al Ali.** Students at Al Ali began using InterChange in early April. They exhibited signs of enjoying the classes. The teacher felt that the students were learning and that their writing had improved. She felt that the program was successful with her students. However, statistically, there was no difference in any of the variables measured. The teacher felt that the drawbacks were (1) the insufficient number of computers compared to the number of students in the class, (2) the added teacher training that was needed, and (3) the unavailability of the technician for all classes. The teacher also felt that the students were very weak in English. Writing just a single word was time-consuming, as was the students’ apprehension about correct spelling.

**Schools for Boys with Overall Positive Learning Results in Control Classes**

**Abu Bakr.** There were no differences between the experimental class and the control class in any of the nine variables measured. Keyboarding and spelling difficulties appeared to dominate the problems these boys faced with InterChange usage. However, the teacher noted that the students were having fun using the program and he also noticed that there was improvement in their writing – especially their sentence structures. He particularly liked the fact that InterChange requires the students to write – and especially the weaker students. These students began using InterChange on April 17.
Al Yarmuk. As with the students at Abu Bakr, there was no significant difference in any of the variables with the students at Yarmuk. Yet, a small number of the students in this class interacted quite earnestly. They submitted questions and answers to each other. There appeared to be high motivation among these few students. However, this activity was restricted to the more proficient students. The weaker students wrote nonsense messages, sometimes just typing the same key in sequence or merely copying the exact messages previously sent. Some of the students appeared to have keyboarding difficulties. Thus, the logical reasoning for why there was no difference in the final scores could be attributed to the low scores of the weaker students, who represented the majority. The teacher felt that the weaker students needed additional time to learn the English keyboard. The teacher felt that some of the students were discouraged in using InterChange to write because they were very weak in English and did not even understand the other skills (listening, reading, speaking). In general, many of the students and the teacher liked InterChange. However, more time was felt needed for teacher training and student training. This class began using InterChange on April 19. The teacher also felt he needed more time to prepare classes using InterChange.

Karzakan. Students in Karzakan were only able to begin using InterChange on May 10. Major problems this class faced were keyboarding difficulties and the inability of the technician to always be present during class time. The teacher also noted that he did not get the Teacher’s Guide to InterChange (from the school administration). While the teacher and the students enjoyed using InterChange, the results show no difference in learning outcome. The students interacted some on InterChange. The teacher felt that more training was needed.

In summary, a scientific conclusion as to why some InterChange classes had significantly better results than others cannot be empirically made. Instead, ethnographic information obtained during the researcher’s visit to the schools is provided below. While these observations are not scientifically proven to be the factors causing the success or failure of InterChange, they are given in the hope that some degree of further understanding might be made. The general factors of individual teacher differences, diverse teaching methodologies, irregular testing of objectives, unequal English language proficiency level among students, and different starting dates for using InterChange should all be considered in trying to understand these results.

Teachers

Initially, there was a clear division in English language mastery and teaching methodologies among the 5th grade teachers involved in the study. While some of the teachers were proficient in English, others were less competent. To rule out any misconception of their proficiency based on a possible intimidation by the physical presence of the researcher, written comments of the teachers were also considered. The different writings of the teachers, such as their comments on student papers, their comments on questionnaires, and their language used in the teacher-made tests, can substantiate this observation. Another observation in some of the teachers’ weakness in English competency was noted in their responses to the questionnaires. For example, when an identical question was asked twice, but with both a positive and a negative direction, the responses contradicted each other. Postulation to the difficulty level of some vocabulary words could have been the cause for the contradictions.
Confidence and attitude towards the computer varied among the participating experimental teachers. While the general mood among the teachers was to accept the new technology, some signs of a lack of confidence in using the program were noted. For example, in one of the boys’ classes, the teacher told the students to log on, as they had been taught in the previous class. What resulted was approximately 35 minutes of helping the students log on. Once all the students had logged on, the teacher appeared lost as to what to do next. With the remaining class time, he left the students on their own to do whatever they wanted on the computer. In one of the girls’ classes, the teacher told the students to write about their school. There was no further instruction; for example, she did not tell the students to interact on what others wrote. What resulted was simply writing, without interaction from readers on what was written.

This lack of the teachers not knowing what to do in the computer class is understandable for a number of reasons. Primarily, the inability of most of the teachers to participate in a hands-on training session prior to beginning the experiment due to technical difficulties could be the major cause for their lack of confidence. Secondly, the very short time afforded the teachers to prepare lessons for use on InterChange could be a legitimate cause. While InterChange has been credited as being an ‘easy-going’ class, preparation for it is far from being simple, and needs ample time to prepare for. A third reason could be the lack of some of the teachers’ understanding of the interactive teaching methodology. For those teachers who are not interactive practitioners, the benefit of using InterChange would seem to be unclear to them. If their teaching philosophy is based on a teacher-centered, information-parting session, they might have been confused with this unfamiliar methodology. A final reason could be the lack of ‘practice time’. As with any new tool, teachers need time to be able to practice using the tool before actually teaching with it. A number of the teachers had commented on their desire to be able to have free time with the program to try things out before having to use it with their students.

The lack of teacher-readiness to use the computer has already been noted in the survey conducted by Mandoura (2001) where it was noted that 60 to 70% of teachers do not know how to use or do not use the computer at all. A number of the experimental teachers reported that they rarely use the computer or if they did use it, they used it mostly for writing letters. In fact, only one teacher said she sometimes used the computer for e-mail and Internet searches – but these instances were rare.

Since teachers are not computer scientists, technical assistance on the part of computer technicians is a necessary element to a successful computer class. While most of the classes observed had a technician available, a few teachers reported that the technician was either not available during class time or not knowledgeable enough to solve some of the problems being faced with this new technology.

Teaching Methodology

It was noted that some teachers stuck to using only one teaching methodology, instead of an eclectic variety of approaches. Diverse approaches were rarely witnessed. One class, for example, was being taught with the grammar-translation method. For the reading, speaking, listening, and writing aspects of the class, the only method being used was the grammar-translation. While the literature on the benefits of using the grammar-translation method is wide-ranging, most researchers feel that if this method is used, it should be intermingled with other methods as well. Another teaching methodology noted was that most of the classes were teacher-centered. In these classes, maintaining the students’ attention and
motivation levels was difficult. Some students were doing other things, such as reading, talking, or writing something that appeared to be non-related to the discussions underway. However, at least two teachers were observed conducting a student-centered interactive methodology for teaching in their classes. In these classes, the students appeared alert and anxious to participate.

**Students**

A division in English capability and computer literacy was also noted among the students in classes. Although it is assumed that all students in a common grade should be nearly equal in their language ability, mixed perceptions, by the teachers, of their students’ capabilities were given. For example, one teacher said her students were able to write paragraphs while two others said the students could only write short sentences. A fourth teacher said that even sentence writing was still not reached. When questioned further, the teacher with the (advanced) paragraph writers explained that she teaches four sections of grade five, and that this section was unique from all the others.

The teachers’ perception of differences in language level ability among their students was not the only measure to note the differences within the 5th grade students. Ethnographic observations confirmed the teachers’ perceptions. For instance, in one class, three students were rapidly reading and writing innovative messages on InterChange, while in the same class, other students were observed reading previously sent messages, and very slowly copying parts of those messages. And, in this same class, a few of the students just sat and did nothing. Some of the quicker students offered information, on InterChange, that they regularly used a Chat Room, and thus were quite familiar with the interactive system. A drawback to many of the slower students was an evident struggle in finding the keys on the keyboard. When some of these students were approached by the researcher and asked if they were having any problems, most did not respond. When probed further, it became evident that they could not understand what was being said to them in English.

While the number of students assigned to a class should ideally not exceed 25, administrative reasons sometimes force larger classes. The lack of a sufficient number of computers to allow for ‘one student-one computer’ could have been a drawback in helping the students. In such a situation, accommodations for additional computers need to be taken.

**Tests and Learning Objectives**

The Bahraini English Language Syllabus for Basic Education recognizes the importance of evaluation for assessing the learning or non-learning of objectives. However, the teacher-made post-tests failed to test the objectives for learning. As earlier noted in this report, teacher-made tests varied. For example, in many of the teacher-made post-tests, open-ended essays are given, but with no guides to ensure the use of the specific learning objectives. Some tests asked students to ‘write about (your school/your grandfather…’). Another type of test presented some pictures and instructions to ‘identify what is happening’. Only a few of the tests asked students to use some of the objectives that were slated for learning at this time. Thus, some of the tests were ‘open-ended’ with no focus on any of the learning objectives, and others tested one or more of the objectives.

The consequence of this failure to have uniform teacher-made tests that measured the learning of the objectives slated for this part of the term required the researchers to devise a test for all the participants that included questions about the objectives. This researcher-made
The final test became the major data source for measuring learning. The forced elimination of a pre-test/post-test comparison of individual students would have helped in the understanding of the benefits, if any, of using InterChange. Without this major means of comparison, the major means of measure became the comparison of results across the sample population, with no empirical knowledge of pre-testing standing available.

**Number of Times InterChange was Used**

An expected difference in performance based on the time spent using InterChange is understandable. Where the number of classes varied from two sessions to sixteen sessions, the proficiency on the part of the teachers and the students would be expected to improve as the number of sessions increased. Thus, for those classes with a lower number of sessions, the improvement level would be expected to be less than the classes with more sessions. However, this logical conclusion has been rejected by the results in a number of the schools.
Chapter Nine

Plan for Implementation of InterChange in Bahrain

Based on the results of this study, there is clear indication that the computer-mediated-communication program utilized (InterChange) has shown positive learning in the majority of the English writing classes observed. Despite the obstacles faced in some of the classes, such as an insufficient number of computers, English keyboarding problems, inadequate technical assistance, networking problems, and a limited number of times in which InterChange was used in class, positive learning was still made. In light of this knowledge, it is recommended that a second, more elaborate plan for using InterChange for the entire academic year in language classes should be made. If the results of this second investigation again show positive learning, a more solid recommendation for using InterChange throughout the Bahraini public school system would be in order. In addition, further inquiry into the possible use of InterChange in other disciplines could be contemplated.

Strategy for National Implementation

More specifically, a strategy for national implementation of InterChange can be envisioned. This plan would commence with a limited number of schools – more practically, those schools that were involved in the initial investigation using InterChange in English language learning classes. The logic for this being that the hardware has already been checked for functionality, and that most of the teachers have already had some experience with InterChange. Ideally, students in their first year of learning English should be selected for this second investigation, but pragmatically – and due to the current very weak level of student competency even in the second year – students in their fifth year of studying English language would be recommended as a starting point. The use of InterChange could be planned for subsequent class years, and within five years, it could be functional in all language classes. However, the manner in which it would be used during each year would be with a gradual increase in difficulty level. In addition, other applications of the DIWE Program could be introduced, such as Invent and Respond. [Invent helps learners ‘get started’ in their essay writings, and Respond cues the student in learning how to offer constructive criticism about someone else’s writing while giving the student insight of his/her own possible problems, while critiquing others.]

Using InterChange in the first, second, and third years would not be recommended, at this point in time due to the witnessed very low proficiency level of the students involved in the study. Students in their fourth year of English instruction have been eliminated from the pool because a large number of them might have been previously exposed to InterChange during their 5th grade.

Where the literature presents conflicting views on the difficulty of transfer learning – of how difficult it is to learn a second language based on the differences between L1 (native language) and L2 (target language) – the environment in the Bahraini public schools tends to conform to the theory that with major differences between L1 and L2, the difficulty level for Bahraini students is high. For instance, the students involved in the investigation exhibited difficulty in recognizing the letters of the Roman alphabet (versus the Arabic alphabet).
Other major differences, such as the direction of writing, the syntax, and the Arabic use of “wa” (and) to connect unrelated ideas also appeared to be problematic.

**Pre-requisites to Using InterChange in a New Study**

**Class Size**

The number of students in the InterChange class should not exceed the number of available computers. One computer should be designated as a file server, another for the teacher, and one for each student. It would be advisable to have at least one extra computer in case any of the computers should experience malfunctioning. If the school is unable to cut the size of the classes down, then it would be recommended to purchase additional computers.

**Facilities Needed**

While local area networking was set up for the purposes of the investigation, care should be taken to ensure that the networking set-up is solid. In addition, a networking expert should be readily available for emergency failures. A networking training workshop for all the technicians should be pre-arranged. This workshop would ensure that the technicians would be able to solve any networking problems experienced during classes. Budgetary consideration for the workshop and for purchasing networking cables and the like need to be made.

A minimum of two printers for each classroom will be needed. However, three printers would be most advantageous. With approximately 30 students in each class rushing to print out their written product, three printers – or 10 students per printer – would help avoid long lines waiting for their papers.

**Curriculum Considerations**

A major problem faced by many schools is the requirement to “teach” tomes of objectives and prepare the students to regurgitate those facts in their final examinations. What is overlooked is the fact that once the examinations are over, the learning is, in most cases, forgotten. The literature refers to this kind of learning as ‘short term’, with most researchers claiming that the learning with this method is probably unmeaningful and rote. For learning to be ‘long term’, meaningful learning needs to be planned. One method that claims it helps with meaningful learning is the Discovery Method. However, objections to this Method have been voiced, based on the extended amount of time involved in completing each objective. The up-side to this type of teaching is the ‘long term’ learning that appears to stay with the student.

InterChange is categorized as a type of discovery learning method. The amount of time it takes a student to grasp the essence of an objective might take longer than a straight-forward lecture on the objective. However, the final results usually show that when the student discovers the rule himself, that rule remains with the student whereas when the rule is dictated, its contents may be easily forgotten.

In line with this logic is the need to adapt the curriculum. A more serious consideration of objectives and goals needs to be made. In addition, a more realistic time-frame for accomplishing these goals needs to be made. Serious consideration for a ‘writing-across-the-curriculum’ approach might be made. This venue might not be totally functional.
as the majority (if not all) the classes are taught with Arabic as the medium for instruction. However, some thought might be made into the possible requiring of students studying an Arabic-taught course to write an assignment in English (on the topic studied in Arabic).

Teacher-training

The recurring comment of almost all the teachers who partook in this investigation was that they needed additional teacher-training time. The sessions should be scheduled at an optimal time for all concerned, but definitely several weeks before the beginning of the school session. This advanced training would offer the teachers sufficient time to redesign their instructional plans. Each group of teachers undertaking training should be given a minimum of four days training. The groups should be small, possible not exceeding ten teachers in each session. Training sessions will cover a number of areas. Among these areas will be: (1) a brief review of language learning theories (e.g., how writing occurs, errors, social interaction, grammar) as related to writing, (2) a (re)introduction to the software, (3) practice sessions on basic InterChange functions, (4) classes with trainer-made sample lessons to address some learning objectives, (5) classes with teacher-made proposed samples for learning objectives, (6) testing, and (7) evaluation.

Computer Literacy for Students

Students in the Bahraini Public Schools take computer literacy. However, the course objectives for the literacy class only teach the Arabic keyboard and Arabic terminologies. What is needed is to also teach the English keyboard. The learning of the basic functions of a computer keyboard, such as the keys used for tabs, ctrl, alt, caps, and others that are learned in Arabic could be transferred for use with the English keyboard. In addition, basic English terminologies, such as “send”, “scroll”, “delete” “enter”, and the like should be included in the course objectives.

Another aspect of the computer literacy course that needs to be addressed is the multiple functions with which the computer can be used. As it exists presently, the students are taught how to use some of the basic programs and applications of Word, such as ‘Power Point’ and ‘Excel’. What should be added are lessons that show how networking programs function, thus paving the way for a smoother transition to the use of InterChange.

During Implementation

Administrative Support

Attitudes toward technology in the classroom can affect its learning results. Studies cited earlier in this report show the impact of attitudes. Thus, positive administrative and teacher attitude towards the technology is a vital starting point. School administrators and teachers should be made aware of the numerous positive results reported using InterChange. While it is not expected that all administrators and teachers are computer literate, some means for informing them of the benefits and uses of networking in the educational environment need to be offered. Opportunities for free discussions and expressions of concerns and/or objections towards this new technology need to be arranged.

Scheduling classes in the computer room needs to be arranged for the entire semester. Those responsible need to make sure that students report directly to the computer room, and that they do not have to go first to their home room before moving to the computer room.
This move will ensure a full class period in the computer room, rather than wasted time moving from one classroom to another.

Another issue that needs to be addressed is the scheduling of an open or free time for using the computer room. Teachers and students should be able to have openings for them to use the computer room to review, try out or just practice using the computer. Valuable learning can also be accomplished with this extra free time – that does not involve the intimidating presence of the teacher or students.

**Technical Support**

Technical support is a necessary element for a successful experience. But before a technical supporter can help others, he/she must be totally prepared for what might develop. Adequate training in the networking system and extensive practice in using the DIWE computer program are mandatory to a smooth-running class. Teachers are not expected to be computer technicians. They are language teachers using the computer as a tool towards helping the students reach the goal of learning the course objectives. Glitches and other problems need to be solved by the computer technician, on the spot. Thus, each computer class should have a computer technician on duty during each class. Experience has shown that after several semesters of using the software, some teachers learn enough about the inner functioning of the network and the software that they can sometimes conduct classes without the presence of a technician. But, until the teachers are comfortable and knowledgeable enough, a qualified and well-trained technician should be present during each class.

**Study Plan**

After the completion of the points described in this Chapter, a second study can be envisioned for investigating the effects of InterChange on Bahraini public school students in English classes. This second study is called for due to the shortcoming of the first study in which the teacher-made pre-tests were disqualified due to a lack of uniformity among the teachers in the observed experimental and control classes in their testing format, and due to a lack of testing of the target objectives by all the teachers. An experimental pre-test/post-test study can best measure the data needed for this second study. Due to the very low proficiency levels of the students, it would be recommended to experiment on students in a higher grade who have a better level of proficiency. Very close coordination between the teachers involved in the study and the investigator need to be taken with regards to the preparation of the pre and post tests to assure conformity and observation of national objectives to be learned. An added element would be the assurance that specific objectives are taught during the testing period.

With adequate preparation of informing those involved of the theoretical background, contemporary teaching methodologies, and the possible ways of using the software, a more positive approach and implementation of InterChange can be envisioned. The results of using InterChange – its assessment – can be accomplished in different ways. One way would be the empirical findings of the study. Another way could be the individual evaluations of students work, and finally, the overall evaluation of the teachers and parents.
References


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**POST-TEST**

Educational Researches & Development Center

“Applying the ICT in Primary Education”

Name _________________________________________________________

School _________________________________________________________

Class: ____________

* Complete the sentences using one: what whose where which when

**Example:** I like the blue button. **Which button do you like?**

1. He’s from Italy. ____________________________________________?

2. _________________________________________________? Chocolate or strawberry ice cream?

3. That book belongs to Dima. ________________________________?

4. Yesterday was my birthday. ________________________________?

5. There are two books. _______________________________________

6. I go to sleep at eight o’clock. ________________________________?

* Write sentences to say what time it is.

**10:30** _________________________________________________

**4:45** _________________________________________________
* Write a paragraph about what you and your family are going to do this summer: Where are you going to go? How are you going to get there? What is the weather going to be like? What are you going to do there?

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___________________________
Dear Educator:

Your cooperation in participating in this study is appreciated. To finalize this study, your feedback is crucial. Kindly take a few minutes to answer this questionnaire. Thank you.

Dr. Mary Ghaleb
Lebanese Association for Educational Studies

Please fill in or check the appropriate answer:

1) Name of school you teach at: __________________________________________

2) Your Gender:                Male  _____                      Female  _____

3) When did you begin using DIWE in your class? __________________________

4) For how many sessions did you use DIWE? _____________________________

5) Fill in this chart to show how many times and how long you used DIWE each time: (if more space is needed, continue on back side of this page)

<table>
<thead>
<tr>
<th>date</th>
<th>how long used</th>
<th>for which objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
6) Rate the following statements by circling the number that represents the response closest to your opinion.

1 = strongly disagree    2 = disagree    3 = agree    4 = strongly agree

a. I feel at ease when I am around computers.  1  2  3  4
b. I like learning on a computer.  1  2  3  4
c. Computers can help to individualize instruction to better meet the needs of particular students.  1  2  3  4
d. Working with a computer would make me very nervous.  1  2  3  4
e. Computers are boring.  1  2  3  4
f. Computers help to motivate students.  1  2  3  4
g. Computers make me feel uncomfortable.  1  2  3  4
h. Studying about computers is a waste of time.  1  2  3  4
i. Computers cannot help weaker students.  1  2  3  4
j. I feel confident about my ability to learn about computers.  1  2  3  4
k. It is fun to figure out how computers work.  1  2  3  4
l. Teaching with computers is too expensive and time consuming to be worth the effort.  1  2  3  4
m. Computers will require students to become active learners.  1  2  3  4
n. Computers make me feel ignorant.  1  2  3  4
o. If we do not use computers in instruction, our students will grow illiterate and be deprived of a basic skill.  1  2  3  4
p. I think using a computer would be difficult for me.  1  2  3  4
q. Computer instruction will deny the students the opportunity to reason with others.  1  2  3  4
7) Rate the following statements by circling the number that best represents the response closest to your opinion.

1 = strongly disagree  
3 = agree  
4 = strongly disagree  
5 = does not apply

a. In teaching the objectives ‘some/any’, I found DIWE helpful
   1  2  3  4  5

b. To ‘tell time’, the DIWE program did not help
   1  2  3  4  5

c. The lesson on using the expression ‘by car, by bus, by plane’ was quickly learned because of using the DIWE program
   1  2  3  4  5

d. Learning how to ask permission with DIWE made the lesson more difficult
   1  2  3  4  5

e. There was no difference in learning about weather expressions with DIWE or without it
   1  2  3  4  5

8) Check if you ‘agree’ or ‘disagree’ to the following:

I felt that for learning writing, the DIWE computer program was:

<table>
<thead>
<tr>
<th></th>
<th>Agree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>detrimental to learning writing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ineffective in encouraging writing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>time-consuming for the teacher</td>
<td></td>
<td></td>
</tr>
<tr>
<td>time-consuming for the student</td>
<td></td>
<td></td>
</tr>
<tr>
<td>no difference between DIWE and traditional way of teaching</td>
<td></td>
<td></td>
</tr>
<tr>
<td>fun to use for the students</td>
<td></td>
<td></td>
</tr>
<tr>
<td>fun for the teacher</td>
<td></td>
<td></td>
</tr>
<tr>
<td>encouraged students to write more</td>
<td></td>
<td></td>
</tr>
<tr>
<td>motivated students to like writing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>encouraged students to interact with other students more</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9) Check the answer that best describes your feeling:

a) As a result of using the computer in your English writing class, you feel that because of the computer, the students
learned nothing
learned very little
learned somewhat more
learned a lot

b) Which best describes your feelings towards using the computer in your class:

I did not like it.
It was boring.
It was o.k.
I enjoyed it a lot.

10) Which best describes your ability to use the computer before and after having used it:

<table>
<thead>
<tr>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>It was difficult.</td>
<td>It is still difficult.</td>
</tr>
<tr>
<td>It was a little difficult.</td>
<td>It is still a little difficult.</td>
</tr>
<tr>
<td>It was o.k.</td>
<td>It is o.k.</td>
</tr>
<tr>
<td>It was very easy.</td>
<td>It is very easy.</td>
</tr>
</tbody>
</table>

11) Which best describes how you feel about communicating with your students through the computer?

I did not like it; I prefer talking to my students.
It was o.k.
I liked it.

12) What, if any, kind of technical problems did you have in using DIWE? How many times did you experience this type of problem? Did any of the problems interfere in your teaching?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
13) What else would you like to say about your experience in using the computer in your English writing class?
استمارة الطالب

الاسم: ________________________________

المدرسة: ______________________________________

يرجى وضع دائرة حول رقم الجواب المناسب:

1) بعد استخدام الحاسوب في صف اللغة الانكليزية، ماذا شعرت؟
   1. لم أتعلم شيئاً
   2. تعلمت القليل جداً
   3. تعلمت القليل
   4. تعلمت الكثير

2) كيف شعرت تجاه استخدام الحاسوب في صف اللغة الانكليزية؟
   1. أحبه
   2. كان ماماً
   3. لا يحب
   4. استمتعت به كثيراً

3) ما رأيك باستخدام الحاسوب خلال صف اللغة الانكليزية؟
   1. كانت عملية صعبة جداً
   2. كانت عملية صعبة بعض الشيء
   3. لا يأثر
   4. كانت عملية سهلة جداً

4) ما شعورك حيال التواصل مع المعلم من خلال الحاسوب؟
   1. لم أحبه وأفضل التكلم مع المعلم مباشرة
   2. لا يأثر
   3. أحببت التواصل مع المعلم من خلال الحاسوب
5) ما شعورك حيال التواصل مع رفاقك في الصف من خلال الحاسوب؟

1. لا أحبه وأفضل التكلم مع رفاقى مباشرة
2. لا يجلس به
3. أحببت التواصل مع رفاقى من خلال الحاسوب

6) هل هناك ما تود (بين) إضافته حول تجربتك في استعمال الحاسوب في صف اللغة الإنكليزية؟

________________________________________________________
________________________________________________________
استمارة الأهل

- اسم الطالب: ____________________________
- المدرسة: ______________________________

حضرته الأهل الأعزاء،

بطلب من وزارة التربية والتعليم في البحرين - مركز البحوث التربوية والتطوير، فمّا بتجارب تعليم التعبير الكتابي في اللغة الانكليزية عن طريق الحاسوب. وقد طبقنا هذه التجربة على الصف الخامس ابتدائي اختيرت Software خلال شهري أبريل ومايو، حيث تم تعليم عدد من المهارات الكتابية عن طريق برمجة لهذه الغاية.

يهمها كثيراً الحصول على ملاحظاتكم ورأيكم بهذه التجربة. لذلك نرجو منك التعاون في تعبئة هذه الاستمارة وإعادتها لنا إلى مدرسة ابتكار/ابنتكم بتاريخ 19/5/2004، كحد أقصى.

مع الشكر لتعاونكم.

الهيئة اللبنانية للعلوم التربوية

يرجى وضع دائرة حول رقم الجواب المناسب:

1) كيف تصفون تعلم ابتكار/ابنتكم للتعبير الكتابي في اللغة الانكليزية عن طريق الحاسوب؟
   1. لم يتعلم/تعلمت شيئاً
   2. تعلم(ت) القليل جداً
   3. تعلم(ت) القليل
   4. تعلم(ت) الكثير

2) كيف تصفون مشاعر ابتكار/ابنتكم حول استخدام الحاسوب في صف التعبير الكتابي في اللغة الانكليزية؟
1. لم يعجب/تحبه
2. كان مماً
3. لاأس به
4. استمتع(ت) به كثيراً

كيف تصفون استعمال الحاسوب خلال صف التعبير الكتبي في اللغة الإنجليزية؟

1. كانت عملية صعبة جداً
2. كانت عملية صعبة ببعض الشيء
3. لاأس بها
4. كانت سهلة جداً

هل أحدثت التجربة الأخيرة فرقاً في لغة ابنكم/ابنتكم من حيث المفردات والتعبير الإنجليزية؟

1. اكتسب المزيد من المفردات والتعبير
2. اكتسب العدد نفسه من المفردات والتعبير
3. اكتسب مفردات وتعبير أقل
4. لا إرتي

هل أحدثت التجربة الأخيرة فرقاً في لغة ابنكم/ابنتكم من حيث مهارات الكتابة باللغة الإنجليزية؟

1. حدث تحسن ملحوظ بالمهارات الكتابية
2. ما زالت المهارات الكتابية هي نفسها
3. حدث تأثير بالمهارات الكتابية
4. لا إرتي

هل لديكم أية ملاحظات إضافية حول تجربة استعمال الحاسوب في التعبير الكتبي في اللغة الإنجليزية؟

________________________________________________________
________________________________________________________
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ولي الأمر الذي مالا الاستمارة: ____________________________
APPENDIX 5

Computer Technology Instrument

Please fill in or check the appropriate answer. Your cooperation and contribution in this study is appreciated.

Name: ............................

1. Gender  Male _______ Female _______

2. Name of school you teach at: ____________________________________

3. Position at the school: _________________________________________

4. Your highest degree: __________________________________________

5. How long have you taught English? _______________________________

6. How would you rate your knowledge about computers (theory, reading about)?
   None _______ Very little _______ Average _______ Extensive _______

7. How would you rate your experience using computers?
   (a) None _______ Very little _______ Average _______ Extensive _______
   (b) How long have you used computers? _______________________

8. How would you rate your experience using the computer as a teaching tool? (Using the computer to teach another subject, such as teaching English)?
   (a) None _______ Very little _______ Average _______ Extensive _______
   (b) For how long have you used the computer as a teaching tool? ________
Please rate the following statements by circling the number that represents the response closest to your opinion.

1 = strongly disagree  2 = disagree  3 = agree  4 = strongly agree

<table>
<thead>
<tr>
<th>Statement</th>
<th>Rating</th>
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<tbody>
<tr>
<td>1. I feel at ease when I am around computers.</td>
<td>1  2   3   4</td>
</tr>
<tr>
<td>2. I feel comfortable when a conversation is about computers.</td>
<td>1   2   3   4</td>
</tr>
<tr>
<td>3. Learning about computers is boring to me.</td>
<td>1   2   3   4</td>
</tr>
<tr>
<td>4. I like learning on a computer</td>
<td>1   2   3   4</td>
</tr>
<tr>
<td>5. Working with a computer would make me very nervous.</td>
<td>1   2   3   4</td>
</tr>
<tr>
<td>6. I feel aggressive and hostile toward computers.</td>
<td>1   2   3   4</td>
</tr>
<tr>
<td>7. Computers make me feel uncomfortable.</td>
<td>1   2   3   4</td>
</tr>
<tr>
<td>8. I get a sinking feeling when I think of trying to use a computer.</td>
<td>1   2   3   4</td>
</tr>
<tr>
<td>9. I would feel comfortable working with a computer.</td>
<td>1   2   3   4</td>
</tr>
<tr>
<td>10. Computers make me feel uneasy and confused.</td>
<td>1   2   3   4</td>
</tr>
<tr>
<td>11. I am not the type to do well with computers.</td>
<td>1   2   3   4</td>
</tr>
<tr>
<td>12. I would like working with computers.</td>
<td>1   2   3   4</td>
</tr>
<tr>
<td>13. I do not enjoy talking with others about computers.</td>
<td>1   2   3   4</td>
</tr>
<tr>
<td>14. I enjoy using a computer.</td>
<td>1   2   3   4</td>
</tr>
<tr>
<td>15. Computers are boring.</td>
<td>1   2   3   4</td>
</tr>
<tr>
<td>16. Computers are not exciting.</td>
<td>1   2   3   4</td>
</tr>
<tr>
<td>17. Studying about computers is a waste of time.</td>
<td>1   2   3   4</td>
</tr>
<tr>
<td>18. It is fun to figure out of how computers work.</td>
<td>1   2   3   4</td>
</tr>
<tr>
<td>19. I enjoy learning how computers are used in our daily lives.</td>
<td>1   2   3   4</td>
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<tr>
<td>20. Computers can help to individualize instruction to better meet the needs of particular students.</td>
<td>1</td>
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<tr>
<td>21. Computers help to motivate students.</td>
<td>1</td>
</tr>
<tr>
<td>22. Computers cannot help weaker students.</td>
<td>1</td>
</tr>
<tr>
<td>23. Teaching with computers is too expensive and time consuming to be worth the effort.</td>
<td>1</td>
</tr>
<tr>
<td>24. Computers will bring about a pedagogical revolution in schools.</td>
<td>1</td>
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<tr>
<td>25. Computer adversely affects students’ analytical abilities.</td>
<td>1</td>
</tr>
<tr>
<td>26. Computers increase creativity.</td>
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<tr>
<td>27. Computers will require students to become active learners.</td>
<td>1</td>
</tr>
<tr>
<td>28. If we do not use computers in instruction, our students will grow illiterate and be deprived of a basic skill.</td>
<td>1</td>
</tr>
<tr>
<td>29. Computers can improve learning of higher order skills.</td>
<td>1</td>
</tr>
<tr>
<td>30. I feel confident about my ability to learn about computers.</td>
<td>1</td>
</tr>
<tr>
<td>31. Computers make me feel ignorant.</td>
<td>1</td>
</tr>
<tr>
<td>32. I think using a computer would be difficult for me.</td>
<td>1</td>
</tr>
<tr>
<td>33. Computer instruction will deny the students the opportunity to reason with others.</td>
<td>1</td>
</tr>
</tbody>
</table>
Please indicate your level of agreement with the following statements by circling the number that represents the response closest to your opinion.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 = strongly disagree</td>
<td>2 = disagree</td>
<td>3 = agree</td>
<td>4 = strongly agree</td>
</tr>
<tr>
<td>1. This school is organized effectively to achieve its goals.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. A positive feeling generally permeates my school.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. The school atmosphere is generally very conducive to learning for all students.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. This school provides a physically attractive environment.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. The principal is an important instructional resource in my school.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. My school has an effective program to maintain a high level of student attendance.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. Most teachers in this school are cooperative and work well together.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8. Instructional issues are often the focus of faculty meetings.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9. Fewer than five minutes per hour of instructional time is lost as a result of discipline problems.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10. Discipline is a problem in my school.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>11. Teachers in my school informally discuss instructional issues.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>12. Teachers in my school share effective ways to engage students in learning.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>13. Fewer than five minutes per hour of instructional time is lost as a result of announcements, and/or organizational activities.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>