The Impact of Information and Communication Technology (ICT) on Teaching English to College Students

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Abstract
Teaching in general and language teaching in particular has enormously changed through time. Language teaching, throughout the twentieth century, experienced massive changes and innovations to become more dynamic, active, and interactive. Language teaching in the twentieth century has witnessed diverse theories and trends which shaped language teaching based on needs, context, practicality, and availability of resources. Meanwhile, there has been the addition of information and communication technology (ICT) to the theories and methodologies mentioned. The Internet, in particular, is becoming an increasingly vital tool in our information society. In this research, which is a quasi-experimental study, we studied the effects of ICT on a sample of 55 EFL college students. The findings show that ICT enhances language learning experience and can act as an effective tool both for teaching and learning. The author hopes the current study makes its way into the education system both in high schools and universities and can persuade the teachers to integrate ICT and teaching.
Key-words: English teaching, Information & communication Technology, ICT, EFL students

1. INTRODUCTION

Due to the rapid growth of English as a result of globalization, it is now the common language of politics, science, art, and communication in the world. English today enjoys a prominent position and the number of learners is ever increasing. According to Graddol (2000), in the year 2000 there were about a billion English learners- but a decade later the numbers doubled. Students attempt to learn English as a second language to further in their career and advance in their studies. They need to practice in hearing language, reading language, speaking language, and writing language in order to develop their experience and skills (Ybarra & Green, 2003).

2. LITERATURE REVIEW

2.1 Definition of ICT

Information and Communication Technology is the use of computers or other information devices to communicate and connect to others. IT is the use of these devices to send, store, process and receive information. ICT is used to refer to the combination of computing technology and information processing. Information and Communication Technology (ICT) includes the full range of computer hardware and software, telecommunication and cell phones, the Internet and Web, wired and wireless networks, digital and video cameras, robotics, etc. (Moursund, 2005) which are used to receive, transmit, store, process, and exchange, information.

2.2 Benefits of ICT

Generally, there has been extensive attempt to integrate information technology into the teaching and learning curriculum so that individuals can acquire new knowledge, develop critical thinking skills, and solve problems creatively. It has been suggested that information technology can assist learning by enhancing students' ability to experiment, practice, and experience the real world (Papert, 1996). Meanwhile, the ability to use information technology well will affect individuals' personal productivity and economic well-being and, in general, the nations' competitive position (Castro, 1998).

Thanks to modern technological advancement, teaching and learning processes are effective, easier, and fun. IT enhances and energizes English learning. As Kalnina and kangro (2007) reveal, ICT helps increase the quality of education and meet the requirements set by the contemporary knowledge society. Information technology provides English learning and teaching with the necessary real life context and authentic material in the form of films and multimedia resources that have proved to be greatly successful for those involved to profit by and improve their learning. Therefore, information technology provides important opportunities for students seeking new and better approaches to teaching and learning, research, and public service (Carr, 2000b; Mendels, 1999).

Research indicates that information technology can be used to enrich teaching and learning for both faculty and students. Research shows that ICT helps children learn to read if used in the right way. Waller (2000) asserts that there is a strong justification for using ICT in early literacy activities. **First**, ICT is a tool that many children are familiar with. **Second**, ICT may help to provide the motivation for some children who find reading and writing difficult. Baker (2000) and Waller (2000) argue that early years teachers have a significant responsibility to foster children's abilities to read and write. Teachers are also encouraged to incorporate technology in their classrooms.

Blamires (1999) emphasizes on the 'enabling' aspect of information technology. To Blamires, enabling technology makes it possible for children to get access to educational opportunities and life experiences, and facilitates engagement with knowledge and people. He holds that speech, pictures, words, and animation can be combined in interactive ways to structure concepts to suit the level of understanding of learners and their interests. Interactive software encourages active involvement in learning and gives the user the experience of control over the learning process. This is especially important for people with learning difficulties. Learners can work at their own pace.

Words like "handicapped" and "disabled" imply dependence and inability: with computers, learners can be less dependent and more capable. To Hawkridge & Vincent (1992), information and communication technology enables students to take charge of their own learning. Students with learning difficulties will find stimulation through 'enjoyable repetition' and a steady increase in level of challenge: (Hawkridge & Vincent, 1992).

If students are using information and communication technology as a learning instrument successfully, a comprehensive evaluation of their needs is of key importance. According to Hardy (2000), this evaluation should provide information on such issues as: the learner, degree of support available, goals, and financial considerations. In a comprehensive analysis, Lou et al. (2001) discovered that learner characteristics have an impact on learning with technology. These characteristics include computer experience, gender, ability and age.

Information technology provides a tool for systematic and cost-effective assessment by replacing the labor-intensive procedures. Behavioral views of learning underlie these services, and involving dynamic assessment, to raise students' consciousness, which, in turn, motivates students to monitor their own progress. Woodward and Rieth (1997) argue that technology is here to act as a vehicle for attaining higher-quality assessment and reducing the amount of time humans invest on the assessment process.

A special form of learning and teaching environment is the computer simulated environment or the virtual environment. Virtual environment tries to realize the characteristics of real world learning. Virtual environment has the advantages of approaching the real world without having to consider the possible risks and expenses

involved in the real world experiences. Cromby et al. (1996), in a nicely-worded analysis, draw attention to three features of virtual environments which make them particularly appropriate for people with learning difficulties. **First**, virtual environments create the opportunity for people with learning difficulties to learn by making mistakes but without suffering the real, humiliating or dangerous consequences of their error. **Second**, virtual worlds can be manipulated in ways the real world cannot be. **Third**, in virtual environments, rules and abstract concepts can be conveyed without the use of language or other symbol systems.

Another important aspect of information and communication technology is, now, the wide-spread use of distance education. Distance education provides for the learner to customize learning and learn at their own comfort. Researchers view taking an online course as one example of distance education through which students participate at different times from different locations (Simonson, Smaldino, Albright, & Zvacek, 2000). Distance education has become an alternative when taking a course or earning a degree (Chu & Hinton, 2001). Colleges and universities, too, offer online courses because of the alternatives and flexibility options that they provide.

The online environment has several advantages and some disadvantages over a traditional classroom environment. Tallent-Runnels (2005) discussed best practices related to online instruction. They focused on five enabling factors for successful online courses. Accordingly, these factors include: organization of the platform, pace of learning, support for learning, resources available to students, and maintaining a welcoming environment.

2.3 The Use of ICT in Educational Settings

Foreign language teaching-learning process has been profoundly affected by rapid changes in technology. Educators and scholars strive to improve the quality and efficacy of educational programs. The question here remains as the new technology can aid this process. In the information age, and with the ever-growing changes in the needs and goals of the learners as well as taking into account learner variables and zest in the new technology, the old version of teaching and learning cannot suffice. It is known that traditional 'chalk and talk' format of instruction are not always successful and efficient (Milliken & Barnes, 2002).

Tsou, Wang and Li (2002) report a statistically significant increase in the test scores of students in a computer aided learning environment which is indicative of the positive effect of technology for realizing effective learning. Means (1994) maintains that new technologies offer opportunities for taking account of individual aptitude and interest. Recent studies in the area indicate that effective use of education technology can help education system work better and more effectively (Jonassen and Reeves, 1996). Halderman (1992) in a survey study found that a majority of teachers demand using technology better. Accordingly, teaching in the classes by means of technology provides the students with the chance of effective, faster and more permanent learning. This is in

line with Halderman's (1992) who thinks that there is a relation between success and technology use.

New technologies in foreign and second language teaching and learning have attracted educators and researchers for a long time. According to Grabe & Grabe. (2005), ICT can increase motivation, and to Duda (2005) ICT can enhance learner autonomy. Autonomy is an important issue in modern conceptualization of theories of language teaching and learning. According to Williams (2003), autonomy is the ability, of the learners, to take charge of their own learning, take decisions, determine the goals, and choose the content and methods. ICT makes for and improves autonomy by providing greater freedom and flexibility to learn at one's own pace and convenience, whether within the context of a language course or beyond. Learners benefit from a vast range of authentic language materials and resources which can be selected according to learning needs, aims, styles, strategies and preferences (Richards, 2005).

Effective use of the information and communication technology is of great use for both the educator and the student. The teacher can motivate the students and create and enjoyable atmosphere. Meanwhile, he can make up for some of the shortcomings in the instructional material by a judicious use of ICT. The teacher, also, can improve his own technical and professional knowledge and expertise. Dunkel (1990) asserted that the possible benefits of computer technology as a tool could include increasing language learners' (1) self-esteem, (2) vocational preparedness, (3) language proficiency and (4) overall academic skills.

Loveless & Ellis (2001) explain that technology has created major differences in terms of teacher roles, teaching activities, learning activities and learner roles. To Naidoo (2003), ICT can contribute to improving the quality of learning by supporting teachers who lack adequate skills and content knowledge. This article continues to discuss important issues concerning ICT and pedagogic implications. Lee and Son (2000) lists some reasons why ICT is not used in classrooms. Accordingly, these limitations of using ICT as an educational tool include: financial barriers, availability of computer hardware and software, lack of technical and theoretical knowledge and reluctance to accept the technology.

2.4 The Advantages of Multimedia Learning Environments

Houcine (2011), commenting on the advantages of the new technology, suggests that effective use of the Internet and the Hypermedia brings valuable resources to both teachers and learners and can add to goals of language teaching and learning. The goal of language teaching and learning is beyond the mere memorization of structure and vocabulary, or even the development of individual communication skills. Rather, to quote (Warschauer, 2000), the purpose of foreign language teaching, and indeed of any educational process, is to enhance the human and social development of students and their broader community.

Devin (2004), in a comprehensive study and analysis of the policies of his *Kent* school, found that, on average, a greater percentage of the students who assessed their technical expertise at higher levels, reported that they preferred to gather research materials through the Internet rather than from reference books. They also preferred to submit homework to faculty through email instead of handing in hard copy and judged that the technology had a positive impact on their education, and were better prepared for college because of their exposure to information technology. He (2004) adds that faculty and students who ranked their level of technological expertise at higher levels used the technology more intensively and had more positive attitudes toward it than individuals who ranked their technical expertise at lower levels.

Reconsidering the benefits of information technology and multimedia learning, there could be counted many advantages for the use of information technology and multimedia learning which are outlined here:

1. Arousing students' interest and curiosity
2. Promoting communication among students
3. Enhancing cultural knowledge and understanding
4. Improving teaching
5. Intensifying interaction between teacher and students. Cetto (2010) supports this position by stating that technology has broadened the spectrum of interaction while empowering the students' learning process by providing better opportunities for language usage"
6. Making course content flexible
7. Consideration of individual differences.

2.5 Challenges for foreign language learning and teaching

The success or failure of any new technology or instrument depends on those who use it. In the case of ICT, positive attitude and interest in it and a positive belief in the outcome, would help pave the way for its acceptance and wide-spread use. Obviously, a positive belief on the part of the instructor as well as pupils is very conducive in utilizing ICT in educational environments. Instructors, who teach using the electronic mode, must have a positive attitude to motivate, facilitate and guide learners (Pramela 2006). In the following figure, the interplay between these factors is brought forward.
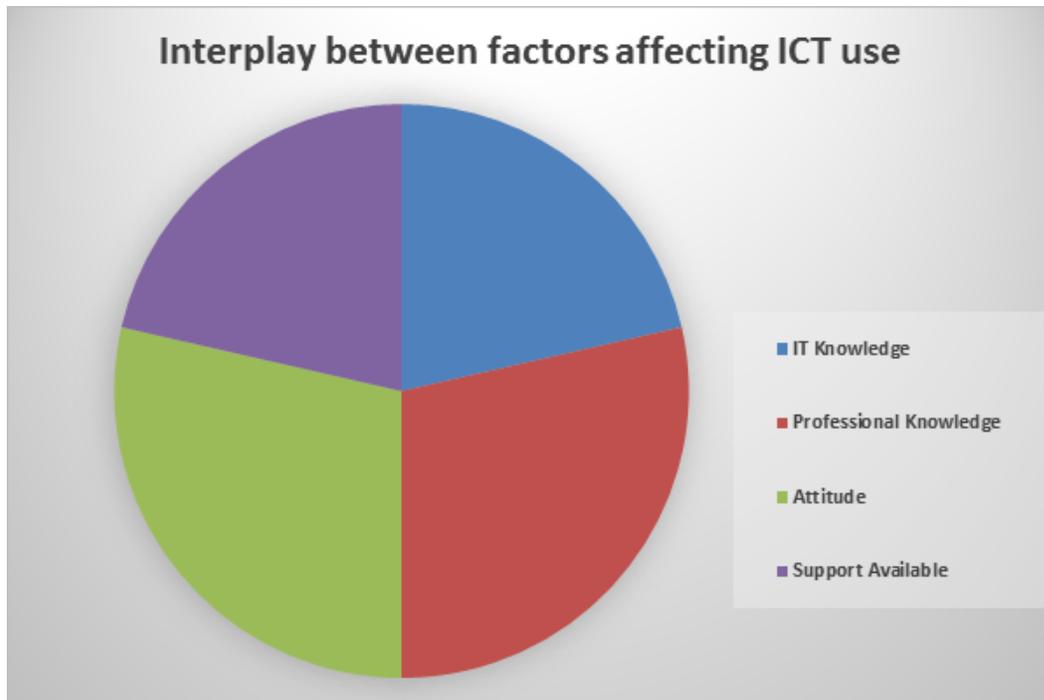
Figure 1. *The interplay between factors affecting ICT use*

Regarding ICT use and benefits, there is a controversy and conflicting ideas held by both teachers, students and researchers. Although most argue in favor of using ICT, there are counter remarks, too. As Vincent (2003) stated for some students in the class it was strikingly clear that the multimedia environment enabled vastly enhanced performance, while for others not only was it unhelpful but it actually hindered writing activities.

Some researchers have questioned the value and worth of using information technology. To (Cuban, 2000) and many others, technology is not worth spending money on it. Concerning this issue, some argue that investing on technology is not so judicious because it is underused—when indeed it is used at all (Costlow, 2001). As for educational technology, relatively few success with it has been reported (Lesgold and Reif, 1983). Further, some scholars (Turkle, 1995; Birkerts, 1994) question whether students can cope with a richness of information resources. In line with this Noble (1998) maintains that technology will produce individuals of shallow intellect. It has also been asserted that technology will routinize the educational process and deskill educators.

The use of ICT in early schooling years has been cast into doubt. Some early years education theorists are very pessimist about the advantages of using computers in

educating the young children. According to Healy (1999), ICT may cause harm to children's development because computers may replace traditional play activities and increase the possibility that they become social isolates. However, this position is not supported in the published literature.

Inadequate technical training has been the cause for Teachers' indecision to integrate technology into the curriculum (Pelgrum, 1998; Valdez et al., 1999). In line with these scholars, Pelgrum (1998) holds that the main factors to play a role in the underuse of technology include: lack of adequate preparation of teachers, lack of time to get acquainted with this new technology, and lack of software.

3. RESEARCH METHODOLOGY

3.1 Procedure

In the *experimental groups*, there was a computer for each two students. Because of lack of necessary resources, we could not have a computer for each student. Each two students were seated at a table in front of a computer. The textbook was accompanied by a CD on which all the components of the book were presented. The first part was a **pre-reading** part containing some general questions concerning the topic of each unit. This part was intended to activate background knowledge of the students and arouse their curiosity. The second part of the book was a short **reading passage** to which students listened while tracing the words on the screen. There was a list of new vocabulary on the right and the students could find their definitions by clicking on the word in the reading text.

The next part was the **comprehension** part. The participants had to answer the comprehension questions using the information stated in the text. They, also, had to guess the meaning of some new words in the text using contextual clues. This very exercise was an interesting challenge for the students. In this section students could ask their peers their own comprehension questions. They had to summarize the content of the reading passage in their own words and read it to others to compare their comprehension ability with their classmates.

After the comprehension part, there was the **structure** section of the book. Students watched pieces of films and short dialogues containing the structure. They also attended to some slides and added explanation prepared by the researcher. Afterwards, they had to do some exercises in the form of short-answer and multiple-choice questions. These questions were timed and the participants worked collaboratively to find the answers to them. After the time was finished, the computer provided the right answers as well as the percentage of the right and wrong answers. The participants also could observe their progress using charts and compare the results with the rest. They also could print these results for further analysis.

The *control group* was taught using only the textbook. Just as the traditional teaching and learning cycles, the control group read the passage and did the comprehension

questions. Then the researcher explained the structure of each unit using the board and the textbook examples. The grammatical exercises were done each student one after the other.

3.2 Participants

The author is an instructor at three universities (Islamic Azad University, Payam Noor University, and Applied Science Center) and the population of the study consists of his three general English courses presented in fall 2015. The researcher had no control over the grouping of the population. He decided to choose three of the classes at random, but due to administrative restrictions he could not randomly assign students to these three groups: one control group and two experimental groups. These students are majoring in three fields namely accounting, social studies, and medicinal plants. The sample comprised of both girls and boys in their first year of attending university. One of the experimental groups was only boys and in the other, the members were only girls. These students were assigned to three groups: the researcher used intervention for the two experimental groups and wanted to observe the effects of the intervention on boys and girls and compare the results.

3.2 Instrumentation

3.2.1 Pre-test

Since, there was no standard test for our purpose, the researcher had to develop a test. A battery of tests was implemented to collect the required data. The initial test was a general English proficiency test. The pre-test was pilot studied to find any probable shortcomings in it. Pilot study helped improve the test. This pre-test was a multiple-choice reading comprehension test comprising some short readings taken mostly from the previous university entrance exam (konkoor) and from the final exams of high school 3rd grade. Both sources were recognizable enough to credit as they were tests of nation-wide scope. All the readings were followed by 40 multiple-choice questions based on the reading. The pre-test was not timed and the students were given sufficient time to deal with the entire test items and cover them.

3.2.2 Post-test

The same test was administered as the post-test after a time interval of four months. There was no considerable test effect as the interval was long enough. Only a small number of the participants remembered to have taken the test before and so they could not logically be influenced by the pre-test. The results of the pre-test were statistically analyzed and led to the inference that the sample enjoys the required level of homogeneity as far as their general English proficiency is concerned.

3.2.3 Final test

At the end of the term, the researcher gave an exam based on the material covered in the course book. The book was based on themes on different topics such as *food*, *IT*, and

the life story of some *celebrities*. Each unit was centered on a topic in the form of a short text, followed by some general comprehension questions. The rest of each unit was devoted to structure followed by some grammar exercises to which the students were supposed to answer.

4. FINDINGS AND DISCUSSION

4.1 The Pre-Test

As indicated in the following charts, the means of scores in the pre-test suggest the all groups were roughly at the same level concerning their English background and vocabulary knowledge (experimental group boys =8.2, experimental group girls = 8.6, and the control group=8). These means indicate that the groups' performance was the same in the initial phase prior to the experiment. In this way, groups' homogeneity was ascertained and allowed for comparison. Thus, we can logically consider the failure or success of the use of ICT on college students general English.
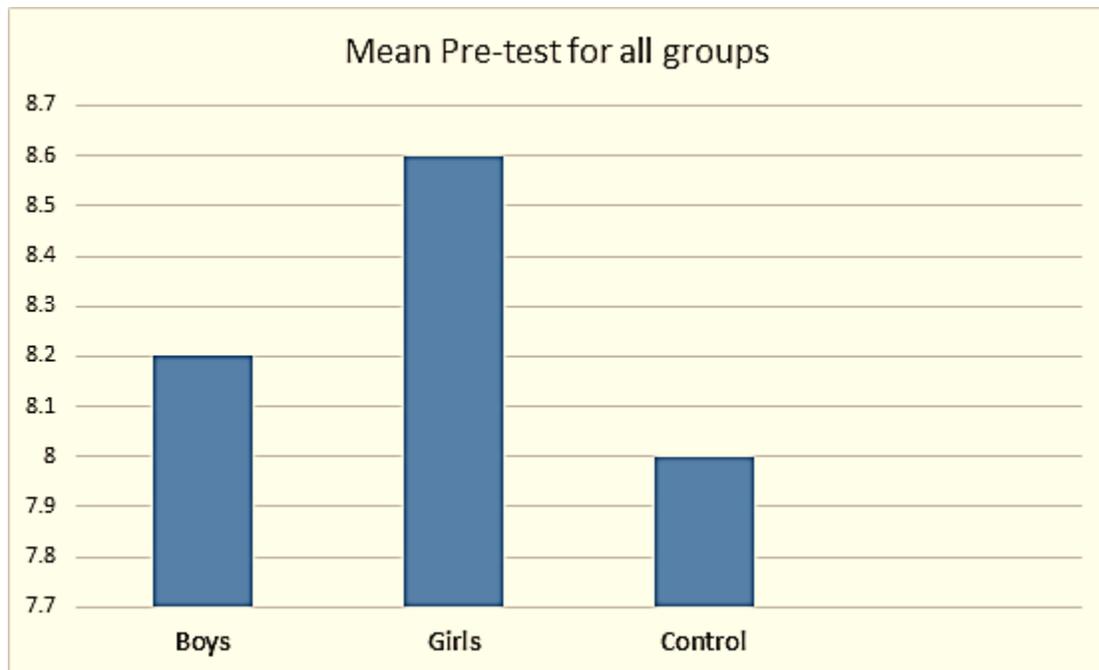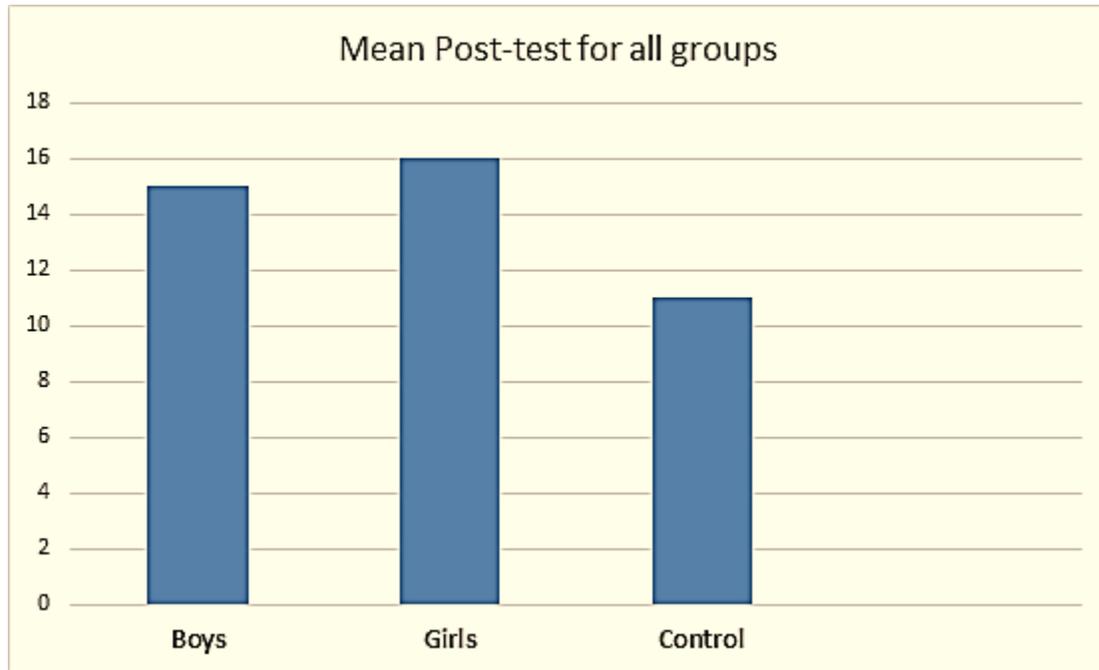

Chart 1: *Comparing the Results of All Groups in the Pre-Test*

4.2 The Post-Test

The results obtained from the post-test, emphasize the significant change taken place as a result of using ICT in the classroom. As the means in the pre-test and post-test suggest, the control group with no treatment shows no such changes and improvements

in performance. Thus, the first hypothesis (ICT has a positive impact on college students) is supported as these techniques *do* enhance students' performance.
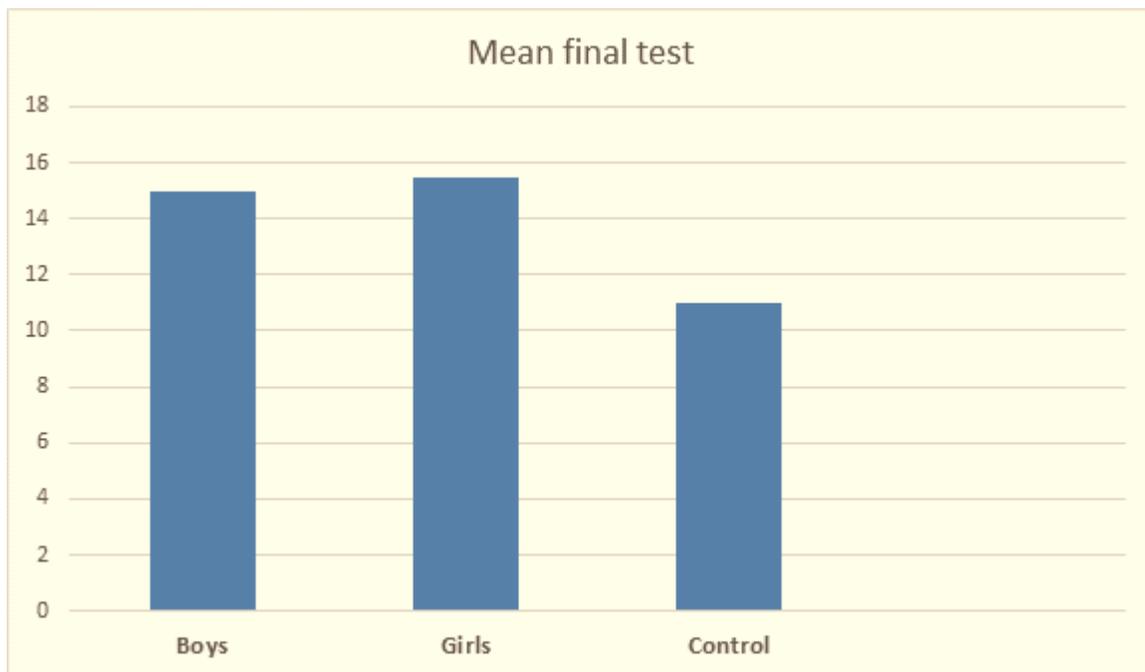

Chart 2: Comparing *the Results of All Groups in the Post-Test*

The first research question concerns the efficiency of using ICT. As confirmed by the results of the tests, depicted by the above charts, the use of ICT is helpful and all enhances performance. The second research question involves the differential impact of using the new technology on girls and boys. As the chart 4.2 indicates, girls, to a lesser degree, outperformed boys in their performance. This is of course was expected and the researcher could foretell this based on the experience he has gained in these years of teaching.

The third research question concerns the impact of ICT on high-level and low-level students. In order to operationalize high and low, the researcher decided on the English grade in the previous year; those scores above 17 formed high-level and those below 12 formed low-level. The basis for this decision was the score taken from the students' last year's examination as getting high school degree necessitates taking part in a unanimous examination. The validity and reliability of this examination is established as it is a nation-wide test which is pilot studied and all the conditions of which are tried to be kept under predefined norms and regulations. In this study, it was hypothesized that both low-level and high-level students, equally, can benefit from pre-reading techniques. The results of the study and the findings reveal interesting truths.

The analysis of the results rejects the hypothesis that high-level students can benefit more as compared to the low-level students. The analysis of the results reveals more truths on this issue. All low-level students in all the three groups made equal progress in the post-test scores compared to pre-test scores. All the high-level students, too, made similar progress in their post-test scores. This is one interesting and important finding in this study as the researcher could not perceive this before conducting the experiment.

This was a confirmation for the hypothesis. Contrary to the common belief and the supposition of the researcher, both high-level and low-level students could equally benefit from these techniques.

Chart 3: Comparing *the Results of All Groups in the Final Test*

4.3 The Questionnaire

In addition to the tests introduced earlier, the researcher made use of a questionnaire in the study to assess the impressions and attitudes of the students concerning the use ICT. The questionnaire contained 8 items with answers ranging from strongly disagree to strongly agree. This questionnaire was intended to measure and evaluate the attitudes of the participants in terms of the efficiency of ICT in the views of the students.

5. CONCLUSION

5.1 Findings

This study aimed at investigating the efficiency of using ICT on EFL college students. There were three research questions the answers to which formed the basis for the thesis. This study was conducted with 83, both boys and girls, university students who were divided into three experimental groups.

The mean of the scores obtained from the pre-test assured the researcher of the similarity of background English knowledge. The mean scores of the three groups were similar (8, 8.2, and 8.8). All the participants in all groups made progress to a large extent except for those in the control group who received no treatment. A comparison of the mean of the scores obtained from the post-test (11, 15, and 16) proves this progress and advancement.

Glancing at the scores corroborates the improvement in the scores in a comparison between pre-test and post-test. Comparing the performance of the students in the pre-test and the post-test reveals great differences. These results are indicative of a great change in the means of the scores of the groups which received treatment. Both the means and the upper scores changed dramatically which is the sign of ICT success in bringing about favorable changes in scores.

5.2 Applications and Implications

In the modern information society, the responsibility of the teachers and the education system has undergone an intense change. Now, as the traditional teaching methods fail us in the modern age, ICT is here to help. ICT provides various resources and opportunities to enhance the performance of the learners and improve the professional knowledge and expertise of the teacher. It is clear that the old "chalk and talk" technique is by no means effective in meeting the goals of the modern learner.

In the present study, there were three research questions and hypotheses. Based on the findings in the study, it could be concluded that using the new technology certainly can enhance students' performance.

The *questionnaire* used in the study indicates that a vast majority, nearly all, of the participants enjoyed using ICT. The questionnaire is of great significance in assessing the views and attitudes of the participants regarding the practicality and ease of use as well as helpfulness of ICT. In most items used in the questionnaire, students had good ideas and agreed on them in general.

The study intends to justify the use of ICT at schools and universities as a suitable tool in the teaching and learning of English language. We aim to publicize the importance of integrating ICT into EFL teaching and learning environments as a cure-all for diverse problems and make the government, education system, and curriculum planners come to the idea of the usefulness and versatility of ICT.

The results of the study can potentially change EFL teachers' attitudes about using ICT. Teachers, too, can help their students in achieving the intended change in them. They can make use of ICT and encourage their pupils to use it. The role of EFL teacher is all important in this respect. He can make up for the shortcomings in the course books through his own experience and an effective use of this technology.

Material developers, syllabus designers, parents, and all those involved in teaching and learning, can make use of these findings for providing better conditions for learning and teaching. Providing students with modern and scientific methods and techniques for learning is undoubtedly a great thing; we can help them to learn effectively and have fun.

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