EFFECT OF EDUCATIONAL TECHNOLOGY ON LANGUAGE LEARNING IN LIBYA

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ABSTRACT
This correlation-type study investigates the relationship between educational technology and the difficulties that Libyan students encounter in their language learning process. The theoretical framework includes independent and dependent variables. Educational technology and language learning difficulties are considered the independent variables, whereas language learning is regarded as the dependent variable. This study aims to determine whether a relationship exists between these two variables. In other words, this study attempts to determine the specific independent variables that are positively or negatively correlated with the dependent variable. Forty-five Libyan secondary school students, five of whom are disabled, have participated in this study. A questionnaire and a reading comprehension test are employed as research instruments to accomplish the research objectives. The results are expected to reveal that Libyan students tend to face numerous difficulties in second/foreign language learning. These difficulties include (a) lack of computer competence, (b) weak ability to use computer-assisted language learning (CALL) tools, (c) spending considerable time in translating new words using a hard copy dictionary, (d) inability to take effective notes (computer-aided self-assessment), and (e) lack of language laboratories with CALL tools. Based on these results, Libyan students lack proficiency in second/foreign language and must exert more effort in improving their language competency.

Key words: educational technology, difficulties, language learning

1.0 Introduction
Life has become easier and more pleasant after the emergence of computers that are designed to perform some basic tasks that are previously performed by humans. This type of technology has also enabled people to perform their work in a more creative manner. Such technology has become very widespread nowadays that one will feel outdated without using these tools. As computer systems become more intelligent, they are used in more work-related situations that previously require human labor. Hospitals can use computers to train their employees in dealing with life-threatening situations. Computers can also be used in airports to train experts in ensuring safety. Moreover, the police can use computers to detect and investigate sophisticated crimes.

The recent implementation of educational technology in language learning has exerted significant pressure on the academe. Educational technology refers to the use of technology in facilitating the learning processes and in improving the performance of learners.

Computer-assisted language learning (CALL) has recently become a trend as technologies continue to develop rapidly over time. CALL tools, such as video conferencing technology, have been connected to the emergence of educational technology. By opening a communication platform for teachers and students, the Internet has become one of the most important sources in language learning. Educational technology allows students to obtain individual instructions that are designed to meet their specific needs. Therefore, teachers are supposed to catch up with the new trend to
enhance the learning of their students (Alessi & Trollip, 1985; Yeh, 2002).

The effectiveness of various CALL materials depends on pedagogical designs and the manner in which teachers utilize these materials. By appropriately using computers, teachers can improve the learning process of their students in a different fashion (Warschauer & Healey, 1998). Educational technology has become an indispensable part of the learning and teaching processes. Therefore, the role of computers in education and pedagogical practices becomes increasingly important in the 21st century (Jafarian, Soori, & Kafipour, 2012).

Wei (2005) argues that the current teaching methods are becoming increasingly different from the traditional ones. Teachers act as instructors and assistants to the learning of their students. Teachers must inspire the potentials of their students and provide them with the opportunity to exercise their creative and critical thinking. Instructors assume active, inventive, and innovative roles in this modern environment of CALL. Given the significant changes in the current language teaching and learning environment, teachers must adjust their teaching methods to meet the needs of the society and equip themselves with computer-related knowledge and skills. Teachers must also possess a learning perception, train themselves in using computers, adopt new appropriate instructional strategies, and facilitate the learning of their students.

Educational technology helps language learners obtain various ranges of knowledge, thereby making language learning more interesting to these learners. Computer technology has been implemented in language classrooms to support second/foreign language learning and to explore evidence on how computer technology can enhance the acquisition of language skills. CALL embraces an extensive wide of information and communications technology applications and approaches to teach and learn foreign/second languages, from the “traditional” drill-and-practice programs that characterize CALL in the 1960s and 1970s to more recent manifestations of CALL that are used in a virtual-learning environment and in Web-based distance learning. CALL can also be extended to the use of concordances, interactive whiteboards, computer-mediated communication (CMC), virtual language learning, and mobile-assisted language learning (Levy, 1997).

Learning has become more flexible and enjoyable through educational technology. This type of learning can move outside the classroom and across smart devices that are available anywhere and at any time. Curriculum designers and developers must consider that disabled students need such educational technology to effectively communicate with other students via computers. Modern technology helps disabled students pursue their academic studies through distance learning, videoconferencing, and the use of electronic classrooms or boardrooms that can be accessed by students from remote locations. With these materials, students no longer need to visit libraries or bookshops to access or buy learning materials.

Language learning in Libya has recently adopted the communicative language teaching approach, which refers to the ability for language learners to utilize contextually, socially, and culturally appropriate language in communicative contexts. However, most Libyan second/foreign language students are experiencing difficulties in developing their communicative competence beyond the classroom because they lack a supportive learning environment. Therefore, special efforts are required to help Libyan students improve their language learning and practice their target language.

1.1 Statement of the Problems

Teaching and learning receptive and productive skills are hindered by several difficulties that must be addressed as they influence the communicative aims of language. Higgins (1988) suggested that
the teacher should feel comfortable in computer laboratories and in using teaching media to effectively use these materials. A specific computer program must also be used based on the current level of students. Otherwise, learning activities may induce disorder or uncertainty. Higgins also argued that most students should learn to use educational technology because some of them might be unable to adjust or become comfortable in using computers. The lack of comfort in using these materials can lead students to make plenty of mistakes.

Students encounter several problems when learning a new language. Although computers in language classes have an important role in the language learning process, the use of computer technology in Libyan schools and universities is hindered by several difficulties, such as the lack of computer laboratories. The existing equipment and facilities in these institutions also have some limitations, and most teachers may be unable to learn how to use these tools. Libyan students are also facing the following difficulties in using these tools to learn a second or foreign language:

Time and effort: Time and effort are required to facilitate language learning. Libyan students waste considerable time when they are using spreadsheets or paper, whereas teachers waste substantial time in checking these sheets, especially when they are teaching more than one subject. Reading printed text (hard copy) is more difficult than reading electronic text (soft copy), and the texts in some of these sheets become incomprehensible when they are photocopied.

Accuracy: Using traditional teaching methods makes Libyan students feel bored in their classes, thereby affecting their learning performance. These methods emphasize comprehension as students passively receive information from their teachers. Therefore, these students neglect the information on the sheets that are provided to them by their teachers because the amount of such information is too excessive for the brain to handle within a single period.

Poor pronunciation: The poor pronunciation skills of some teachers in Libya can negatively affect the learning of Libyan students. Pronunciation and oral skills are currently being taught in second/foreign language classrooms, but the adoption of these technologies is not prioritized in Libya.

CALL tools also hinder Libyan students from applying new technologies in their language learning. These tools are directly related to the designing of curriculums and educational policies in Libya. They also lack a methodology, and the students are in direct control over these materials. CALL tools include email, electronic dictionaries, concordances, CMC, and word processors. The use of these tools does not involve any interaction between teachers and students in and out the classroom because the teachers do not employ projectors and interactive whiteboards (smart boards) when teaching a language course. Teachers also cannot publish online exercises for their students, whereas the students cannot enroll themselves in a language class via the course website. Most teachers in Libya do not utilize multimedia systems (edutainment) in their classrooms, even if these tools can significantly enhance the interaction between teachers and students as well as make the language learning process faster, easier, more effective, and more enjoyable. Libyan students are also affected by the technology incompetence of their teachers. Both students and teachers are unfamiliar with computers, such as in using multimedia programs that are required in language classrooms, including reading comprehension, writing, oral, and listening comprehension activities.

According to Warschauer (1998) teachers post vital information on bulletin boards and reminded their students about their assignments and test scores. Moreover, teachers always spend considerable time in contacting mechanics and programmers when dealing with computer crashes. Teachers also design curriculums and revise their teaching materials to satisfy the needs of their
students. Therefore, teachers assume multiple roles in their respective courses.

1.2 Research Questions

To achieve the research objectives, the following questions must be answered:

(1). Does a correlation exist between educational technology and the difficulties that are encountered by Libyan students in their language learning process?

(2). Does educational technology enhance the motivation of Libyan students in learning a language?

2.0 Literature Review

Previous studies on the importance of utilizing new technology in learning a language and other related literature are reviewed in this paper.

2.1 History of Using Educational Technology

Educational technology was developed in the second half of the 20th century. Computers, which have been used in schools in developed countries during the 1950s, continue to develop throughout the world. These devices have become more powerful, faster, easier to operate, more convenient, cheaper, and more capable of processing and storing a larger amount of data than before. Various computer equipment, such as hard disks, CD ROMs, laser disks, and printers, has also developed rapidly. Using these equipment enables computer programs to produce sound, pictures, and videos. At the end of the 20th century, computer-mediated communication and the Internet have reshaped the use of computers for language learning. Computers are no longer considered tools for information processing and display, but also tools for information processing and communication. With the help of the Internet, language learners can simultaneously communicate with speakers of their target language all over the world (Gündüz, 2005).

2.2 Multimedia and Language Learning

Multimedia utilize several forms of communication and have been integrated into the CALL classroom. They include various media, such as texts, graphics, animations, sound, and videos, as well as create various integrative language environments. Students can obtain multimedia resources and navigate their path by pointing and clicking the mouse. Several teaching aids have been placed at the disposal of language teachers over the years. Charts, slides, rewritable CDs, videos, overhead projectors, and many other technological innovations have replaced the traditional chalk and board, although not completely. Multimedia technology helps students monitor and correct their course of learning, thereby enhancing their learning effectiveness (Jayachandran, 2007).

2.3 Computer Competence of Teachers and Students

The computer competence of teachers affects the effectiveness of their teaching. Teachers act as facilitators, designers, guides, and assistants during the teaching process (Warschauer, 1998). Therefore, the technology competence of teachers must be enhanced. If teachers remain incompetent, such as in presenting multimedia contents, applying systematic teaching models, and utilizing multimedia sources, they cannot integrate technology into their teaching (Wei, 2005). When applying technology in their classroom instruction, teachers must familiarize themselves with the operation of computers. Teachers with the same abilities and interests must gather together in
teacher-development groups to design curriculum, arrange teaching materials, discuss related problems, and share their experiences to reach their expectations and goals. Teachers must be able to learn how to use computers to improve the computer competence of their students. To push for technology teaching, students must also be familiar with using computers. To reduce their burden and enhance the effectiveness of their teaching methods, teachers must train their students as group leaders to aid them in their courses. They must also maintain close contact with computer programmers as well as collaborate with group leaders in maintaining the operation and management of various educational technology tools, such as e-learning campuses, bulletin boards, discussion forums, online tests, and chat rooms (Wang, 2000).

2.4 Computer and Language Skills

Computers have become widespread in educational institutions and homes over the past few years. Based on multimedia computers, integrative CALL tools emerged in the late 1980s and early 1990s, and the Internet was aimed to integrate the four language skills (i.e., listening, speaking, writing, and reading) (Warschauer & Healey, 1998). Language students must involve themselves in a more authentic learning environment. The rapid development of the Internet equips computers with additional features that facilitate worldwide communication and provide users with real-time access to materials.

Computers present learners with a range of activities for developing their language skills. These devices provide a useful and motivating media for both integrated skills and separate activities. Computer software and the Internet provide both students and teachers with materials for integrating language skills. Computers help language learners develop their reading skills in the following aspects: (a) Incidental reading. Most CALL programs, whether reading-oriented or not, require the learner to read text to complete an activity. (b) Reading comprehension. Traditional question and answer CALL programs are used for developing the reading comprehension, grammar, and vocabulary of learners. (c) Text manipulation. Computers can manipulate continuous text by requiring the learner to inspect the content and structure of the text, such as through shadow reading, which provides students with authentic texts. Sentence structuring, speed reading, and cloze-reading are some alternate means of developing the reading skills of language learners (Warschauer & Healey, 1998).

Word-processing programs transform the computer into a sophisticated and flexible writing aid that can improve the writing skills and attitudes of students toward writing. The major principle of word-processing programs is based on the capacity to freely manipulate text. By writing text into the memory of a computer, the writer can play around with the text to his/her satisfaction. The word-processor allows students to practice their writing in a guided, free manner. Vocabulary, grammar, punctuation, and reading tests are relevant in developing the sub-skills that are required for writing (Duber, 2000). By providing something to write about, the computer stimulates both the writing and speaking skills of learners.

Oral communication is critically important in the language learning process. Language classrooms presently emphasize the oral activities in which learners use the language that they have learned to communicate with one another. These activities include simulations, role-plays, and discussion. Computer simulations provide a stimulus for such work by offering students with a focus for their oral activities and a continually changing scenario for them to talk about. Computers contribute to the development of oral skills if they are employed wisely (Hammersmith, 1998). In computer-aided pronunciation, technology increases the access of learners to theirs and others’ pronunciation performance through visual displays, such as spectrographic analyses of individual phonemes or amplitude waves showing levels of intensity for isolated words or phrases (Anderson-Hsieh, 1992).
1994; Hardison, 2004; Molholt, 1988). These programs can also provide learners with immediate feedback regarding the accuracy of their utterance compared with that of a native speaker (Landon & Tanner, 2009).

Listening activities that use CALL tools are also critically important in language learning. One method of practicing listening comprehension is the use of a multiple-choice or a fill-in program in conjunction with a CD-R. Aside from providing feedback after answering a question incorrectly, the computer can let the learner re-hear the relevant part of the CD-R to enable him/her to reconstruct a summary of a recorded anecdote on screen with the help of the DVD. These activities not only help integrate listening and writing skills, but also evaluate the listening comprehension skills of learners (Jones & Fortescue, 1987). Moreover, CALL provides language learners with individualized instruction and immediate feedback on the accuracy of their responses to computerized tasks (Nagata, 1993).

2.5 Review of Related Studies

Emhamed (2011) investigated the attitudes of Libyan English language teachers toward the integration of educational technology in teaching EFL at secondary schools in Sebha. Emhamed aimed to determine the difficulties that were encountered by teachers and students when using such technology in the classroom. Forty Libyan teachers were recruited to obtain information on their attitudes toward the use of educational technology in teaching EFL students, their plan to integrate such technology, the types of technology that they utilized, and the problems that they encountered during the integration of such technology. A semi-structured interview was also conducted with eight randomly selected respondents to collect in-depth data on their attitude toward the integration of educational technology and the difficulties that they faced during the integration. The data were analyzed using the Statistics Package for Social Science (SPSS). Most Libyan teachers showed positive attitudes toward the integration of educational technology in teaching EFL students, but were facing several difficulties in such integration, such as time constraints and lack of administrative support. Libyan teachers must continuously incorporate such technology in their teaching to improve the effectiveness of the language learning process.

Abukhattala (2014) examined the utilization of educational technology in language classrooms in Libya by performing semi-structured interviews. Fifteen teachers of English language at secondary schools in Misurata-Libya were recruited, but three of them refused to participate. The interviews revolved around three themes, namely, comprehending the technology, the types of technology, and the cultural and traditional methods of teaching and learning. These teachers complained about the lack of financial support, the scarcity of educational technology in schools, and the lack of training in using modern technology. However, they were all willing to use such technology in a language classroom.
2.6 Conceptual Framework

Based on the literature review, the issues and theories that underlie this study are illustrated in the following diagram:

![Conceptual Framework Diagram]

Diagram 1: Conceptual framework

This study involves independent and dependent variables. Language learning is used as the independent variable, which leads and affects the dependent variable. This research aims to determine any correlation between the independent variable and the dependent variable as well as attempts to determine whether the former is positively or negatively correlated with the latter.

![Diagram 2: Relationship between the independent and dependent variables]

Diagram 2: Relationship between the independent and dependent variables

Two hypotheses and two sub-hypotheses have been formed based on the preceding framework. These hypotheses are stated as follows:

H1: Educational technology is positively correlated with language learning.

H1a: Educational technology is positively correlated with the scores in reading comprehension by using computer technology.

H1b: Traditional language learning methods are negatively correlated with the reading comprehension scores.

H2: Language learning difficulties are negatively correlated with foreign/second language learning.

3.0 Methodology

Research design is a framework that specifies the methods and procedures for collecting and analyzing the data for answering the research questions and problems. This study examines the relationship between educational technology and the difficulties that are faced by Libyan students in
their language learning process. This study focuses on secondary school Libyan students.

3.1 Sample

Gweyi (2014) suggested that the researcher should describe and identify the characteristics of the study population. The sampling method and the actual sample size are described in this section. The study population involves secondary school Libyan students. The sample must be based on some agreed percentage of the population from which it is obtained. A constant percentage, often 10 percent, can be applied when the sampling populations of all types and sizes are wrong (DePaulo, 2000). The questionnaires will be administered to 45 Libyan secondary school students, of whom five are disabled.

3.2 Instruments

Several researchers, such as Leide (1977) and Pratt (1980), reported that most correlation studies used questionnaires, interviews, and observations as their data collection instruments. The current study seeks to understand the relationship between the language learning process and the educational technology that Libyan students use in the classroom. Given the time constraints, a quantitative approach is employed in this research. Two instruments will be employed for the data collection, namely, a questionnaire and a reading comprehension test that are designed by the researcher. These instruments consider the manner in which the students are assessed (evaluating student performance) as well as help the researcher identify the technology/computer skills that Libyan students must possess to successfully learn a language. A pilot study will be conducted with five Libyan students to examine their understanding of the questionnaire, to improve their understanding of both the questionnaire and the reading comprehension test, and to determine any problems in understanding the questionnaire.

3.3 Data Collection

Harrington and Voehl (2014) defined data collection as the procedure of gathering and measuring information regarding the variables of interest in an established, systematic fashion, which would enable the researcher to answer his/her questions and evaluate his/her research outcomes. The questionnaires will be distributed to at least 45 secondary school Libyan students. The data collection procedure requires three days because the participants will be divided into three groups (first year, second year, and third year) to facilitate the data collection and to achieve higher validity and reliability. After gathering the questionnaires, the participating Libyan students will be given a reading comprehension test.

3.4 Data Analysis Method

The researcher must identify and describe appropriate data analysis methods for his/her study. Quantitative approaches must be described in terms of descriptive or inferential statistics. The data that are gathered from the questionnaires will be subjected to an analysis. SPSS for Windows will be used to analyze the data and to test the hypotheses. Several analysis procedures, such as descriptive analysis, goodness-of-data test, Pearson correlation analysis, and regression analysis, will be performed to determine the relationship between the independent variables (educational technology) and the dependent variable (language learning). Descriptive analysis will be conducted to understand the characteristics of the respondents, including their gender, age, and educational background. The variables, mean, standard deviation, and frequency distribution can also be determined through descriptive statistics.
3.5 Expected Results

This study aims to examine the relationship between educational technology and language learning. Some of our hypotheses will be supported, whereas the others will not. Consequently, the findings are expected to demonstrate that educational technology is positively correlated with language learning, whereas language learning difficulties are negatively correlated with language learning. The expected results will also reveal that Libyan students tend to face numerous difficulties in second/foreign language learning, including (a) the lack of computer competence, (b) weak ability to use CALL tools, (c) spending considerable time in translating new words by using a hard copy dictionary, (d) inability to take effective notes (computer-aided self-assessment), and (e) lack of language laboratories with CALL tools. Therefore, Libyan students lack proficiency in second/foreign language and exert substantial effort in improving their language competency.

3.6 Conclusion

Two important conclusions may be drawn from this study. First, the process of applying new technology in Libya is a challenge for both students and teachers because Libyan students do not apply new technologies, such as CALL tools, in their learning. Moreover, the Libyan government does not encourage the students to learn a foreign or second language as well as does not provide educational institutions that are equipped with key facilities, such as language laboratories with CALL tools. Teachers are also not trained on how they can employ such technology in language classrooms. Second, educational technology and language learning are closely interrelated, and the integration of these two can help learners successfully learn a language by increasing their motivation and making them feel that they are learning the real language. CALL can be effectively utilized as a device for enhancing the motivation of learners. Therefore, using computer technology in the language classroom will improve the motivation of learners to study a language.

The language learning difficulties that are faced by Libyan students can serve as a reference for improving language learning strategies via educational technology. The findings can also aid the teachers, curriculum designers, and material developers in Libya in employing suitable materials to facilitate and improve their learning of second/foreign language through educational technology. The researcher hopes that this study emphasizes the importance of studying the relationships between educational technology and language learning.

References


