

The Impact of Audio-Visual Aids (AVA) and Computerize Materials (CM) on University ESP Students' Progress in English Language

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Abstract

The study aimed at investigating the impact of Audio-Visual Aids (AVA) and Computerize Materials (CM) on University ESP Students' Progress in English Language. The participants of the study were Twenty Four students from the first grade who were purposefully chosen from Petrochemical Engineering Department Faculty of Engineering at University of Anbar. They were assigned to an experimental and control groups. Fifteen students were assigned to the experimental group, and Nine students to the control groups.

The instruments of the study were Audio-Visual Aids (AVA), ESP computerize materials, and post achievement test. The data of the study were collected during the first semester 2014-2015 via an achievement test.

The findings of the study indicated that using Audio-Visual Aids (AVA) , and Computerize Materials have positive effect on the experimental group students' achievement..

Based on the results of the current study, the researcher presented some recommendations.

Key Words: Computerize Materials, E-learning, Teaching English via technology , computerized text, audio-visual aids.

Introduction

The Iraqi Computer Teaching program (ICT) in Education for Iraq project is designed to build sustainable capacity in Iraqi Ministry of Education for the continuing quality improvement of teaching and learning, focusing on the use of ICT (Stensgaard, 2007).

The Audio-Visual Aids (AVA) and Computerize materials (CM) can be defined as the computer-delivered combination of a large range of communications elements—text, sound, graphics, pictures, photographs, animation and moving video. Language learning is concerned with the development of communication skills and has traditionally and creatively exploited all these communications elements in its classroom context (Chapelle, 2000).

However, the decision to integrate Audio-Visual Aids (AVA) and computerize materials (CM) into language study programs goes beyond simply purchasing equipment and software and making them available to instructors and students. The use of Audio-Visual Aids (AVA) and computerize materials (CM) in English teaching and learning is now very diverse, including the use of multimedia-based CD ROMs, E-mail and the Internet, as well as more traditional word processing and instructional software (Kwak, 2001) .

The use of technology in teaching English as a Foreign Language (EFL) setting has to be taken as a natural development in the field and the EFL community should look at the advantages that AVA and CM bring to their students, especially in bringing "life" to the EFL classroom. Life here means using the foreign language for real interaction, and learning it for communicative purposes. Using AVA and CM in EFL setting allow for a combination of sound, graphics, text, and video to be presented in one programme, which facilitates efforts to teach all four language skills by computer.

Using computers to teach E.S.P can be argued that an efficient teachers do not have to rely on the technology, but concentrates on the learning and teaching and tries to use the appropriate methodology on a particular students in a particular situation at a particular time (Dayd, 1994).

To the researcher best knowledge, currently in Iraq (after 2009) the use of computer and Audio-Visual Aids have become popular in teaching and learning. Even the UNICEF, UNESCO, and the Ministry of Education and higher Education have adopted certain plans to improve the teaching of English in the public schools and universities. The use of Audio-Visual Aids (AVA) and computerize materials (CM) and technology products has become a priority. To attain this goal, the Ministry of Education, and the Ministry of Higher Education encourage teachers and instructors to be enrolled in computer courses like ICDL, word links, and Internet. It is expected that this study will add a foundation stone to the efforts that aim to construct a reasonable and flexible AVA CM, which may help in developing learners' achievement by integrating the four language skills when learning and teaching English.

Statement of the Problem

From the researcher experience in teaching ESP at the faculties of Engineering, Science, Law, and the department of Geography, History, Islamic Science at the faculty of Education, noticed that the ESP learners continually face a dilemma using language proficiency, behavior, conversation and presentation, which they need mostly in their professional life, thus, students were still suffering from low achievement in English. This may due to the curriculum that the EFL teachers adopt when teaching ESP syllabus, or the methodology is not sufficient to develop the learners language proficiency. Therefore, this study is designed to measure the effectiveness of Audio-Visual Aids (AVA) and computerized materials (CM) on the achievement of the second intermediate students in English, and to find out the students' attitudes toward the program.

Purpose of the Study

This study is conducted to reveal how Audio-Visual Aids (AVA) and computerized materials (CM) can be effectively integrated into English teaching in the ESP contexts to develop the level of proficiency and performance of the ESP students. Moreover, it considers some of the merit and of using Audio-Visual Aids (AVA) and computerized materials (CM); problems that go with the use of AVA and CM in learning ESP are also be detected.

Questions of the study:

This study is designed to find answers for the following questions:

Are there statistical significant differences at ($\alpha= 0.05$) between the mean scores of the experimental and control groups on the achievement test in English of the ESP students' using Audio-Visual Aids (AVA) and computerized materials (CM), and those using conventional materials?

Significance of the Study

Integration of Audio-Visual Aids (AVA) and computerized materials (CM) to support the learning environment in teaching language is still in its infancy in Iraq. To the best of the researcher's knowledge, no studies have been carried out on using Audio-Visual Aids (AVA) and computerized materials (CM) to integrate the four language skills when teaching English to the ESP students in university. The researcher; therefore, has designed a computerized materials (CM) to be at teachers' and students' disposal, which they can use when teaching and learning English in the ESP classroom. Moreover, the English language instructors may benefit from the computerized materials (CM) to utilize new techniques for teaching English via computer. They may also benefit from this study in designing new computer programs to teach the other language skills and aspects.

Limitations of the Study

The researcher may summarize the limitations in the following points:

- 1-The sample of this study is limited to the first grade students at Petro-chemical Engineering Department, Faculty of Engineering at University of Anbar
- 2- The results of the study are limited by the time for the period in which the study was conducted as technology and its applications may change dramatically in the near future.
- 3- The material of the study is derived from the "ESP Academic for Engineering " textbook.
- 4- The time of the study is limited for the period of the first semester 2015.

Review of Related Literature

Several specialists have emphasized the use of computer programs and AVA to enhance learner autonomy in foreign language learning, particularly in the field of EFL teaching and learning. Concerning the benefit of integrating Audio-Visual Aids (AVA) and computerized materials (CM) in teaching language, Szendeffy (2005) lists some features of Integrative them like using of authentic environments; integrating of all skills in a holistic approach; using multimedia and hypermedia in a nonlinear manner; offering greater student control; giving task-based, content-based, and project-based activities; and communicating with native speakers and other learners. According to Williams (2005), if the use of the computer software is carefully modeled, it can offer students both assistance and autonomy in the writing process.

Medina and Mario (cited in Malkawi, 2007) summed up the importance of computer in learning as: (1) enriching the learning environment, (2) enhancing the learning process,(3) making education more widely available, and (4) producing cost effective solutions to dissemination of knowledge.

To reveal the effect of AVA and computer-assisted learning compared to traditional leaning, Kulik and Kulik (1991) surveyed more than 500 studies which compared learners who received AVA and/or computer-assisted instruction with the learners who received traditional instruction. They found that learners tend to learn more and in less time with computer-assisted learning and AVA.

Dayd (1994) conducted study to reveal the effect of using computer in teaching ESP to the Business English classes at the International Islamic University, Malaysia. The researcher used computer simulation programs as a tool to gather the data. The results revealed that the use of computers helped to motivate the students to learn the English language. Its use can help to make the E.S.P. classroom livelier and more enjoyable, and thus, create a more effective environment for the learner to learn the English language.

Hsu (2011) found that multimedia appear to provide additional channels for exposure to ESP learners. As such, reading-to-write may no longer be the exclusive task in the composition classroom. A number of researchers have discussed the effects of presenting information using

multimedia on ESP vocabulary acquisition and so on improving main skills especially ESP writing (Akbulut, 2007; Kim and Gilman, 2008). A good example is the finding of Lin (2004), she found out that audiovisual aids affect vocabulary ESP learning leading to writing improvement.

Alkhayyat (2012) investigated the effect of a proposed CALL program on the Iraqi second intermediate stage students' achievement in English. The participants of the study were seventy girls from the second intermediate stage who were purposefully chosen from Qutayba bin Muslim AL Bahili School for Girls in Baghdad. They were assigned to an experimental group and to a control group. Twenty five girls (who have laptop computers) were assigned to the experimental group, and 45 girls to the control groups. The instruments of the study were a CALL program, attitudinal questionnaire and pre-post achievement test. The data of the study were collected during the first semester 2011-2012 via an attitudinal questionnaire and an achievement test. The findings of the study indicated that using CALL has a positive effect on the experimental group students' achievement. Furthermore, the results revealed that there were observed difference at ($\alpha = 0.05$) between the means of students' attitudes toward learning English via CALL program before and after implementing the CALL program in favor of the post- attitudes.

Ghaedsharafi and Bagheri (2012) conducted a study to find whether three different technology tools (audiovisual, visual and audio) may affect EFL learners' writing ability at ESP classes. The sample of the study was 45 students, both males and females were selected randomly out of advanced level EFL learners. To collect the data of the study, three instruments were used, (stress, superstition and nature tech, were selected (www.YouTube.com) as audiovisual materials. One-way ANOVA, matched t-test and the effect size were used. The researchers found that the audiovisual ESP group performed better than the audio group and the audio group performed better than the visual group in their post-writings.

Al-Khayyat (2015) examined the impact of CALL program on the Iraqi students' achievement in English. The participants of the study were 38 students from the Second stage at the English Department who were purposefully chosen from Cihan University in Sulaymaniyah province in the Kurdistan of Iraq. They were assigned to an treatment group and to a control group. Seventeen students (who had laptop computers) were assigned to the experimental (treatment) group, and 21 students to the control group. The instruments of the study is a CALL program (JavaScript), and pre-post achievement test. The findings of the study indicated that using CALL had a positive effect on the experimental group students' achievement.

El-Ghonaimy (2015) conducted a study to explore the effectiveness of Computer Assisted Language Learning programs on the development of English writing sub-skills of ESP University students of Engineering. The Participants of the study were 38 students, divided into two groups(experimental and control). The findings revealed that the experimental group in post-tests outperformed the control group in 3 CALL writing sub-skills (paragraph grammar and punctuation), whereas in the spellingskill, no considerable difference existed between the two groups. Based on the findings, the researcher suggested that CALL English writing sub-skills (for ESP) could be more functional and beneficial both linguistically and socially.

Tonekaboni, Latifi, and Abedini (2015) investigated whether computer networks are indeed an effective tool for empowering second-language learners. The study was designed to compare the effects of three kinds of different technical tools to see if they affect on ESL learners' overall vocabulary empowerment. The participants of the study were 44 English translation majors, who were learning English for special purpose (ESP) as part of their studies at Islamic Azad University of Ramsar Branch. As a second administration a modified version of Schmitt's vocabulary learning strategies questionnaire was used in this experiment for pre- test and the post test. The researchers

concluded that technical tools can be considered as an effective item for a vocabulary empowerment.

Methodology of the Study

The Pilot Study

The research materials and procedures were piloted before launching the study.

The pilot study was done in one ESP class of University of Anbar, Faculty of Pure Science, Chemical Department. The participants were undergraduate students who studied English as ESP. The English course (One Hour / week) in the first semester . There were 21 students. The researcher applied one computerize material (one subject) in class.

At first it was aimed to see whether the computerize material may affect the level of understanding and the willingness of the students to learn ESP via technology. Then, another mode of presentation which was film or audio material was added. One topic was chosen for the students. At first students were asked to speak and write about the film, and listen to the computerized topic, before they watched it and implemented the program. After one week, the film and the computerized material were played for the students before they started to speak and write about the same topic again. The means of the post-speaking and writing, and the pre-speaking and writing were compared. The researcher concluded that the mean of post-speaking and writing were greater than the one in pre-speaking and writing. Therefore, audiovisual presentation and computerize materials could help students perform better on their speaking and writing skills.

Participants

The participants of the study were 24 students from the first grade, who were purposefully chosen from Petro-chemical Engineering Department/ Faculty of Engineering at University of Anbar. They were assigned to an experimental and control groups. 13 students were assigned to the experimental group (who have laptop computer), and 11 students to the control group.

Table 1 shows the distribution of the participants according to the variable of the study (method of teaching).

Group	Frequency	Percent
Control	11	45.84
Treatment	13	54.16
Total	24	100.0

Research Instruments

This section consists of two parts: ESP computerized materials program (JavaScript program 'computerized textbook material'), also, the AVA materials (films) and the achievement test.

The following is a brief description of the JavaScript. For the purpose of this study, a computerize program was designed. It was based on JavaScript program. The choice of JavaScript program was due to its primary purpose which is to write functions that are embedded in or included from HTML pages and that interact with the Document Object Model (DOM) of the page.

The data of the study were collected during the first semester 2014-2015 via an achievement test.

The Instructional Program

The researcher built an ESP instructional computerized program taken from "ESP Academic for Engineering textbook". The units taken were: A petrochemical Engineer, Chemical Structure Group, and Chemical and Petrochemical Engineering. These units were analyzed and redesigned in a computerized manner where the questions and answers were accessed through this program to facilitate the learning process for the ESP students. The design and development of the program were made with the help of a computer design expert at the faculty of Computer Science.

The ESP computerized program was organized into four organizers. The four organizers are: Listening, Speaking, Reading, and Writing. The program was designed to develop these four skills. There are texts which are supposed to help the students to practice the reading skill, the photos are supposed to help the students to practice the speaking skill, the records' icons are located in the program to help the students to practice the listening skill, and finally, there are model texts which are supposed to help the students to practice the writing skill.

The audiovisual ESP materials (4 films) were chosen from YouTube website. The films contain authentic scenes for people who specialize in petrochemical engineering field. The researcher made some edition to the films. Such as adding questions after specific scene, to measure students' understanding, in addition to the questions at the end of each film.

Validity of the ESP Program

After being designed with the help of a computer expert, the ESP program was reviewed by a panel of three university professors from Cihan University, Dijlah College, and University of Anbar, also computer experts at Computer center. The panel suggested certain changes related to color, structure, and the animation of icons. These changes were made and the program was given back to the panel. They all accepted the modification made to the program.

Validity of the AVA films

After being chosen, the films were reviewed by a panel of two universities professors of computer and methodology from Cihan University, and University of Anbar. The panel suggested certain changes related to the length of the film, position of the questions, and the sequences of the films (to arrange films according to the length period). These changes were made and the films were given back to the panel. They all accepted the modification made to the films.

Validity of the test

In the written exam, question one was set to measure the reading proficiency. Question Two was set to measure the writing proficiency. In the oral exam, questions one, two, and three were set to measure the speaking proficiency. In the listening section, questions one, two, three, and four were set to measure the listening proficiency. The total grade for each skill is out of 25 marks.

To ensure the content validity and reliability of the achievement test, a jury of university English instructors, English school teachers were asked to give their remarks about the test's validity. They suggested certain changes related to the passages, variations of questions and weight of questions. Their suggestions were taken into account in modifying the test before it was applied. In addition to examining the content validity of the achievement test, the researcher selected a pilot sample consisted of 21 students from Chemical Department at Faculty of Pure Science. The researcher computed the difficulty coefficient for each item of the test's items, and also computed the correlation coefficient of the corrected item with the test and its dimensions (discrimination coefficient).

Internal validity

To examine the internal validity of the test and its dimensions, intercorrelation coefficient was computed between the test and its dimensions, and between the four dimensions themselves; Table 2 presents the results.

Table 2: The intercorrelation coefficient of the test and its dimensions.

Pearson Correlation	Reading	Writing	Speaking	Listening
Writing	0.39			
Speaking	0.38	0.34		
Listening	0.36	0.31	0.33	
Achievement	0.64	0.58	0.62	0.64

Variables of the Study

The variables of the study consists of the following:

1. The independent variable is the method of teaching which has two levels: the computerized instructional program and the traditional method.
2. The dependent variable is the ESP students' achievement scores on the post- test in listening, speaking, reading, and writing.

Design of the Study

Since the sample of the study was purposefully chosen, the design is a quasi- experimental one for the non equivalent groups. It is difficult to achieve full randomization as the students who have laptop computers are not equal to those who do not have ones. For the researcher to control the student variable and avoid the influence of any outside variables, he conducted a short test on students at the end of each unit and film, then he compared the results of both groups. The results were very close for the both groups.

Data collection procedures

The data for this study were collected from first grade Petrochemical Engineering Department . The students who have laptop computers were 13 students. The study started in the first semester of 2015. Meanwhile, at the end of the study, the teacher applied the posttest to measure students' achievement in English ESP course.

Procedures of the study

The researcher followed the following procedures to conduct this study:

1. Reviewing some of the available related literature to establish a theoretical background.
2. Preparing the instruments of the study, and then establishing their validity and reliability.
3. Obtaining permission from head of Engineering Department.
4. Designing and validating an instructional program.
5. Identifying the participants of the study both the experimental and control groups.
6. Conducting achievement test on the participants of the study and computing its results.
7. Conducting the study.
8. Administrating posttest.
9. Analyzing the results and writing the paper.

Results Related to the Question of the Study

To answer the question, Are there statistical significant differences at ($\alpha= 0.05$) between the mean scores of the experimental and control groups on the achievement test in English of the ESP students' using Audio-Visual Aids (AVA) and computerized materials (CM), and those using conventional materials?

The means and standard deviations were calculated for students' overall achievement score of pre- and posttest according to the independent variable (teaching methods: CALL and conventional). In addition, adjusted means and standard errors of students' scores on the posttest were computed as seen in Table 3 and 4.

Table 3 Descriptive statistic of the samples T-Test

Pre-Test	N	M	Std.
Control	11	7.87	0.41
Experimental	13	7.68	0.39

Table 4 Descriptive statistic of the samples T-Test

Post-Test	N	M	Std.
Control	11	11.98	1.11
Experimental	13	17.12	1.31

Table 3 shows that there are observed differences between the two means of the participants' achievement score on pretest. While Table 4 shows that there are observed differences between the two means of the participants' achievement score on posttest due to the level differences of the independent variable of the study (teaching method). To examine the significance of these observed differences, the researcher used ANCOVA to compute participants' overall achievement scores of the posttest according to the study independent variable (teaching method) after neutralizing students' performances on overall achievement scores on pre-test scores as seen in Table 5.

Table 5 Results of ANCOVA for students' overall achievement scores according to the study variable.

Source	Sum of Squares	df	Mean Square	F	Sig.	Partial η^2
Achievement (Covariate)	356.010	1	356.010	2.223	0.140	3.20%
Group	15017.761	1	15017.760	92.456	0.000	59.22%
Error	10768.029	67	160.717			
Total	27880.443	68				

The adjusted means and standard errors of the students post- test scores were computed as seen in Table 6.

Table 6: Means and standard deviations for the pre- and post- test scores on students' achievement subscores of test, and the adjusted means and standard errors according to the variable of the study.

Dimension	Group	Pretest		Posttest			
		Mean	Std. Dev.	Mean	Std. Dev.	Adj. Mean	Std. Error
Reading	Control	10.044	1.54	14.911	4.25	15.08	0.58
	Treatment	10.760	3.27	22.600	2.80	22.29	0.78
Writing	Control	9.244	2.04	14.000	4.51	14.07	0.62
	Treatment	9.160	1.68	22.760	2.88	22.63	0.84

Speaking	Control	9.022	2.32	15.067	3.45	15.14	0.48
	Treatment	10.120	1.74	23.200	2.53	23.06	0.65
Listening	Control	9.133	1.98	15.822	3.86	15.94	0.50
	Treatment	9.680	2.12	23.520	2.26	23.30	0.68

Table 6 shows that there are observed differences between the means of students' achievement scores on the sub-scores of the pre-test due to the different levels of the independent variable (teaching method). To decide which type of analysis the researcher should use (MANCOVA, or ANCOVA).

Discussion of the results of the first question

The finding of the present study show that there are statistically significant differences between the mean scores of the post response of the overall students' achievement test. This is due to the difference in the teaching method: the computerized program and AVA versus the conventional method. The results also revealed that there was a significant correlation among the four skills (listening, speaking, reading, and writing).

The above results revealed that the computerized program and AVA films have been designed in an integrative way which Brown (2001), Omaggio (2001), Krashen (1997), and Ausubel (1968) focused on. The presentation of the materials in an integrative way via above methods helped the ESP students to develop their proficiency in the four skills. The results of this study are in line with the results of many other studies which proved the advantages of CM and AVA in developing students' language proficiency. Most important among these are: Dayd (1994); El-Ghonaimy (2015); Ghaedsharafi and Bagheri (2012); Hsu (2011); Kulik and Kulik (1991); Lin (2004); Szendeffy (2005); Tonekaboni, Latifi, and Abedini (2015); Williams (2005).

Recommendations:

The researcher may put forth the following recommendations:

- The Iraqi researchers should conduct other studies on the effect of computerized materials and Audiovisual materials on the ESP students' achievement in English language in order to generate a more comprehensive idea about the effect of Technology method on teaching the ESP in Iraq.
- The Iraqi instructors who teach ESP syllabus are advised to vary their teaching methods, techniques of teaching according to their students' needs and interests.
- The researcher recommends that EFL teachers who teach ESP syllabus should use the computer teaching and learning programs in their teaching, since it enhances ESP students' achievements.

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