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Blended Learning for Teaching Vocabulary in Baharin

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ABSTRACT :

The current study aimed to investigate the effects of a proposed blended learning strategy in teaching medical vocabulary at Arabian Gulf University (AGU) on pre-medical students' achievement.

The study sample consisted of 50 students who scored less than 60% in AGU English Language Entry exam. The sample was randomly divided into two groups; 22 students in the control group and 28 in the experimental group. The research instrument was AGU English language unit exams in English 151.

Data analysis revealed that there were no statistical significant differences between the experimental and the control group except with regard to the second midterm exam total score where the control group performed significantly better than the experimental group. It was argued that students' lack of vocabulary improvement was due to lack of administrative support.

Keywords: students' achievement, blended learning, vocabulary, virtual learning environment, WebCT

1. INTRODUCTION

Media has been used in all phases of teaching and learning processes. Usually media is employed to reduce the burden of transferring knowledge from the teacher to his/her students. There are many types of media such as: books, audiotapes, video tapes, television programs and computer that the language teachers can use to facilitate learning to their students. If the medium is well planned, designed and utilized, it can positively affect the student's learning and can be a source that helps the student to learn independently; therefore s/he can build his/her own knowledge and learning experiences.

Many research and studies proved that using technology, as a delivery medium, in transferring knowledge has many benefits over face-to-face instructions (Naqvi, 2006). More and more educators realize the benefits of the Internet in teaching and learning second language (L2). Virtual learning environments have been created to make use of the Internet's advantages while controlling the learning process. Virtual Learning Environment (VLE) refers to a system of learning management in which students and their tutors participate in online interactions of various kinds, including online learning (Poulter, and Chalmers, n.d). VLE has enhanced interactive education over the web (Ahmad, Edwards, & Tomkinson, 2006). Examples of VLEs are: Web CT, Blackboard, Moodle, E-college, Learning space, and Angel (Frey, 2005).

Using VLE has many advantages as Henderson, 2001, believed such as: (1) minimizing traveling to attend classes; (2) students can absorb the material in smaller

portions, and (3) the information is easy to be updated and learning is possible 24×7 hours per week (Cited in: Mackay & Stokport, 2006). The disadvantages of VLE have been investigated by many researchers. Bleimann (2004) saw delayed feedback due to the unavailability of the teacher when needed, as a disadvantage. Piskurich (2006) asserted that this type of learning requires more time from the teacher in designing the course, and monitoring discussion boards, and students may not learn anything from the discussion boards or chat rooms.

This is why some educators believe that the best compromise between online learning and traditional learning, that has face-to-face (f2f) interaction and immediate feedback, is the use of blended learning. Bersin, 2004, observed that blended learning programs obviate the failure of online learning (Cited in: Mackay & Stokport, 2006). Blended learning can motivate the student to be an independent learner by doing activities that extend the class experience to increase his/her achievement (Paine, 2003).

STATEMENT OF THE PROBLEM

There is an acceptance of the notion that using the Internet in general and the virtual learning environment (VLE), particularly in combination with f2f learning, show a benefit. But when searching through available research reports, very few studies in the Gulf region have been done to support such a belief – especially in regards to using blended learning to enhance learning English as L2. In addition to that, blended learning is used in several universities in the Arab World as a supplementary tool but not as an integral part of planned instructional design. The Arabian Gulf University has a Virtual Learning Environment (VLE), WebCT, but few courses make use of it. In this study, the researcher examined the benefit of WebCT in developing the students' learning of new vocabulary.

The acquisition the main problem facing premedical students, similar to that of other foreign language students in learning a second language (L2), is that they have limited vocabulary. It would be an advantage if WebCT, with its different types of media and communication tools, could help them to learn the required technical vocabulary. This study set out to show that by using the additional support of WebCT, students could acquire comprehension of the new technical terms easily and effectively.

The research question is:

> What are the effects of the proposed blended learning strategy in teaching vocabulary in English 151 course on premedical students' achievement in comparison with the f2f method?

Hypothesis of the Study

This study aims to validate the following hypothesis:

Using the proposed blended learning strategy in teaching vocabulary in English 151 course affects the students' achievement.

The Limitations

The results of the study can only be generalized within the following limitations:

- The human limitations: the premedical students;
- The place limitations: The College of Medicine and Medical Sciences at Arabian Gulf University (AGU) in Bahrain;
- The time limitations: the first semester of the academic year 2008;
- The course limitations: the English 151 course.

Literature Review

The topics of this part will review literature relevant to the present study. The presentation covers; using technology in language learning, blended learning, teaching second language vocabulary, and WebCT and English language teaching.

Using Technology in Language Learning

Learning the English language is very

important, because English has become a major means of communication all over the world (Tsai, 2006). It is the language of science, globalization, commerce, trade, politics, history, education, media and technology (Al-Nafisah, 2001).

Concerning the Gulf area, students face many problems in learning English which are similar to those of other English as Second Language (ESL) students. Fu (2003) believed that students, for whom English is not their first language, have difficulties in understanding academic papers and technical reports, problems in communication with foreign professors, limited vocabulary, and poor reading abilities. Al-Nafisah (2001) noted that Arab students face many problems in learning English. For example, they lack the opportunity to practice the language outside of classrooms, the classes; the text books; the topics of the English syllabus and the learning activities in the English class are boring and not related to the students' concerns and interests.

Some English students may be shy and the teacher in the classroom has a dominant role, which can hinder students' participation. All of these factors create passive students, and as many studies emphasized, students must be involved in the learning process. To improve English as a second language (ESL) learning, it is necessary to incorporate suitable types of technology in teaching English and students must be enabled to use technology –based flexible learning environments.

One of the recent uses of technology in education is using the internet. This kind of instruction is called "Online Learning". Studies have been done to analyze the advantages of online learning. Al-Mobark's (2003) study reported on research such as Al-Oud & Al-Hamed, 1424 /2003; and Al-Rashed, 1424/2003, which favored online learning because it gives students a sense of privacy when s/he makes mistakes and it uses a variety learning aids, multimedia and audio and video clips to develop his/her thinking skills. Piskurich (2006) believed that online learning saves the time and the costs of traveling if the university is far away; uses different methods for reinforcement and it helps in retention by replicating the activity or the information presentation. Online learning also produces collaborative learners who can learn in groups (Piskurich, 2006).

The disadvantages of online learning have been investigated by many researchers. Bleimann (2004) saw delayed feedback due to the unavailability of the teacher when needed, as a disadvantage of online learning. Piskurich (2006) asserted that online learning requires more time from the teacher in designing the course, and monitoring discussion boards, and students may not learn anything from the discussion boards or chat rooms. Online learning does not have f2f interaction which may decrease students' motivation to learn (Mackay & Stockport, 2006) and increase the student's feeling of isolation.

BLENDED LEARNING

As presented previously, many researchers have discussed the advantages and disadvantage of online learning. So it seems that it would be an ideal strategy if the benefits of this type of instruction could be successfully combined with face-to-face learning (f2f) through a blended way of learning. Blended learning is a learning approach that is also known as "hybrid learning" in which f2f teaching would be integrated with online learning (Thompson, 2003).

Duhancey, 2004, defined blended learning as a course that comprises any combined use of electronic learning tools that supplement, but do not replace f2f learning (Cited in: Welker & Berardino, 2006). Sahin (2007) defined blended learning as kind of distance learning that is used to support f2f learning. These two definitions of blended learning are the most suitable ones in regards to the type of learning used in this study.

From reviewing the related literature, many studies have proved the success and the advantages of blended learning over online and f2f learning alone. In blended learning, the student can learn from an

online course that matches his/her different learning styles, and at the same time, s/he can learn from lectures in class (Osguthrope & Graham, 2003). In blended learning, a student can also learn from social interaction, whether f2f or online, and gets immediate feedback (Osguthrope & Graham, 2003). Through blended learning the student's achievement is higher because retention of the learning material is increased through the use of media and VLE tools (Thompson, 2003). Moreover, in blended learning the student is actively involved in the learning process (Thompson, 2003) and has access to different online resources (Osguthrope & Graham, 2003; Lim, Morris & Kumpitz, 2006).

Many studies focused on the learning outcomes of blended learning. Echavez-Solano (2003) found that the students in technology-enhanced classes had better understanding of course content, immediate feedback, self learning and control of their learning. However, Echavez-Solano (2003) observed that there were no significant differences between students' performance in traditional classes and technology-enhanced classes (blended) in the assignments, exams and final grades.

It is clear from reviewing the literature that blended learning tends to be better than online or f2f instruction alone. However, students who learn by this approach of instruction may not achieve significantly better results than those studying f2f or online courses only. Additionally, English language is one of the courses in which students need the teacher's presence in guiding them in the different language skills that they learn.

TEACHING SECOND LANGUAGE VOCABULARY

The English language, like any other language, has different areas that students should study, such as vocabulary, grammar, spelling, listening and reading. In this study, the researcher focused on vocabulary because of its importance to premedical students. This is an area which has been somewhat neglected in past research.

Vocabulary is a building block of all language skills: reading, listening, writing and speaking (Lin, 2002). Asselin (2002) and Nichols & Rupley (2004) emphasized the importance of vocabulary, stating that it is a key to reading comprehension, reading fluency, writing, and communication with others. Mastering vocabulary enables students to form sentences and communicate with others.

Therefore, due to its importance, adequate support is essential in learning vocabulary. Necessary support in learning vocabulary can be provided through the use of internet and Virtual Learning Environment (VLE) tools because, as discussed earlier this has positive effects on L2 learning. The results of Lin's (2002) study that aimed to provide guidelines for supplemental Websites for English as a foreign language (EFL) vocabulary acquisition indicated that most of the respondents considered learning vocabulary difficult. He explained that students favored the interactive, supplemental course website to learn the target vocabulary because it provided vocabulary practice and regular vocabulary assessment.

Many studies proved the positive effects of supplementary programs in teaching ESL. Carlo et al. 2004, showed that a supplementary program which requires students' active engagement in learning new words, has a significant statistically positive impact on EFL, on vocabulary knowledge (Cited in: Apthorp, 2006). Siekmann (1999) found that the supplemental online learning environment is a useful tool from both the student's and the instructor's perspectives and it should be used in second language classrooms. Kaya (2006) reviewed the studies of Chennault, 1993; De Ridder, 2000; Horst, Cobb & Nicolae, 2005. Kaya (2006) concluded that the online programs should be used as a tool for learning vocabulary because they offer rich input and encourage deeper processing and they have a significantly positive effect on

vocabulary. Chennault, 1993, conducted an experiment in which the experimental group was provided with online support and multimedia in learning L2 vocabulary. The experimental group performed significantly better results in vocabulary than the control group. Also, De Ridder, 2000, findings indicated that CALL and hyperlinks positively affect the students' reading comprehension and vocabulary acquisition. Horst, Cobb & Nicolae, 2005, findings indicated that the created website that was designed to support vocabulary acquisition and contained dictionary, hypertext, and interactive self quizzing feature, resulted in deeper processing of language for the L2 learners (Cited in Kaya, 2006). Iddings, Ortmann & Pride's (1999) study examined the effectiveness of a program designed to enhance students' reading comprehension and vocabulary development through the use of multiple instructional strategies and technology. The study proved that the use of technology and multiple instructional strategies in teaching vocabulary resulted in a significant growth in vocabulary development for students.

However, it is worth mentiong that some studies like Kaya's (2006) did not prove significant growth in the students' vocabulary acquisition due to the use of the supplementary vocabulary programs. Kaya's (2006) study, investigated the effectiveness of adaptive computer use for learning vocabulary on learning behavior on a sample of 200 students in Fukuoka University of Education in Japan. This study showed no significant differences between the group that used the computerized vocabulary instruction and the other group that did not use the program.

WebCT AND ENGLISH LANGUAGE TEACHING

Educators can implement blended learning in language learning through the utilization of VLE as a supplementary means to help the non-native speaker in developing his/her language and his/her skills. VLE contains activities, audio and video clips, animation and graphs which can help reinforce new learning so the student develops his/her oral and aural skills (Paine, 2003).

Virtual learning environments are low in cost in comparison with the costs of traditional learning such as the costs of buildings, labs, transportation or school equipment. Moreover, a large number of students can enroll in the same course from different geographical areas and different time zones as Besyony, 2000, explained (Cited in: Al-Mobark, 2004). VLE and the Internet in general, combine the benefits of ordinary book learning with the benefits of audio and video clips (Bates & Poole, 2003/2006). Web Course Tools (WebCT) is a VLE that offers a number of tools that enable the instructor to meet students' needs and decrease the teachers work (Siekmann, 1998). These include the following:

- Tracking students;
- Automatic grading of quizzes;
- Monitoring discussion;
- Arranging the course and the content easily;
- Providing authentic material and different resources for information for the students (clips, websites, etc.);

Lai & Kritsonis (2006) showed that WebCT helps the student in learning by repeating the lessons as s/he requires. As with any VLE, WebCT enables students to communicate with other students and with their instructor through different communication tools and increases the opportunities for them to be independent and self-directed (Thomas & Storr, 2005). It helps those students who do not participate in classroom activities (Meskill & Mossop, 1997). This enables students to build and promote their knowledge. WebCT enables students to get immediate, high quality feedback from the instructor for their discussion contributions and assignments (Lai, 2006).

Many studies provided evidence for the positive effects of WebCT on achievement. Naqvi's (2006) study aimed

to explore the feedback of 71 students on the use of the WebCT, and its impact on their learning of the course material. The study found that the use of WebCT helped the student to understand better and learn the course material in an effective way. Thomas & Storr (2005) emphasized this when they found that for 82% of students their learning of content increased. Seikmann's (1998) study was one of the few studies about integrating WebCT in L2 learning. These findings indicated that WebCT brought L2 learning to the students' homes and encouraged the students who did not participate in class to use the language in communicating through the communication tools.

SUMMARY

From reviewing the literature relevant to the current research, the following are concluded:

- Most studies that were reviewed focused on the effects of the online units designed to teach L2 vocabulary on the students' achievement.
- It is very important to choose the suitable learning strategy and to design a well planned online unit on VLE to teach second language vocabulary and help the students to be independent learners.
- The researcher benefited from the relevant studies that designed online units to enhance L2 vocabulary in designing the online unit, multimedia, and the VLE tools to enhance the vocabulary acquisition of the premedical students.
- Kaya's (2006) study is the most similar study to the current study in the design of the online units and using WebCT to deliver the units to improve the students' vocabulary acquisition. Kaya's (2006) online unit contained text, images, movie, and audio in order to facilitate the vocabulary learning process like the online unit used in the current study.

THE RESEARCH METHODOLOGY

The study used the experimental method to achieve its purpose. The design of the research was a true experimental one because the students were assigned to two groups randomly. The students' achievement hypothesis was tested by a randomized posttest control group design. This included 3 measurements; two midterm exams and the final exam.

Participants

The sample was made up of 50 students, all nominated by the English Language Unit. These students were assigned to the experimental and control groups through random selection off a list. The sample contained 15 males and 35 females. The mean of the sample on the English language Entry Exam was 39.5. This was low and it was clear that this group needed assistance. The researcher divided the sample into 28 students in the experimental group and 22 students in the control group expecting students from the experimental group to leave the online unit since they did not have motives to study the online unit as will be explained in a subsequent section.

INSTRUMENTATION

The Online Unit:

In this study, the experimental method was used to assess the effects of the blended way of learning vocabulary within English 151 course for the AGU premedical students. The researcher's role in the online unit "Medical Vocabulary" was as a co-teacher who designed the online unit and helped the students learn from the unit.

The online unit was designed as an extension to the course outside the class. This unit contained WebCT tools, multimedia, electronic interaction and access to websites. All these were over and above what the students took in the f2f sessions to enrich the course - particularly vocabulary.

RESEARCH PROBLEMS

1. The unavailability of the Internet in the students' dorms at the beginning of the course. This was solved after 3 weeks by providing a wireless network.
2. The low reward from the AGU's English Unit to the students who enrolled in the blended course. The English Unit offered a reduction of just four Self Access Center (SAC) hours to students who participated in the Medical Vocabulary online unit. Students in the control group had a reduction of two hours from the SAC. So the students in the experimental group felt that there wasn't much to lose if they didn't study from WebCT. This meant the students had minimal external factors to motivate them to study. The researcher tried personally to convince them to study and to motivate the students through the improvement they will see on their exams. Some students came to know from English 151 teacher that just doing the assignments and the quizzes would enable them to be awarded the four SAC hours - even if they did not take full marks in WebCT.
3. The non-cooperation of English 151 course teacher. She did not access the WebCT, read the learning material, or contributed in answering the students' questions through email.
4. Through the WebCT tool "Track Students," the researcher noticed that some students did not read all the pages in the unit and didn't take enough time in studying the lesson. A few students did not study at all. The researcher sent emails to them requesting that they study appropriately, otherwise marks would be deducted.

DATA ANALYSIS AND RESULTS

This section presents the results of the statistical analysis of the data collected as part of this research study. Prior to testing the hypothesis, the researcher tested the differences between the experimental and control groups in the English Entry exam scores. The difference between the two groups was not statistically significant (experimental group: $M = 38.4$, $S = 10.6$; control group $M = 41.2$, $S = 12.0$, $t = 0.844$, and $p = 0.403$). So the two groups were equivalent with regard to the English Entry exam.

RESULTS RELATED TO THE HYPOTHESIS

The hypothesis states that: "Using the proposed blended learning strategy in teaching vocabulary in English 151 course affects the students' achievement." The students' achievement was assessed via three measures. These measures were two midterm exams and a final exam. For each measure, two scores were recorded, the score obtained on the vocabulary questions and the total score. Accordingly, the following six achievement scores were recorded: (1) first midterm vocabulary score (MT1VOC), (2) first midterm total score (MT1TOT), (3) second midterm vocabulary score (MT2VOC), (4) second midterm total score (MT2TOT), (5) final vocabulary score (FINVOC), and (6) final total score (FINTOT).

Since there were six dependent achievement variables, the hypothesis was tested via MANOVA. MANOVA was used to test the mean differences for the vocabulary and total scores separately. MANOVA requires that the dependent variables be normally distributed with equal groups' covariance matrices. Since the sample sizes for each group was less than 30 (28 students in the experimental group and 20 students in the control group), it was necessary to assess the normality of achievement scores within each group. Table (1) shows the results of the Shapiro-Wilk test. It is clear from this table that the normality assumptions were not satisfied in nine statistical tests. These

were the tests related to MT1VOC, MT2VOC, and FINVOC for the experimental group, and the tests related to MT1VOC, MT1TOT, MT2VOC, MT2TOT, FINVOC, and FINTOT for the control group.

Table (1): Shapiro-Wilk Test for Assessing the Normality of Achievement Scores

	Group	Statistic	df	*p*
MT1VOC	experimental	.824	28	.000
	Control	.656	18	.000
MT1TOT	experimental	.959	28	.333
	control	.785	18	.001
MT2VOC	experimental	.890	28	.007
	control	.766	18	.001
MT2TOT	experimental	.952	28	.219
	control	.760	18	.000
FINVOC	experimental	.885	28	.005
	control	.719	18	.000
FINTOT	experimental	.930	28	.063
	control	.775	18	.001

So the normality of the scores seemed to have been violated. But the equality of the covariance matrices was not violated. Box's test of the equality of the covariance matrices for the vocabulary variables indicated that the differences in the matrices were not statistically significant ($F = 1.971$, $df_1 = 6$, $df_2 = 8739.9$, $p = 0.066$). For the total variables, Box's test also indicated that the covariance matrices were not statistically significant ($F = 10.110$, $df_1 = 6$, $df_2 = 8739.9$, $p = 0.157$). Thus it can be assumed that the covariance matrices of the two groups were equal. However, since the normality assumptions could not be accepted, the researcher decided to use both the parametric and non- parametric procedures.

The MANOVA Test for the differences on the vocabulary variables indicated that the experimental and control groups means were not significantly different ($F = 0.532$, $df_1 = 3$, $df_2 = 42$, $p = 0.663$). Similarly, for the total scores, the means were not significantly different ($F = 1.574$, $df_1 = 3$, $df_2 = 42$, $p = 0.210$). Table (2) shows the mean and the standard deviation for each of the six achievement measures. It can be seen that the means of the two groups relative to the standard deviation are very comparable.

The non-parametric test used was the Mann-Whitney Exact test. Table (3) shows the results. According to this table, the only significant difference at the 0.05 was related to MT2TOT ($p = 0.049$). As the mean rank in table (3) and the means in table (2) show, the control group performed better than the experimental group in this test. Additionally, tables (2) and (3) indicate that the scores of the control group on the other measures tended to be higher than the scores of the experimental group though the mean differences were not significant.

Table (2): The Mean and the Standard Deviation for Each Group

The Test	Group	Mean	Std. Deviation
MT1VOC	experimental	24.1071	4.96489
	control	23.4750	7.42989
MT1TOT	experimental	72.9643	15.71693
	control	76.1000	21.51291
MT2VOC	experimental	29.4554	7.76002
	control	31.8375	8.94033
MT2TOT	experimental	75.3839	14.85804
	control	81.5500	17.77576
FINVOC	experimental	31.5179	6.75700
	control	34.0500	6.33889
FINTOT	experimental	76.1964	14.72720
	control	83.0875	14.24672

Table (3):Mann-Whitney Exact Test

The Test	Group	Mean Rank	*p*
MT1VOC	experimental	22.89	0.351
	control	26.75	
MT1TOT	experimental	22.00	0.146
	control	28.00	
MT2VOC	experimental	21.89	0.129
	control	28.15	
MT2TOT	experimental	21.14	0.049
	control	29.20	
FINVOC	experimental	21.71	0.104
	control	28.40	
FINTOT	experimental	21.41	0.071
	control	28.83	

DISCUSSION RESULTS RELATED TO THE HYPOTHESIS

The proposed blended learning strategy used in the current study did not affect the students' achievement except with regard to the second midterm total score. However, in this test the control group performed significantly better than the experimental group. Possible explanations for the non-significant result related to achievement are:

1. Through tracking the students logs in the Medical Vocabulary lessons it was found that about one-third (29.5%) of the students studied all the lessons in the online unit, about one-third (28.5%) of the students studied some of these lessons (40%), and 42% of the students didn't study the lessons at all.
2. The researcher was unable to force the students to study the online lessons since the credit for the

students was reducing 4 SAC hours and the students knew that they will gain this credit even if they did not study the online unit;
3. The students were not encouraged to study from the online unit by the English 151 teacher;
4. About forty two percent of the students did the assignments and the online quizzes without studying from the online unit;
5. The students indicated that they had busy schedules and did not have time, especially that they considered this online unit an extra load since only 4 SAC hours were reduced.
6. The students were not used to be independent learners.

The non-significant result in distance learning literature is not uncommon. A general review of distance education studies is presented through a meta-analysis done by Bernard, Abrami, Lou, Borokhovski, et al. (2004) to determine the effects of distance education courses on achievement. Bernard et al. (2004) did a meta-analysis of 232 comparative distance education literature between 1985 and 2002. Bernard et al. (2004) found that there was a very small significant effect favoring distance education conditions over traditional education. This significant effect was positive in asynchronous settings and negative in synchronous settings. Bernard et al. (2004) concluded that distance education sometimes works extremely well and extremely poorly in other times, even when all study features are taken into account. This conclusion is in agreement with the findings of the present study.

The present study aims was to assess the effects of supplementary online unit on learning L2 vocabulary. The supplementary online unit of the present study did not impact the students' vocabulary acquisition. This finding of the present study was in agreement with the findings of Kaya (2006) that investigated the effectiveness of adaptive computer use for learning vocabulary. The present study is similar to Kaya's (2006) study where both online units contained texts, images, movie, and audio in order to facilitate the vocabulary learning process. Kaya (2006) argued that the non significant results were due to the problems faced by the researcher, such as to delay the posttest.

The finding of the present study was in disagreement with the findings of many studies' that indicated positive effects of supplementary online units such as: Carlo's et al., 2004, where the students' participation in the online unit impacted positively their comprehension and vocabulary knowledge (Cited in: Apthorp, 2006). Kaya (2006) reviewed different studies that used different online programs to develop vocabulary acquisition like Chennault, 1993, De Ridder, 2000, Horst, Cobb & Nicolae, 2005. Chennault, 1993, provided the experimental group with online support and multimedia in learning L2 vocabulary and these students achieved significant growth in vocabulary. Also, De Ridder, 2000, findings indicated that CALL and hyperlinks affected positively the students' reading comprehension and vocabulary acquisition. Horst, Cobb & Nicolae, 2005, findings indicated that the created website that was designed to support vocabulary acquisition and contained dictionary, hypertext, and interactive self quizzing feature, offered input and language deeper processing for the L2 learners.

So Medical Vocabulary program did not improve the students' achievement in vocabulary. This result is also in disagreement with Iddings, Ortmann, and Pride's (1999) finding that showed that there was a significant growth in vocabulary development and reading comprehension through the use of multiple instructional strategies and computer technology in teaching. Iddings et al. (1999) saw the reason for the significant results was the use of self-selecting reading buckets.

CONCLUSIONS

The purpose of this study was to investigate the effects of the proposed blended learning strategy in teaching vocabulary in English 151 course on the

premedical students' achievement in comparison with the traditional f2f method.

The findings of this study indicated that were no significant differences between the means of the experimental and control groups in the achievement tests except with regard to the second midterm exam total score. However, in this test the control group performed significantly better than the experimental group. The results of this study indicated that the proposed blended learning strategy did not improve the students' achievement.

According to the reviewers, the unit was well designed. In addition, students, being poor in the English language, were in need of the help provided by the online unit. The above facts are not coherent with the relatively small percentage of students who made full use of the unit, and with the lack of improvement in achievement. It would thus seen plausible that the lack of support of the AGU English Language Unit was behind the failure to benefit from the unit. One may concludes that efforts and funds spent in developing e-learning materials would be fruitless without gaining support of the academic programs involved. In addition, students should be aware of the long-time benefits of using e-learning materials in that they help them in developing lifelong skills. These skills are emphasized in AGU's college of Medicine and Medical Sciences.

In light of this study's results, the following are recommended:

1. AGU should encourage the teachers and professors to use the VLE by offering incentives.
2. The educational institutions should provide the needed infrastructure to use electronic learning in education.
3. The design of the English language curriculum should meet the students' needs and interests. There should be different learning aids that facilitate, motivate, attract the students' attention and help them to be independent learners.
4. It is recommended to conduct similar studies in using the blended learning strategy in teaching English vocabulary with more control on the research settings.
5. It is recommended to conduct similar studies in using the blended learning strategy in teaching English language skills: reading, comprehension, listening, writing, pronunciation, or grammar.

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APPENDICES

Appendix 1: Reviewers

Panel Experts for the Online Unit:

1. Mrs. Ghada Abdullah, assistant teacher in the English Language Unit, Arabian Gulf University
2. Dr. Ali S. Al-Musawi, Assistant Professor, Head of Instructional and Learning Technologies Department, College of Education, Sultan Qaboos University
3. Dr. Akram Fathy Mustafa, Instructional Technology Department, South Valley University, Egypt
4. Dr. Zakaria Sorial, Learning Technologies Department, Almansorah University, Egypt
5. Dr. Jasir Alherbish, Engineering and Computer Science , the Chairman of the Committee on Education and Training Foundation Electronic Assembly for Technical Education Riyadh, Saudi Arabia
6. Mr. Hamed Kadry, Technical information, Information Technology Center King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia
7. Dr. Abdullah Almohaya, Technically learning, Teachers College, King Khaled University in Abha, Saudi Arabia
8. Dr. Awad Altwodry, Learning Technologies Department, King Saud University Riyadh, Saudi Arabia

Appendix 2: The Online Unit Judgment Criteria

Criteria for Reviewing the Online Unit:
Medical Vocabulary,

Following are the statements given to reviewers to evaluate the online unit that was designed to achieve the goal of the current research. The reviewers had to put a tick (✔) on the degree they judge the criterion ranging from 5 that is the highest mark to 1 the lowest mark. And write their comment if needed in the last column.

These are the means of the reviewers' responses for each item in the Likert scale:

Mean	Issues	Item	No.
4.8	The objectives of the unit are clear	Objectives	1
4.8	The objectives of the each lesson are clear		
4.5	They are sufficient detailed		
4	The objectives vary on Bloom taxonomy		
4	The learners make use of them		
4.8	I assume things that learners know	Pre-requisites	2

4.7	The unit structure is clear to the learners	Unit structure	3
4	The learning material is well organized		
4.7	The site is easy to navigate		
4.7	The unit plan helps in introducing the unit for the students i.e. gives them idea about what is going to be studied		
4	[a]The CD is easy to use		
4.8	The instructions of using the site are clear		
4.7	The learners understand the function of each component (clips, links to websites, flashes, images, flash cards and power point presentations)	Unit content	4
4.7	The learners are able to use all the components in an effective way		
4.5	The unit content is achieving the aim of the unit that is (to help the premedical students in understanding, memorizing and applying the vocabulary in the future)		
4.5	The flashes illustrate the content for the students		
3.8	The power point presentations are used in their correct place		
4	The content of the CD is helpful in deepening the learners understanding		
4.5	The video clips are helpful for a better understanding of the lessons		
4.6	The websites are helpful for a better understanding of the lessons		
4.5	The audio and video clips are available		
4.6	The websites are available		
4	The learners achieve the unit outcomes	Learning	5
4	The learners achieve the lessons outcomes		
4	The site is suiting the learners' needs		
4	The activities are connected to the objectives	Activities	6
4.6	The activities are enough for the content		
4	The instructions for doing the activities are clear		
4.7	The feedback is helpful for the learners?		
4	The self-assessments enable the students to check their progress	Self-assessment	7
4.5	The language in the unit is clear	Language	8
4	The unit is taking the needed time i.e. not too fast and not too slow	Pace	9

4	The instructions for doing the assignment are clear	The assignment	10
4.6	The instructions for the way of submitting the assignment are clear		