A Case Study of the Application of a Blended Learning Approach to Web-based College English Teaching Platform in a Medical University in Eastern China

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Abstract—This study adopted an empirical study to examine the application of the blended learning approach to Web-based College English Teaching Platform (WCETP) in a medical university in eastern China. The study was conducted on 40 students majoring in Clinical Medicine from two classes and raised two questions: (1) Is there a significant difference between the blended learning approach and the traditional classroom learning approach in terms of students' attitudes and satisfaction? (2) Is there a significant difference between the blended learning approach and the traditional classroom learning approach in terms of students' academic achievement? By analyzing and discussing the resultant statistics, the author drew the conclusion that compared with the traditional teaching approach, participants held more positive attitudes towards the blended learning model. Besides, participants preferred to this new blended learning model, which could better stimulate their interest, foster their autonomous learning and collaborative learning and prompt their confidence. What is more, the quantitative research with the comparisons of language learning achievement between the experimental group and the control group revealed that there was a significant difference in terms of students' academic achievement between the traditional classroom learning approach and the blended learning approach. Furthermore, students performed better in language learning under the blended learning model than those under the traditional model. The findings of the study indicate that as the brand-new learning approach, the blended learning approach which integrates the advantages of online learning and face-to-face classroom teaching could enhance students' comprehensive language skills, improve students' self-confidence in learning English, and cultivate the learners' ability of self-learning. Therefore, study on the application of blended learning for college English learning has an important reference value and practical significance for the reform of College English Education.

Index Terms—blended learning approach, college English teaching, web-based college English teaching platform

I. INTRODUCTION

A. Research Background

With the rapid development of the globalization, English is playing an increasingly important role in the whole world. College English Course is being under attention in all Chinese colleges and universities. Although college English teaching has gained notable achievements, there are many problems. Since the dominant teaching model in China is still traditional face-to-face teaching approach, which is unable to meet students' individualized needs, the teacher mainly gives the same instructions for the whole class to follow. With fewer chances of communication or practice, students under this teaching approach are frequently passive, dependent and lacking in initiative.

The problems of this teacher-centered approach have been noticed by many researchers and scholars in the field of English teaching. In response to deepen teaching reform, improve teaching quality, and meet the needs of the society for qualified personnel, *College English Curriculum Requirements* has been drawn up and college English teaching reform is in full swing. In the new *College English Curriculum Requirements(CECR, 2007)*, the Ministry of Education dictates that the new teaching model should be built on modern information technology, particularly network technology, so that English language teaching and learning will be, to a certain extent, free from the constraints of time or place and geared up for students' individualized and autonomous learning. The new requirements emphasize that this new model should integrate the strengths of the traditional classroom teaching with the advantages of E-learning while fully employing modern information technology.

In view of the problems of the traditional English teaching and the advantages of the E-learning, a blending of the two learning approaches is now being considered. Blended learning, which integrates the face-to-face teaching model with the Web-based learning model, is now drawing great attention. In the blended learning model, students can both take advantage of the teachers' lectures and be assisted by the Internet in choosing the appropriate content of learning materials according to their specific needs, and arranging self-paced study with the guidance of teachers, so that their all-round ability to use English could be improved and the best effects of learning could be achieved. So studying the application of the blended learning approach in college English teaching has important reference values and practical significance for actively carrying out college English teaching reform in China.

B. Purpose of the Study

In accordance with the new trend of college English teaching approach, many colleges and universities have built up Web-based teaching platform to apply the blended learning approach. Web-based College English Teaching Platform was built up in this medical university. This study started the application of the blended learning approach to Web-based College English Teaching Platform in the medical university in 2009. This study aims to 1) examine the differences in students' attitudes towards and satisfaction with the blended learning model based on Web-based College English Teaching Platform and the traditional classroom learning model; 2) investigate the differences in academic achievement between the students from the traditional classroom learning environment and the students from the blended learning environment. The results of the study may help instructors to better understand whether the instruction of blended learning is more effective in terms of attitudes, satisfaction and learning performance than traditional face-to-face teaching.

C. Significance of the Study

It is expected that the study will contribute to the following aspects:
1. The study will give an insight into the application of the blended learning approach in language teaching and learning.
2. The study has a potential influence on the practice of the blended learning approach in teaching college English especially in A medical university.
3. The study may help educators and researchers to better utilize the facilities of online recourses and communication technology in language teaching and learning.

II. LITERATURE REVIEW

A. Blended Learning

The term 'Blended Learning' has been used with increased frequency in both academic and corporation circles. In 2003, American Society for Training and Development identified Blended Learning as one of the top ten trends to emerge in the knowledge delivery industry (Rooney, 2003). In fact, the concept of blending is not new. In the past, the ingredients of blending were limited to physical classroom formats (lectures, labs, etc.), books or handouts. However, now with the development of high technology, various learning approaches are integrated into learning. And this kind of change not only alters learning effect, but also attracts scholars' attention, and brings Blended Learning new meanings, especially after 2001 when people reconsider the advantages and disadvantages of E-learning.

Though the term 'Blended Learning' has gained considerable currency in recent years as a description of particular forms of teaching with technology, it is such a flexible term and means different things to different people (Clark, 2003) that scholars define it in varied ways. And till now there is no authoritative definition. What is more, they hold quite different attitudes toward this term. The following are various definitions given by scholars at home and abroad with different attitudes.

B. Definitions of Blended Learning

In Webster's Online Dictionary, 'blend' is defined as 'harmonizing', 'mixing together two elements' and the 'act of combining into one'. In order to construct real blending environment, the structure of the course must be carefully evaluated to determine which instructional objectives can best be met in a Web-based environment and which are better suited for a traditional classroom environment.

Blended learning has been defined in many different ways. First, Osguthorpe and Graham (2003, p. 227) pointed that the term 'blended learning' was being used with increased frequency in academic journals and conferences as well as industry trade shows and magazines.

While Garnham et al. (2002, p. 1) defined blended learning as '… courses in which significant portion of the learning activities have been moved online, and time traditionally spent in the classroom is reduced but not eliminated.'

According to Thorne,

'Blended learning is the most logical and natural evolution of our learning agenda. It suggests an elegant solution to the challenges of tailoring learning and development to the needs of individuals. It represents an opportunity to integrate the innovative and technological advances offered by online learning with the interaction and participation offered in the best of traditional learning. It can be supported and enhanced by using the wisdom and one-to-one contact of

personal coaches .' (Thome, 2003, p. 16)

According to the review, the blended learning model should combine the learning pattern that occurs in the traditional classroom with the Web-based learning on the Internet, just as Dziuban, Hartman and Moskal (2004, p. 3) mentioned that "blended learning should be viewed as a pedagogical approach that combines the effectiveness and socialization opportunities of the classroom with the technologically enhanced active learning possibilities of the online environment, rather than a ratio of delivery modalities."

Compared with the overseas study, research on Blended Learning in China started later. It was first brought in by He Kekang at Global Chinese Conference on Computers in Education in December, 2003. After summarizing knowledge about Blended Learning in foreign scholars' reports, he proposed his own understanding and definition of Blended Learning. He stated that Blending Learning was to combine the advantages of traditional learning methods with E-learning model (Digital or online learning). In other words, it not only gives full play to teachers' leading role, such as guiding, enlightening, controlling teaching process, but also embodies students' central position by arousing students' enthusiasm, initiative and creativeness in the learning process. He pointed out that at present, international education field reached the consensus that only by combining the two together could they complement each other and achieve the optimal learning outcomes (He, 2004).

Li Kedong (2004), head of Educational Technology Department in Shanghai Normal University, points out that the so-called 'integrated learning' refers to the optimized selection and combination of all the elements of teaching to achieve the educational goal.

Li Kedong and Zhao Jianhua (2004) take Blended Learning as an organic integration of face-to-face classroom learning and E-learning. They think the core idea of Blended Learning is to apply different methods to solve problems with different requirements; in teaching, Blended Learning is to utilize different media and ways of transforming information. Such ways of settling the problems are required to achieve the best results with the least cost.

Taking all the definitions at home and abroad into consideration, it can be seen that the concept of Blended Learning is rooted in the idea that learning is a continuous process and blending provides more various benefits than using any single learning delivery type alone.

C. Blended Learning and Its Development in Language Studies

Since the World Wide Web was invented in 1989, there have been revolutionary changes in our way of life. The Internet extends its impact on the areas from business, science and technology to education. Blended learning has been adopted widely in many developed countries. Blended learning, which supports self-motivated and self-paced learning, is characterized by integrating online learning with traditional face-to-face learning.

Among all those academic and vocational subjects, language studies are probably the most challenging field, since overall language ability does not mean one single skill but a collection of literary and communicational skills. A good language learning approach requires both incidental and intentional learning. Blended learning meets both requirement as the incidental learning through the Web-based learning model and the intentional learning through the face-to-face learning model.

III. Methodology

A. Research Questions

The objective of this study is to compare students' attitudes, satisfaction and their corresponding academic performance between the blended learning environment and the face-to-face learning environment. Since questionnaires, interviews, and tests are implemented in the course of the study, qualitative and quantitative analysis are adopted to describe the interviews conducted in the study and analyze the data collected from the questionnaires and test scores.

To meet the purpose of the study, the research questions for the study were constructed as follows:

1. Is there a significant difference between the blended learning approach and the traditional classroom learning approach in terms of students' attitudes and satisfaction?

2. Is there a significant difference between the blended learning approach and the traditional classroom learning approach in terms of students' academic achievement?

B. Research Design

Research design is a systematic planning of research. In order to ensure that the selected participants may best represent the real quality of the target population, the participants in this study are statistically controlled.

1. Participants of the Study

This study was conducted in a medical university in the second semester of the 2009-2010 academic year. The gradation teaching of College English has been implemented since 2005. Students are divided into two levels, Level A and Level B, according to their scores of College Entrance English Examination. Level A Class consists of high English level students, accounting for 20% of total students. Level B Class mainly includes the students of middle and low English level students, accounting for 80% of total students. Participants of this study are all from Level B Class, majoring in Clinical Medicine. A total of 40 students from two classes, Class 12 and Class 14, were chosen as the sample, because their average scores of College Entrance English Examination were 70.45 and 70.70, and their English

levels were of no significant difference, and this was the main reason why they were chosen. The students were assigned to the control group and the experimental group purposely according to their response to the questionnaire. Class 12 was the control group while Class 14 was the experimental group, in which students have better computer skills and willingness to cooperate. Participants both in the control group and the experimental group have never experienced Web-based learning before, so drawbacks and achievement received by students can be attributed to learner factors. Table 3.1 is the general information about the participants.

TABLE 3.1
GENERAL INFORMATION ABOUT THE PARTICIPANTS

Items	The control group	The experimental group
Time of enrollment in College English Course	2009	2009
Average scores in College Entrance English Examination	70.45	70.70
Number of participants	20	20
Major	Clinical Medicine	Clinical Medicine
Teaching materials	New Horizon College English (Second Edition)	New Horizon College English (Second Edition)

2. Instruments of the Study
Three data collection instruments were used in the research: questionnaires, interviews and tests.
Questionnaires
To discover what students' attitudes and satisfactions are towards the blended learning approach and the traditional learning approach, two questionnaires are conducted both before and after the experiment.
Before the experiment, one questionnaire, consisting of 35 items, was designed to explore students' mastery of computer skills, their willingness of cooperation, and their general attitudes towards traditional classroom learning.
After the experiment, at the end of the second term, the second questionnaire was conducted among the experimental group to collect the data and information about their attitudes towards and satisfaction with blended learning.
Interviews
Two interviews were conducted. The first one was mainly about participants' attitudes towards the traditional teaching approach. After the experiment, the researchers interviewed only the experimental group to get to know their problems while learning and their attitudes, practices and suggestions towards blended learning. Some students were also interviewed about their learning autonomy.
Tests
In order to explore the differences between the blended learning approach and the traditional classroom learning approach in terms of students' academic achievement, students in the experimental group were taught in the blended learning environment, while students in the control group were taught mainly in the traditional classroom setting. Two English final examination outcomes were traced to make comparisons between the experimental group and the control group to evaluate their academic achievement.

3. Tasks and Activities
The experimental group adopted the blended learning mode. This consisted of two parallel layers that were performed together: face-to-face teaching portion was mainly teacher-centered and the on-line portion was mainly based on WCETP. The face-to-face teaching was carried out twice a week, 100 minutes every time. Classroom learning process mainly included teacher's lecture, accounting for half of the class time, and some class activities, such as students' role playing, oral presentations and group discussions, aiming to create an environment that could foster critical thinking, problem solving and the development of self-regulation abilities. In order to help the experimental group students get better involved in blended learning, they were also trained to improve their autonomous learning awareness and learner autonomy before the experiment. At the same time, the on-line learning activities based on WCETP mainly focused on content delivery, course management, and extension of the classroom discussion to the Web. The on-line component consisted of PowerPoint presentations with a corresponding note sheet, homework assignment, related reading tasks, discussions on the forum and quiz per week.

The control group adopted only the traditional face-to-face classroom learning mode. The on-line learning activities were not offered to them. However, their English course was conducted by the same English teacher with the experimental group, thus the teacher variable is under control. Besides, schedule of the course, teaching materials and the content of final tests were all the same with the experimental group.

C. Procedures of the Study and Data Collection

The formal study was carried out in the second semester of the 2009-2010 academic year, which went as follows:
1. Participants were selected based on their performance in College Entrance English Examination;
2. Participants' final English scores of last semester were collected and compared;
3. The first questionnaire was conducted among all the participants;
4. Participants were grouped according to their response to the first questionnaire;
5. Students in the experimental group were trained on their basic skills for Web-based autonomous learning. At the same time, they were exposed to the blended learning environment and participated in blended learning activities on WCETP;

6. The control group had their English Intensive Reading Course in the classroom and Listening and Speaking Course in audio-visual language labs without access to the Internet;

7. Participants of both groups' English final scores were collected and compared;

8. The experimental group responded to the questionnaire on their attitudes towards and satisfaction with blended learning approach, as well as interviews;

9. Analyze the data by using proper data analysis techniques and report the findings.

D. Data Analysis

Statistical software package SPSS 11.0 for Windows was used to analyze the collected data. SPSS is a comprehensive and flexible statistical analysis and data management system which is, however, easy to manipulate. Many tasks can be accomplished simply by pointing and clicking the mouse.

The results of the pre-test and post-test were input into computers, and analyzed by SPSS 11.0. SPSS 11.0 was also used to compare the data collected by questionnaires.

The qualitative data of interview was analyzed by organizing and summarizing so as to arrive at the results and conclusions of the research.

E. Pilot Study

A pilot study is "a preliminary study that informs a future effort by systematically examining specific facets of the eventual design" (Light et al., p. 214)

Participants for the pilot study were Level A Class students majoring in Clinical Medicine in the medical university during the first semester of 2009-2010 academic year. Students of Level A were assigned to learn English by using WCETP and in the classroom setting. A questionnaire that surveyed their attitudes towards blended learning was administered to 20 students of them after four-week blended learning. Data from 20 valid returned questionnaires were entered into SPSS 11.0 for Windows for testing the scale.

Most students who were surveyed showed positive attitudes towards blended learning approach. Based on the test results of the scale, wording issues and formatting issues were further revised. The results of the pilot study lay a foundation for revising the surveys used in the formal study.

F. Reliability and Validity

Reliability refers to the consistency of the research results (He, 2002). Reliability "describes the extent to which two sets of measurements of the same characteristics on the same people duplicate each other" (Light, Singer, & Willett, 1990, p. 165).

For the questionnaires, internal consistency that assesses the consistency of the entire scale was tested. Cronbach's alpha is the most widely used measure of reliability because it diagnoses the overall consistency of the test. According to Aron and Aron (2002), a Cronbach's alpha of at least .6 or .7 and preferably closer to .9 is considered useful in the social and behavioral sciences.

Internal consistency of the scale and its subscales of the study were calculated for coefficient alpha. Reliability Statistics analyzed by SPSS 11.0 showed that Cronbach's Alpha of pre-questionnaire was 0.804, which was acceptable. For the post-questionnaire, the scale yielded reliability (Cronabch's alpha) of 0.857, which was also acceptable.

Validity refers to "the degree to which a study and its results correctly lead to, or support, exactly what is claimed" (Brown, 2001, p. 29). Validity may dramatically affect the results if the researcher has not considered and controlled for all the relevant variables in a research.

In this study, the potential threats to experimental validity were minimized by taking the relevant variables into consideration.

IV. RESULTS AND DISCUSSIONS

A. Sample Demographics

Of the samples (n=40), 57.5% are males and 42.5% are females. They range in age from 19 to 21 years with an average age of 20.3 years. All of the samples are sophomores, majoring in Clinical Medicine. Overall, they could be representative of the targeted population across the university.

Regarding the use of computer, 72.5% students surf on the Internet very often; 98.5% students have their own e-mail accounts but only 40% of them frequently send e-mails to contact others; 95% students know how to search for information and download what they need from the Internet. From the data, their abilities in applying computers and the Internet nowadays for students are growing into a higher level. This computer factor is of great importance for the application of the blended learning approach. Whether students can handle it well or not may affect students' interest and enthusiasm in learning online. Therefore, it is also necessary to give students some guidance before using the WCETP, so that they can get a better benefit from blended learning.

One finding that should be noticed in the questionnaire is that although 82.5% students spend at least three or four hours on the Internet every week, only 20% among them often study English through the Internet. Most students are not used to learning English on their own through the Internet. Therefore, it is significant to train students' online learning

awareness and learning autonomy.

In terms of willingness to cooperate, 62.5% students show an interest in adopting new learning mode; 77.5% students show a desire to improve their autonomy study; 75% students would like to spend one or two hours per day on online English learning; 25% students, maybe affected by their inability to handle computers and lack of self-restraint, would not like to accept the idea of Web-based English learning. So generally speaking, students are willing to try this new, different learning style and computers give them a brand new experience of learning.

B.   Results of the Questionnaires

In this study, pre-and post-questionnaires were adopted to investigate the differences in terms of students' attitudes towards and satisfaction with the blended learning approach and the traditional classroom learning approach. The pre-questionnaire, which consisted of 35 items, aimed to know about students' computer skills, willingness of cooperation and their opinions about traditional classroom learning. The post-questionnaire was only conducted in the experimental group with the purpose of finding out students' perspectives on the application of a blended learning approach to Web-based College English Teaching Platform.

1. Students' Attitudes towards the Traditional Teaching Approach

Participants were asked to fill in a questionnaire related to their attitudes towards the traditional English teaching approach before blended learning was implemented. Each table shows students' attitudes to each statement, using mean score and standard deviation. The higher mean scores indicate the more positive opinions on the statement asked.

The data collected from the questionnaire show that students' attitudes towards their involvement in traditional classroom learning activities are not so positive mainly because they have fewer chances to express themselves or communicate with teachers and classmates. Most students believed that they could follow the teacher in class (Mean=4.05) and focus their concentration (Mean= 3.40) (see Table 4.1).

TABLE 4.1
DESCRIPTIVE STATISTICS OF STUDENTS' PERSPECTIVES

Statements	Mean	Std. Deviation
1. In the traditional classroom learning setting, I feel studying English is enjoyable.	2.8500	1.03999
2. In the traditional classroom learning setting, I could well communicate with my teacher.	2.6500	.93330
3. In the traditional classroom learning setting, I have many chances to express myself.	2.1000	.91191
4. In the traditional classroom learning setting, I could follow my teacher.	4.0500	.51042
5. In the traditional classroom learning setting, I have many chances to discuss with my classmates.	2.7500	1.25132
6. In the traditional classroom learning setting, I could focus my attention.	3.4000	.82078

In this questionnaire, questions 7 to 10 are about whether the traditional teaching approach could improve students' English language ability, such as listening, speaking, reading and writing ability. According to the collected data, in students' perspective, reading and writing could be better improved through the traditional teaching approach while listening and speaking are often neglected (see Table 4.2).

TABLE 4.2
DESCRIPTIVE STATISTICS OF STUDENTS' PERSPECTIVES

Statement	Mean	Std. Deviation
7. The traditional teaching approach helps to improve my listening ability.	2.7500	.78640
8. The traditional teaching approach helps to improve my speaking ability.	2.4000	1.04630
9. The traditional teaching approach helps to improve my reading ability.	2.8000	.83351
10. The traditional teaching approach helps to improve my writing ability.	3.3000	.92338

2. Students' Attitudes towards the Blended Learning Approach

In the post-questionnaire, students were asked to state their overall attitudes towards the blended learning approach, E-learning process on the WCETP, face-to-face learning process in the classroom, and their opinions about the influence of blended learning on their personal development.

According to the data in Table 4.3, most students show more positive attitudes toward this blended learning model than traditional teaching approach.

TABLE 4.3
COMPARISONS OF STUDENTS' ATTITUDES TOWARDS THE BLENDED LEARNING APPROACH AND THE TRADITIONAL TEACHING APPROACH

Statements	Mean	
	the traditional teaching approach	the blended learning approach
1. This teaching approach could stimulate my interests in learning English.	2.6000	4.3000
2. This teaching approach is helpful for my English study.	3.9000	4.3000
3. I could be accustomed to this teaching approach.	3.8500	4.4500
4. I feel studying English is enjoyable.	2.8500	4.5500

In terms of students' attitudes towards whether these teaching approaches could benefit for their personal development. Data in Table 4.4 show that many students think that compared with the traditional teaching approach, blended learning is better to raise their self-confidence, foster their learning autonomy, the ability of collaborative

learning and communication skills.

TABLE 4.4
DESCRIPTIVE STATISTICS OF STUDENTS' PERSPECTIVES

Statements	Mean	
	the traditional teaching approach	the blended learning approach
This teaching approach helps to foster learning autonomy.	2.7500	4.1500
This teaching approach helps to improve my ability of collaborative learning.	2.9000	4.1000
This teaching approach helps to raise my ability of communicating with others.	3.0000	4.3000
This teaching approach helps to develop my self-confidence.	3.1500	4.4500

a. Students' Perspectives on the On-line Learning Based on WCETP

Generally speaking, students are interested in and satisfied with the online learning part based on WCETP. Students think the design of WCETP is rational and easy to operate (mean score of 4.45). With the help of WCETP, students find it possible for them to select learning materials based on their own English level (mean score of 4.60). What is more, they are clearer about learning objectives via WCETP (mean score of 4.05). Students believe that the discussion forum is very useful for them to communicate with their peers and their teacher (mean score of 4.25). Besides, the assessment system on WCETP is helpful to offer feedback in time for their English study (mean sore of 4.55).

In terms of communication function, students give a positive evaluation. They think through WCETP they could communicate well both with their classmates (mean score of 3.95) and their teacher (mean score of 4.30).

b. Students' Perspectives on Face-to-Face Classroom Learning

Compared with traditional classroom teaching, students find that the classroom learning portion in blended learning is more interesting, which could better activate their enthusiasm (mean score of 4.60). In face-to-face classroom learning, students think they have more chances to interact with teachers and communicate with other students (mean score of 4.35). Besides, in face-to-face classroom learning, they could make practical use of what they have learned from WCETP (mean score of 4.10).

Obviously, in this way, students are more interested in English learning, which is also one of the goals of the new College English Curriculum Requirements.

From the above discussion, we can see that students' overall attitudes towards and satisfaction with blended learning is good. Most students hold positive perspectives on this new teaching model, which could help them to become autonomous learners and achieve better learning performance.

C. Results of the Interview

The first interview was carried out among both the control group and the experimental group before the experiment. From the interview, most students have studied English for more than seven years in the traditional face-to-face learning environment, so they are quite used to this teaching approach.

However, oral English and communication skills remain to be the most difficult part in their English learning since they are given fewer chances to speak or communicate in English in the traditional English learning setting. They show a strong desire to gain more opportunities to communicate in English with both their teacher and classmates. When asked whether the traditional teaching mode should be reformed, most of them (92.5%) gave a positive answer.

At the end of the experiment, another interview was conducted only among the experimental group. They were interviewed in a relatively leisure atmosphere, where they tended to be free to express themselves. Questions in the interview were mainly about their opinions about and attitudes towards the implementation of the blended learning approach on the WCETP in order to find out as much as possible information that could not be revealed in the questionnaire. In addition, suggested improvements and their thoughts about autonomy learning were also gathered.

Almost all the participants interviewed had positive attitudes towards the blended learning approach. Some students said they liked the flexible and interactive features of the new learning mode, which could stimulate their interests at best. Some said they preferred this self-paced study and they could review what they might miss in the classroom in time. Some students believed that they had established a closer relationship with their classmates through participating in blended learning activities.

As for the autonomy learning, most students admitted that blended learning was a good way to improve their autonomous learning ability and their autonomous learning awareness was also enhanced through studying on WCETP. However, there were three students who expressed that they were not so used to learning on their own in the online autonomous environment, because they were often distracted from their learning by so many temptations on the Internet. These students were more accustomed to the traditional mode of lecture delivery and they needed more supervision and guidance while learning online. Therefore, training their autonomous learning awareness and ability is especially important for these students.

When talked about their difficulties they came across in their blended learning, most of the participants hoped to have more time for online English learning with the help of their teacher. Several students reported the pressure they faced since they had to devote themselves to both the online environment and the classroom environment and they had to spend much more time on English learning, which was stressful for them.

D.   Results of the Tests

Scores of the participants' College Entrance English Examination were adopted for the selection of the research sample. The scores of the examination of the first semester (pre-test) were collected before blended learning approach was implemented. The scores of the examination of the second semester (post-test) were also collected after blended learning approach was implemented in the experimental group.

TABLE 4.6
DESCRIPTIVE STATISTICS OF ALL PARTICIPANTS' ACHIEVEMENT IN THE THREE TESTS

Test	Group	No.	Mean	Std. Deviation
College Entrance English	the control group	20	70.4500	4.92550
Examination	the experimental group	20	70.7000	4.41409
The examination of the first	the control group	20	73.6000	5.46183
semester (pre-test)	the experimental group	20	74.3500	5.44072
The examination of the second	the control group	20	78.0500	6.04784
semester (post-test)	the experimental group	20	82.2000	5.22591

From the data in Table 4.6, we can see that the average score of their College Entrance English Examination of the control group was 70.45, while the average score of the same examination of the experimental group was 70.70. The standard deviations of these two groups are 4.92550 and 4.41409. According to the statistics, the two groups have a similar mean and standard deviation, which indicates that the English levels of the participants in these two groups are very similar. In other words, their scores are not significantly different, which means they are almost at the same English level.

Participants' scores of the pre-test showed no significant difference compared with their College Entrance English Examination. The average score of the control group was 73.60 and the experimental group was 74.35, and the standard deviations were 5.46183 and 5.44072 respectively.

The examination of the post-test was taken after the blended learning approach was implemented in the experimental group. In order to further determine whether there is a significant difference between the control group and the experimental group in terms of academic achievements during pre- and post-tests, an independent samples T test was conducted using $p<0.05$ level of significance.

TABLE 4.7
INDEPENDENT T-TEST OF TOTAL SCORES IN PRE-TEST AND POST-TEST

		N	Mean	Std. Deviation	Std. Error Mean
Pre-test of groups	the control group	20	73.6000	5.46183	.58079
	the experimental group	20	74.3500	5.44072	.62404
Post-test of	the control group	20	78.0500	6.04784	.70749
groups	the experimental group	20	82.2000	5.22591	.52523

TABLE 4.8
INDEPENDENT SAMPLES TEST IN PRE-TEST AND POST-TEST

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
pre-test of groups	Equal variances assumed	.082	.776	.078	58	.938	.0667	.85249	-1.63978	1.77312
	Equal variances not assumed			.078	57.703	.938	.0667	.85249	-1.63997	1.77330
post-test of groups	Equal variances assumed	5.674	.021	-2.118	58	.038	-1.8667	.88113	-3.63045	-.10288
	Equal variances not assumed			-2.118	53.518	.039	-1.8667	.88113	-3.63360	-.09973

Table 4.7 showed the mean scores and the standard deviations of two groups in the pre-test and post-test. From the table, we could learn that the mean scores of the experimental group have improved a lot. From Table 4.8, we can see that in pre-test Sig. (2-tailed) =0.938>0.05, and because zero belongs to 95% Confidence Interval of the Difference (-1.63997～1.77330), the significance of difference does not exist between the control group and the experimental group, which indicates there is no big difference on their achievement between the two groups. However in the post-test, Sig. (2-tailed) =.038<0.05, and zero does not belong to 95% Confidence Interval of the Difference (-3.63045～-.10288), which means the significance of difference does exist between the control group and the experimental group. Therefore, it could be concluded that the participants in the experimental group have a higher English achievement than that of the participants in the control group.

From the results of the tests, the conclusion could be drawn that the application of the blended learning approach to WCETP may have a positive effect on students' academic achievement. The advantages of integrating online learning with face-to-face learning contribute to the improvement of students' performance in language study.

V. Conclusions and Recommendations

A. Summary of the Study

Along with the exponential growth of the Internet and the World Wide Web, more and more educational institutes are experiencing the shift in instructional platforms to enrich teaching and learning setting for a variety of needs and demands. The application of the blended leaning approach, which integrates the advantages of traditional teaching with online learning, has drawn great attention of language teaching instructors and researchers.

This study was designed to investigate the differences of students' attitudes towards and satisfaction with two different learning approaches: the traditional face-to-face teaching approach and the blended learning approach based on WCETP, as well as their learning effectiveness of college English under the blended learning environment.

From the discussion in Chapter Four, it could be determined that compared with the traditional teaching approach, participants hold more positive attitudes towards the blended learning approach based on WCETP. In participants' view, WCETP is a powerful and useful Web-based learning platform, which could enable them to get access to substantial English learning materials, discuss with their peers online, contact with their teachers by e-mail, and self-assess their learning and monitor their progress. Compared with the traditional face-to-face learning model, participants prefer to this new blended learning model, which could better stimulate their interest, foster their autonomous learning and collaborative learning, and prompt their confidence.

What is more, the quantitative research with the comparisons of language learning achievement between the experimental group and the control group revealed that students performed better in language learning under the blended learning model than under the traditional learning model.

Meanwhile, the study offers some useful implications and recommendations for college English teaching reform.

B. Limitations of the Study

The present study has the following limitations that might invite challenges.

1. One limitation is that small number of participants selected in this study and all of them are students majoring in Clinical Medicine in a medical university in eastern China, so whether the results of this study could represent general learners in China is doubtful.

2. Due to various constraints for both participants and the researcher, the duration of this study lasted only for one semester (three months), which may not be long enough for a new learning approach to be better implemented or testified or for the researcher to see the effects that could be made by the participants in this new learning environment. So if the experiment could last longer, it would be more convincing.

C. Pedagogical Implications

The findings of this study have implications for both college English teachers and students.

Firstly, there is a great change in roles of both teachers and the learners in this blended learning approach. In the blended learning environment, teachers should not be the authority or center of learning but act as an organizer, developer, manager, administrator and a promoter to maximize the activeness, initiative and creativeness of students with the elements of contexts, collaboration and conversations to help students achieve the meaning construction of the knowledge they are learning.

Consequently, combining with the features of blended learning, students will become the planner (of his or her own learning), assessor (of self and others), evaluator of autonomous language learning, motivator (of self), administrator (of own learning), organizer (of own learning), advisor (to other learners) (Gardener & Miller, 1999).

Secondly, it is essential for teachers to help students foster learning autonomy. Following the most generally accepted definition of autonomy as "the ability to take charge of one's own directed learning" (Holec, 1981, p. 3), learners have to develop special skills for determining their own needs, goals, ways of learning and evaluation. It is not something people are born with—the learners have to be taught how to help themselves, and how to manage their own learning. Sinclair (1999) points out that without an explicit and conscious awareness of the processes involved in learning a language, learners would not be in a position to make informed decisions about their own learning. Therefore, cultivating learner's autonomy or independence should be regarded as the end goal teachers and educators pursue.

D. Recommendations for Future Research

The findings of the study revealed a need for further research:

How to design and develop the modules of the Web-based Teaching Platform, that could be better utilized to provide virtual learning environment for assisting College English teaching and learning.

How to organize and manage online resources that can be integrated in existing college English Curriculum for effective autonomous learning and collaborative interaction to maximize students' English learning in the blended environment.

How to provide learning strategy training and constant technical support, that could help students be better accustomed to this new learning model.

The application of blended learning to the current language learning and teaching has been the mainstream of language education reform in China; thereby we should catch the good opportunity to make more in-depth research so

as to gain more fruitful achievements in China's foreign language education.

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