An Investigation on Learning of College Students and the Current Application Situation of the Web-based Courses

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Abstract. It has become a hot issue in the field of autonomous language learning via computers and the Internet, and recent years have witnessed some educational efforts ranging from textbook to web-based courses. However, little has been done to study students' perspective outside the classroom where a variety of online resources are available to them. In this study, in order to conduct a preliminary research in this area, a questionnaire survey was conducted to investigate the current situation of Chinese college students' English learning using online resources outside the classroom. 150 subjects of this study were chosen from four entire classes of English major. The valid data obtained both from the examination and from the questionnaire were processed and analyzed with the aid of SPSS 12.0. Furthermore, taking the Advanced English course of Ningbo University as the case, the article has studied its current situation of network courses application through investigation on the network courses platform. In addition, final exam scores of the selected course have been collected from 2004 to 2007 to compare student performance between study online group and face-to-face group. The findings of the survey reveal that a majority of the students have affirmative attitudes toward using online resources in their web-based learning and many of them have online English learning experience. And there was not a significant difference between the online study group and their peers. Lastly, this paper discussed research methods for evaluating the web-based courses' effect on students' performance and statistical methods for identifying performance trends.

Keywords: College students; Web-based course; Online survey; Questionnaire

1. Introduction

Recent researches have focused on the human language learning which had begun to shift from how to teach to how to learn, because each person, to what extent, is ultimately responsible for his/her own learning and engages his/her own personality in the learning process [1]. And learning takes place only when learners actively construct their own understanding and knowledge through their interaction with the world around them.

In response to the Education Ministry's requirement on the reform of higher education, Most of the universities in China are using technology to develop courses that meet students' educational needs and goals. Universities are implementing different types of technology-supported learning. Web-based course, which can be used to enhance learning outcomes by facilitating efficient delivery of instructional strategies and by supporting certain activities such as cognitive problem solving and decision-making processes of the learner, is a kind of learner-centered curriculums with the purpose of meeting different individual learners' diverse needs. Students engage in web-based courses learning may be those best prepared to meet these challenges for the future.

However, web-based course is not a simple integration between traditional course and network technology, but a special field information technology and course with students' perspective.

The evaluation of perspectives and specifications of a web-based course is an important and difficult practice. More attention has been paid to the course learner's individual difference with related to the web-based course learning [2]. A lot of research has been carried out to assess the web-based courses. Our

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studies concerned the undergraduates' satisfaction and achievement in web-based courses and the comparison between the online courses and traditional face-to-face courses to the web-based course's effect on actual student performance.

2. Background

From the beginning of this century, Ningbo University has established many web-course learning systems, and the e-learning environment has been built up.

More than 750 web-based courses have been established in Ningbo University in recent years. However, little empirical research was conducted on the individual difference in self-access learning environment.

The environment of the study is Advanced English course taught at Ningbo University, which was run in four18-week semesters.

Previous research studies and tests have confirmed that learning styles in language learning both influence the proficiency of course learning to some extent [3].

The purpose of this study is to examine the learning strategies, satisfaction and achievement of English majors in web-based E-learning and explore the correlation between students' learning style and their performance with empirical method.

3. Research Methods

The study was conducted at Ningbo University. The study consisted of both quantitative and qualitative investigations. The purpose of the quantitative study was to gain an overall picture of whether there was any statistically significant change for all the subjects related to learner autonomy.

As language learning is a complicated process and gets more complicated in a computer-assisted classroom, qualitative study was employed as the major research method in this study so as to reveal the whole changing process.

Through a combination of both quantitative and qualitative methods, this research aims to gain a better understanding of changes web might bring about in the students' learning beliefs and strategies related to learner autonomy, as well as the underlying factors leading to the changes, so that we can design and implement the web-based courses more effectively in the future.

The findings have both theoretical and pedagogical implications. It contributes to the informative data of learning style and learning strategies and their impact on web-based self-access learning and would be helpful to self-access learners' effective learning. Pedagogically, it encourages teachers to provide valuable guidelines to design, deliver, and evaluate self-access learning courseware that satisfies self-access learners' diverse cognitive styles.

3.1. Participant

150 English majors divided into four intact classes of Faculty of Foreign Languages, Ningbo University, were chosen as the subjects in this study, of whom 119 are females and 31 are males with an age ranged from 19 to 22. The participants were invited to respond to the same questionnaire at the end of each semester they selected the Advanced English course from 2004 to 2007. The student background survey revealed that most participants were drawn to this by virtue of their personal interests in both English communication and computer skills.

And the interviews were conducted in the language lab of the English department with the help of the teacher who gave the course. Each lasted about an hour. The raw data collected were processed by means of SPSS12.0.

3.2. Research instruments

In order to measure students' attitude toward web-based course a questionnaire was designed and submitted on paper to the students at the end of each semester. The questionnaire contained 10 statements to which students can show their agreement or disagreement. All the interviews were tape-recorded and then transcribed with the permission of the four Interviewees.

Information on students' use of Web-based course throughout term time was obtained from the Web-based course management system of Ningbo University, which provides information on how many times each student visited each web page and how much time they spent exploring it [4].

Statistical data about students' use of web-based courses was collected weekly. The statistical data was mainly in numbers giving information about how many times each student visited the web page for the Advanced English course and how much time they spent on them. Students' general uses of web-based course were measured by the number of times each student accessed web pages or used the discussion board for the observed modules.

Furthermore, students' achievement was measured by their final exam grades of the selected course Advanced English. The performance of online students was compared to their face-to-face peers. In order to find out whether or not these differences are statically significant, an ANOVA test was carried out.

4. Survey Results

The survey-based evaluation of student performance in online and face-to-face groups is part of a larger study on the effectiveness of approaches to autonomous learning that has been ongoing since 2004. As part of the larger study, students complete an anonymous survey on their opinions and satisfaction with the level of self-determination used in the web-based courses.

The survey consists of 10 questions, as shown in tableⅠ.

TableⅠshows that the opinions of the students were more positive with respect to web-based course design. These results appear to indicate that the students participated in the survey were relatively satisfied with the web courses approach.

From tableⅡ we can know that students contact online courses through various channels. 40% of the students recommended by teachers, and only 18% of the students search through the network. The left 16% students said they did not know the network of course at all.

TABLE I.　　SURVEY STATEMENTS RELATED TO THE WEB-BASED COURSE

Statements	Strongly Agreement (%)	Neutral (%)	Strongly Disagreement (%)
I am very satisfied with my learning experience in the web-based course.	48	29	23
The guidance provided by the instructor is sufficient.	26	25	49
The topic is adequately.	52	33	15
Online course are of great help for us to understand materials.	54	28	18
With the help of the network we can successfully pass the exam	62	25	13
With the help of the network we can expand the knowledge	69	29	12
Online learning is effective than traditional classroom teaching.	54	11	35
The learning objectives of online course are clear.	39	42	19
The difficulty of course content is moderate.	65	20	15
Online course can meet the individual learning need.	47	39	13

TABLE II.   WAYS THAT STUDENTS UNDERSTAND ONLINE COURSE

Access Way	Teacher Recommendation	Peer influence	Web Search	Media	Never Learned
students (%)	40	15	18	11	16

TABLE III.   WEEKLY TIMES STUDENTS ACCESSED WEB-BASED COURSES

Visit Frequency (weekly)	f<3	3≤f≤5	f>5
students (%)	77	20	3

TABLE IV.   STUDENT'S VISITS AND ATTITUDES OF EACH COLUMN OF THE WEB-BASED COURSE

Column	Teaching Resources	Interaction	Assignment	Teamwork
weekly visits	578	219	243	124
satisfaction (%)	86	70	60	60

The survey results as shown in table III indicated that the use of web-based course was not sufficient. Only a very small number of students browse the number of more than 5 times one week.

As shown in table IV, most of the students surveyed are satisfied with the four major columns, and the teaching resources turned out to be extremely popular with students, and they ranked its value as number 1 out 4 on the survey.

Table V told us that most of the students look the web-based course as a network database, and other effects of network course have been ignored.

5. Students' grade analysis

Examinations of the final grades were conducted to assess the performance of online students as compared to their face-to-face peers.

The course Advanced English had been taught by the same teacher during four successive semesters from 2004 to 2007. The course was not based on web in 2003 and 2004, and supported by web in 2006 and 2007.

Except for the addition of the web-based course and the updating of some of the technical material, the course was essentially the same in each of the four semesters. The final exam results using percentile in each of the four years, before and after the introduction of the web-based course, are shown in Table VI.

The comparison of students' final grades before and after the web-based course was introduced and the results show that the online group had a slightly level of achievement in the web support course.

TABLE V.   STUDENTS' PURPOSE OF VISITING THE COURSE

Purpose	Experiment	Online Testing	Class Discussion	Download Lesson Plan	E-learning Materia	Watch Teaching Video	Homework Exercises
students (%)	20	7	8	26	12	18	9

TABLE VI. MEANS TABLE FOR FINAL STUDENTS GRADES FOR THE SAME COURSE

Year	Mean	N	Std. Deviation	Minimum	Maximum
2004	81.56	35	13.08	63.00	96.00
2005	83.02	33	11.23	65.00	92.00
2006	85.47	38	14.38	55.00	98.00
2007	89.98	44	9.98	69.00	99.00

TABLE VII. ANOVA RESULTS OF FINAL STUDENT GRADE DATA

Source	Sum of Squares	Deg. Of Freedom	Mean Square	F Ratio	P Value
between groups	19.86	3	6.62	4.47	0.058
within groups	164.25	111	1.48		
total	184.11	114			

TABLE VIII. REASONS WHY STUDENTS ARE RELUCTANT TO ACCESS THE WEB-BASED COURSES

Reasons	Course Content Is Not Lively	Poor Interaction Between Teacher and Student	Network Support Is Not Strong	Network Connection Is Not Fast Enough	Network Guidance System Is Not Sufficient
Students (%)	30	26	70	45	56

Since the P-Value of the F-test is more than 0.05, as shown in Table Ⅶ, there was not a statistically significant difference in students' performance after the web-based was introduced. While these results do not indicate a statistically significant difference between the two groups, the evidence supports the hypothesis that the online group attained at least the same level of achievement and satisfaction in the course as those face-to face students, which is consistent with the findings of Zhang [5].

Many students say that although the online course learning resources are abundant, but many of them lack vivid. In addition, there are also some factors that affect students often access the network, including network support, navigation system, network connection speed and content update frequency, as shown in table Ⅷ.

6. Discussion

Based on the students' responses to the questionnaire, the overall attitude of the students toward using web-based course was positive [6]. This result backs up much research in the area. Some possible reasons for the success of the online student group include that they seemed to take greater care to fulfill the course obligations. Another factor that may have contributed to the success of online team is that the online environment promotes a more independent learning process and therefore they may be more accustomed to learning autonomously. They were more likely to contact the instructor with questions through the BBS platform, and they appeared to communicate more precisely.

The performance differences between the means of the students' grades of the two groups (online and face to face) are clear however they are not statically significant. This leads to the conclusion that web seems not to be a significant factor in students' learning achievement.

But, on the whole, students' autonomous learning ability in such an environment is far from being satisfactory. On one hand, they cannot use online resources adequately to facilitate their English learning outside the classroom; on the other hand, they lack appropriate autonomous language learning strategies and expect to rely greatly on the teacher. All these result in the students' high expectation of teachers' guidance

and assistance. Therefore, we still have a long way to go to make our students learn autonomously in the web environment.

Although the web-based courses were claimed to be useful and effective to promote English learners' language ability, the present study indicates that technology itself does not ensure successful autonomous learning at all. If students really want to benefit from online resources in their English learning, network support and teachers' appropriate guidance and assistance are quite necessary.

7.   Conclusion and future work

Though we have to admit that the sample used in this study is relatively small and limited, we can still get some conclusion from the study.

Results of this research indicated that the students in the online section performed at least as well or better than students in the traditional course without network support. This is because a large number of the surveyed college English learners have a positive attitude toward resources on the Internet, and many of them already have the experience of visiting the web-based courses.

However, since college students involved in the study are all from English major of Ningbo University, the results from the study have their limitations. It is suggested that further research can also focus on non-English majors.

It is found that students cannot well grasp learning strategies to adapt to the online learning. One possible way to solve the problem that students are not good at using web courses may be establishment the integrated E-learning platform where both students and teachers can share their resources found on the Internet and discuss with each other [7]. And students need to be trained to take more responsibilities for their own learning and grasp some beneficial strategies for the new learning mode. The teachers also play a key role in making the course content more vivid to attract students. Certainly, the network managements have an obligation of training students from the technical aspect.

Overall, English online autonomous learning is developing at an ever-increasing speed in recent years. We hope that this preliminary research will be of help in future research in this field.

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