

The Universal Design of Online and Offline Blended Teaching in Universities

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Abstract. Online and offline blended teaching has been continuously promoted and applied in different college courses. This paper suggests the universal design of online and offline blended teaching in universities, taking the case study of 165 students in English Reading Course during one term. With the universal design, teachers focuses on the teaching mode, teaching resources, teaching methods and teaching evaluation during the process of the online before class, online and offline in class, online after class. It can be found that most of the students managed to read various English materials, developed good reading habits and improved reading ability at the end of the term. The universal design of online and offline blended teaching has achieved the expected teaching objective of the curriculum, promoting the curriculum reform in universities.

Keywords: online and offline; blended teaching; information technology; curriculum reform; English reading course.

1 Introduction

With the rapid development of information technology, big changes have taken place in college teaching. As an effective carrier for the deep integration of information technology and education, online and offline blended teaching has been continuously promoted and applied in college curriculum. The so-called online and offline blended teaching takes the advantages of online learning, makes up for the problems faced by classroom teaching, integrates classroom teaching and online courses with a variety of information technology, and achieves more efficient teaching and learning. Online and offline blended teaching innovates the teaching model and has become the main model of college teaching in the new era [1]. Online and offline blended teaching has truly implemented the concepts of educational equity and lifelong learning with information technology, and has also become the main trend of curriculum innovation in universities.

2 Online and offline blended teaching in universities

The online and offline blended teaching is considered by the scholars and teachers as an effective teaching mode, and the research shows a clear growth trend. Most of the researchers come from universities with developed economy and higher education, and mainly focus on the

fields of ontology research, educational technology, adult education and computer science. Wang and his cooperators used the content analysis method to sort out the current situation, existing problems and research trends of domestic blended learning research, finding that blended learning has shown a clear growth trend in the past 10 years, and the applied research of blended learning techniques has increased in innovation and depth[2]. Some research suggest it should be improved from teaching awareness, teaching implementation and teaching feedback[3]. Based on three years of online and offline blended teaching practice, Li and Wei proposed a learner learning behavior evaluation index system with learning attitude, learning method, collaboration and learning effect as the core elements, excavated the endogenous motivation of students to improve their learning attitude, gave guidance, feedback, reflection and guidance methods to optimize the teaching process, and put forward some suggestions and strategies for cultivating the spirit of cooperation to enhance interaction, communication and cooperation, providing a reference for teachers to effectively carry out blended teaching [4]. The previous studies have also explored and discussed the blended teaching reform practice of different courses from the micro level. Taking the “C Language Programming” course of Harbin Institute of Technology as an example, Su and other researchers introduced how to integrate online teaching with traditional classroom teaching to realize the blended teaching with MOOC and SPOC both inside and outside the classroom [5]. Wang and Xu analyzed the necessity and feasibility of implementing blended teaching and constructed a blended teaching process in the course of “Educational Statistics and Measurement”, based on theories such as “Learning Community”, “Student Centered” and “Learning by Doing” and “Multi Person Chat” function in the QQ software [6]. Wang and other researchers took the “Circuit Principles” course as an example, explored the blended teaching suitable for large classrooms and considered it help to enhance students’ confidence in learning and solve the teaching problems of major compulsory courses in large classrooms[7]. Liu actively explored the online and offline blended teaching mode based on the three-dimensional interaction of “Flip, Live Broadcast and Practice”, in order to provide an effective teaching mode for Journalism and Communication Courses[8]. Li and Xu took the online teaching practice of two ethnic universities, Minzu University of China and Dalian Minzu University as examples, and believed that information majors in ethnic universities should take online and offline blended as the main model of the “Golden Courses”, reasonably arrange the priority and proportion of online and offline teaching, use online resources and technology skillfully, and focus on extracurricular development and all-round diversified evaluation [9]. Wang and Zeng explored the “MOOC, SPOC and Flipped Classroom” blended teaching model of Ideological and Political Courses, using various ways to illustrate the theories inside and outside the classroom, activating the teaching content, sharing teaching resources, using various forms to mobilize students’ enthusiasm for learning, strengthening the training of teachers’ comprehensive quality, and striving to explore blended teaching model [10].

With online courses such as MOOC and Micro Courses, the English teaching environment in colleges has undergone significant changes. In English curriculum, some researches also focus on the online and offline blended teaching. Ma and other researchers carried out the large-scale online and offline blended teaching reform by taking the national online high quality course “New Standard College English” as an example, and discussing how to transform it into “New Standard College English” private courses, comprehensively improved the quality of college English teaching, and finally constructed a national blended high quality course “Comprehensive English” [11]. Ruan and Zhan took a university as an example, carried out an

online and offline college English teaching research on the basis of fully investigating students' learning needs, innovating and constructing a college English curriculum teaching mode with school-based, student-oriented and highlighting autonomous and cooperative learning characteristics [12]. Diao and Liu explored the ideological and political elements in the online and offline blended teaching of English curriculum, and believed that in English teaching, we should focus on the fundamental task of cultivating morality, use the effective network resources, reconstruct the curriculum system, and fully excavate the ideological and political education in the English teaching [13]. It is important to realize that blended teaching reform should be taken so that students can be active and independent to learn, promoting the construction, development and innovation of English curriculum universities.

Most of the previous studies have provided a rich research foundation, but there are still some problems. The information-based teaching reform is generally manifested in the application of both "online" resources and platforms in classroom teaching, still usually centered on teachers but not dominated by students, without the universal design of the online and offline blended teaching. Teachers adopt qualitatively different approaches to both teaching and design for blended learning for different concept of the blended learning[14]. Since English is the public course in universities, this paper demonstrates the concept of universal design of the online and offline blended teaching, taking the case study of English Reading Course in universities and giving suggestions for the blended teaching of curriculum reform in future.

3 Design of the online and offline blended teaching in universities

Online and offline blended teaching refers to the using of information technology, especially online courses such as MOOC and Micro Courses in teaching, so as to improve the teaching quality of the entire course and cultivate high-level, high-ability and high-quality talent. To construct a first-class blended curriculum, college teachers need to carry out teaching through "online", "online" and "offline", and "online" approaches and give full play to the advantages of online and offline blended teaching. The blended teaching does not simply refer to online resource learning and offline classrooms but online and offline being closely integrated and inseparable. In general, the online and offline blended teaching can be carried out from the teaching mode, teaching resources, teaching methods, teaching evaluation, each of which can be further carried out from online before class, online and offline in class, online after class. Before class, teacher and students are preparing for the class through lots of activities online. In class, teacher and students take their roles both online or offline. After class, teacher and students continue their teaching and learning online. The universal design of online and offline blended teaching can be shown in the following Figure 1.

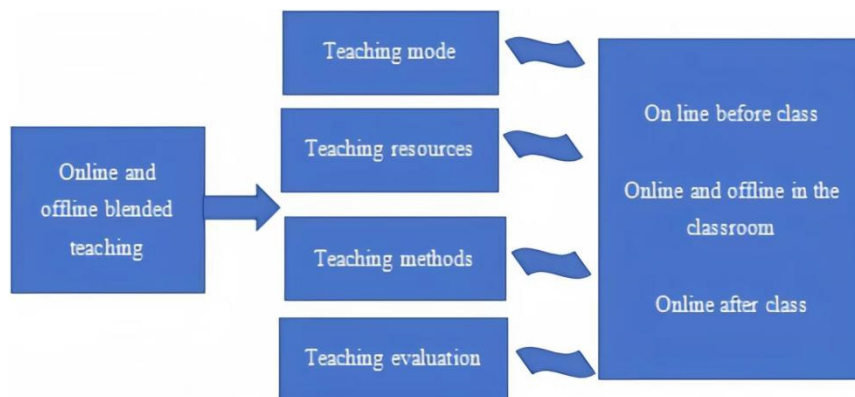


Figure 1. Universal design of online and offline blended teaching.

3.1 Innovate teaching mode

The key to online and offline blended teaching is to realize in-depth interaction between online teaching and offline teaching through the development and design of specific teaching modes. Teachers must design “online” teaching plans, carry out further “online and offline” teaching activities, and continue “online” according to teaching goals and students’ learning. Firstly, through online teaching platforms, such as QQ, WeChat, and ChaoXing, teachers can organize students to study online course resources, watch video, do specific exercises, and discuss with each other. Then, online and offline teaching requires teachers to check students’ online learning, further deepen online learning content, design offline teaching plans based on online learning performance, so as to guide students to learn independently. Most importantly, teachers need to discover and solve problems online in time, focus on discussing and strengthening the main problems online and offline in the class, and make reasonable choices according to the specific needs of teaching to achieve the best learning effect online after class. In the online and offline blended teaching, the teaching mode is not always the same but developing and changing according to students’ learning during the process. It is significant to explore the advantages, application value and practical ways of the online and offline blended teaching mode and encourage students to participate in the whole process of learning.

3.2 Optimize teaching resources

Making full use of online high-quality teaching resources is an important way to construct online and offline blended courses in universities. Blended teaching breaks the traditional time and space constraints, reduces the regional differences characteristics of resource, and effectively integrates online and offline high-quality teaching resources, which is conducive to constructing a high-quality comprehensive teaching resource platform. In recent years, online resources such as national high-quality online courses have been fully applied to the construction of blended teaching in curriculum in universities. Most of them are relatively mature, systematic and wide-ranging online courses that can support online learning, management, live broadcast, interaction, evaluation and other teaching activities. Teachers can choose appropriate online resources or construct their own teaching materials based on some resources such as online courses, materials on teaching platform, e-books in the library, videos

and pictures on the Internet and other information as an effective supplement and extension of textbook, which can effectively expand the teaching content and optimize the teaching resources. Making full use of high-quality online and offline resources, allowing teachers and students to choose what to learn according to their needs, can further expand the teaching content of college curriculum, cultivate teachers' teaching ability and students' autonomous learning ability, and comprehensively promote the innovative development of college teaching.

3.3 Enrich teaching methods

The basic idea of blended teaching is to realize online and offline interaction with the information technology in the teaching process, dominated by students with the cooperation of teacher, providing new ideas for blended teaching reform. In online and offline blended teaching, teachers can make full use of flip-classroom, using a large number of online teaching resources, leaving part of the classroom learning content outside the classroom, creating questions and situations to guide students to collaborate, exchange, collect information, solve problems and construct knowledge through personalized learning, group cooperation and topic discussion. In terms of human-computer interaction technologies of artificial intelligence, teachers can give the tasks, discuss and solve the problems of students in time online, even with the help of educational robot. Also, in the blended teaching, teachers can use some learning platform, social media, and teaching methods such as questioning, group reporting, discussing, writing, presentation and investigating to know about students' learning time, the statistics of the correct rate of homework, error analysis, difficulties and doubts, and further adjust the teaching arrangement through the online interaction. Still, with the development of technology, teachers can make full use of automatic speech recognition which is a good way to interact with each other. Of course, various forms of information, such as pictures, texts, audio, video and animation can be used to arouse students' senses and stimulate their interest in learning. Teachers need to enrich teaching methods by network resources and platforms to cultivate the students' language competence, critical thinking and problem solving ability in the interaction.

3.4 Improve teaching evaluation

The cooperation of online and offline classroom teaching evaluation can make students consolidate the teaching content, strengthening the teaching effect of blended teaching. The traditional offline teaching evaluation of these knowledge and skills mostly stays in classroom learning performance and the after-school homework, which is often the shortage of teaching. Students often passively participate in learning and completing homework, while teachers feel difficult to master, track and participate in the whole process of students' learning activities. Also, students' practice and teachers' feedback are often limited and not timely. The blended teaching is conducive to strengthen the evaluation of in and out of class and online and offline learning, emphasizing the promoting learning through enriching inquiry, report, thesis and other homework evaluation, and adopting the combination of process evaluation and summative evaluation. Students can submit their homework on mutual evaluation online platform. Teachers can correct their homework synchronously on the computer and achieve a large number of dynamic and timely teaching feedback at the same time by online questionnaires, surveys and other methods. Further, teachers can dynamically adjust online and offline teaching, maximize the integration of classroom and extracurricular, and carry out corresponding

teaching innovation for the instant obtainment of students' online and offline learning performance on the online platform, grasp of the possible deficiencies in teaching. With the help of online and offline blended teaching, students' autonomous learning and teachers' timely feedback become possible. It is significant to improve students' curriculum learning.

4 Case study of the online and offline blended teaching of English Reading Course in universities

The online and offline blended teaching focuses not only on the traditional classroom and online teaching, but also on teachers' guidance and students' self learning ability without the limitations of time and space, laying a solid foundation for the reform of English teaching in universities. Feng pointed out that every teacher in universities needs to study and practice the blended teaching model, design more and more high-quality flipped classrooms, and create a high quality online and offline blended "Foreign Language Golden Course" with Chinese characteristics that meets the needs of students, making a qualitative leap in the quality of foreign language talent training in universities [15]. According to the syllabus of English majors, "English Reading" is a core course for English learners, aiming to improve students' reading skills and speed, cultivate students' ability of careful observation and logical thinking, and promote students' basic language skills and humanistic quality. The students of English Reading Course in the semester are divided into four classes with about 40 students in each class, a total of 165 students.

Online and offline blended teaching needs to make full use of online courses with localized transformation in order to meet the characteristics and needs of students. This course uses the textbook English Reading edited by Zhao Wenshu and Wang Shouren and published in Shanghai Foreign Language Education Press. This textbook has the following characteristics: it ranges from politics, economy, culture to history; it can help students broaden vision and learn a lot of information in various fields; it involves some basic reading skills and relevant exercises. Some other English reading materials online are also supplemented as the teaching materials, such as Peking University MOOC "English Reading" and some Netease Open Course. According to the requirements of the college English curriculum syllabus, teachers upload various course resources, micro-videos, textbooks, courseware, books, exercises, etc., share them on some online platforms, such as ChaoXing teaching platform, QQ, WeChat, etc. The online resources are integrated and utilized by teachers in a personalized manner on Internet platforms, providing new possibilities for the creation and practice of blended teaching.

According to the universal design of online and offline blended teaching, English Reading Course is mainly planned and carried out from three aspects: on line teaching before class, on line and offline teaching in class, and on line teaching after class. Students learn independently through online courses, PPT, literature work and other materials provided by teachers, and focus on the key points and difficulties in learning. Through exercises, discussions, teacher's questions and answers, students can internalize their knowledge and summarize what they have learned online and offline. After class, students can further master basic knowledge and expand knowledge through online autonomous learning. All these three processes can be presented in the following.

On line teaching before class aims at giving students a preliminary understanding of the relevant reading skills and improving their interest in reading. Teacher always releases the learning task of each class, gives brief introduction to the teaching content and shares some related videos through QQ, WeChat, Chaoxing and other platforms. Students are required to study the relevant content, watch the video independently, and share their opinion and have discussion online before class. Let's take an example. When it comes to the topic of "Food", teacher gives some related learning tasks on online platforms, asking students to collect language expressions, pictures and videos of food, and have a preliminary understanding of Chinese and western food features, ingredients, nutritional value, cooking methods, in order to improve students' knowledge and reading interest. On the other hand, students are required to complete self-reading and recommend reading materials related to the topic "food" in group. They can choose any English reading material from magazines, newspapers, books and introduces them with PPT or video with 10 minutes. The interaction and cooperation between teachers and students in the whole teaching process make students active in the online and offline blended teaching of college English.

In the classroom, English Reading Course is conducted both online and offline. First of all, students share their self-reading experience and recommend reading materials in group. After that, others students comment, ask questions and have a hot discussion. During the semester, most students choose literary classics work, such as *Pride and Prejudice*, *The Little Prince*, *The Alice's Adventures in Wonderland*, *The Old Man and The Sea*. A few students choose poetry, prose, news, movies and English materials. For example, after one group shared *Pride and Prejudice*, other students analyzed the character Elizabeth and had hot discussions about love, work and life, some students searched for different Chinese translation versions on line for comparison, some students even put forward the idea of feminism and thinking over the image of women in modern society. Blended teaching in the class has greatly expanded the student's reading field of vision and cultivated student's good reading habit. In addition, according to the online teaching before class, the teacher guides student to have a further reading, do exercises and share answers online and offline, discuss some difficult points, summarize skimming and scanning skills. For the efficiency of online evaluation, the teacher can check the answer in a few minutes with the big data technology, scanned images recognition, human-computer interaction technologies, and so on. It is only one or two minutes for the teacher to know what mistakes the students made and how many of the students are confused, and give feedback frequently, accurately and immediately. For example, when students read the following sample, they shared answers online.

Until a relatively short time ago, traveling abroad was limited to well-to-do tourists and prosperous business people. Flying abroad was not common for the average person. In time, however, plane travel became safer, more convenient, and less expensive. As a result, people of diverse backgrounds now fly to distant places for pleasure, business, and education.

---A sample from the text in *English Reading* textbook

Immediately, the teacher sees the wrong answer of some students with the help of online message, comment, and computer scoring. Some students noticed the second sentence of the passage and choose the wrong answer "Nowadays, flying abroad is not common for the average people". In fact, the true answer is "Nowadays, flying abroad is common for the average

people". It can be easy to infer from temporal words "Until a relatively short time ago", "In time", "now" and some contextual clues in the passage. In order to have a better understanding, the teacher explains and lists some important linking words such as time, place and person while reading materials online and offline in the classroom to make sure students can grasp the reading skills. In the class, the blending teaching makes teacher know about the students' shortcomings more effectively, explain and discuss according to the difficult points, further enrich the students' reading knowledge and skills.

After class, teacher allocate some related work through the learning platform online in order to check the students whether they grasp the knowledge or not. Besides, students are required to learn online course resources, including MOOC and some Open Course. Still, teacher sometimes recommends extra-curricular reading materials online, encourage students to read related articles or works, record and extract beautiful language expression, analyze and comment on relevant content, in order to help students enhance language sense, expand vocabulary, consolidate the basic skills of language, promote students' logical ability and human quality.

The final evaluation of this course at the end of the term is conducted in class performance, assignments and final examinations with the help of the online platform. Most of the students managed to read various English materials, developed good reading habits and improved reading ability. At the same time, some individuals also felt difficult to do the task online after class, it is necessary to strengthen after-school reading guidance to improve students' self learning ability. As for the achievement of the curriculum objectives, every student evaluated and scored 1 as complete achievement, 0.8 as better achievement, 0.6 as basic achievement, 0.4 as bad achievement, and 0.2 as worse achievement by questionnaire, the average score of the students was the final evaluation. The results showed that the scores of students in four classes were respectively 0.92, 0.91, 0.93, 0.92, and the lowest was 0.91. As a whole, the universal design of online and offline blending teaching in English Reading Course has achieved the expected teaching objective of the curriculum .

5 Conclusions

Compared with traditional classroom teaching, blended courses integrate the advantages of online and offline teaching. Universal design of online and offline blended teaching is not only the extension and expansion of online and offline in classroom, but also the effective integration of knowledge, ability and attainment in teaching. Through the case study of college English reading course, it can be found out that the universal design of online and offline blended teaching effectively cultivate students' autonomous learning ability and improve the quality of college teaching. It is significant for teachers to carry out the universal design of online and offline blended teaching, focusing on teaching modes, teaching resources, teaching methods and teaching evaluation from on line teaching before class, on line and offline teaching in class, and on line teaching after class, aiming at curriculum reform of education in universities. Due to individual differences, future research can also focus on the cultivation of students' autonomous learning ability in the universal design of online and offline blending teaching in universities.

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