Research on Blended Learning Implementation

SONG Chuanzhen
School of Business Administration
Shandong Women's University
Jinan, Shandong, China, 250300
30030@sdwu.edu.cn
31891575@qq.com

Abstract—With the advancement of information technology and the gradual advancement of “internet+”, blended learning has become a hot topic in current higher education discussions and research. This paper analyzes the connotation of blended learning and the shortcomings of traditional teaching, it is believed that traditional classroom teaching mode and pure online teaching mode can no longer meet the needs of talents training in higher education institutions in the era of “internet+”. Blended learning is the direction of teaching reform in colleges and universities, and it is an important practice trend of higher education informatization. The implementation of blended learning is not simply a combination of online teaching and classroom teaching, but a systematic project, which needs to be determined from the teaching objectives, teaching link design, online platform construction, classroom teaching guidance, teaching effect evaluation, etc. Starting from the pre-class knowledge learning, in-depth discussion in the class, after-class consolidation and expansion, curriculum assessment and evaluation, teaching effect reflection and other links, we truly achieve the result of “teaching is methodical and learning is effective” to help students learn independently and efficiently to improve teaching effectiveness and students' practical innovation ability.

1. INTRODUCTION
With the advancement of information technology and the gradual advancement of “internet+”, blended learning has become a hot topic in current higher education discussions and research, and traditional offline teaching has been gradually replaced by blended learning methods. The so-called blended learning is an effective combination of digital teaching (online or offline) and traditional classroom teaching, making full use of the advantages of the two to form an “online” + “offline” teaching mode. Under the blended learning mode, it can fully mobilize the enthusiasm and initiative of students, and transform the shallow learning in the traditional classroom with knowledge point transmission into deep learning, so as to obtain better teaching results. The traditional offline teaching, students will also master relevant knowledge through pre-class preparation, in-class study and after-class review, but the learning content of the three links is the same. Before class, students need to browse the learning contents so that they can keep up with the teacher's teaching ideas and teaching progress, the teacher will explain the knowledge points in detail, and only review the same content after class to consolidate and deepen the impression. However, the blended learning model can effectively combine these three parts. The teachers will carefully design the teaching before the class, students will learn online and master the basic knowledge. In the classroom, the students will answer questions, discuss and
communicate, and the teachers will explain the key knowledge in depth. After the class, the teaching effect is tested and evaluated. The three parts are not simple repetitions, but complementary relationships, with a view to improving learning effects through complementarity. Therefore, blended teaching is not simply the use of several teaching modes. It includes the mixture of "traditional classroom" and "digital resources", the mixture of "teaching" and "learning" in teaching objectives and learning objectives, the mixture of "knowledge acquisition" and "effect test", and the mixture of "theoretical learning" and "work practice". If the mixture is too simple, the meaning of blended learning is lost, and the ideal teaching effect cannot be achieved. If the mixture is too complex, it is difficult to promote teaching activities. Blended learning should focus on teaching objectives, design teaching links, continuously deepen, and advance step by step.

2. THE NECESSITY OF PROMOTING BLENDED LEARNING

With the rapid development of information technology and the widespread application of the sharing economy in the field of education, the online courses represented by MOOC are gradually popularized, and high-quality educational resources are no longer scarce. As the main students of learning, mobile phones have become their learning life. An important part of the unavailable part, the way in which knowledge and information are acquired has also undergone profound changes. The traditional one-way knowledge transfer can no longer meet the growing demand for knowledge from students. Blended learning provides a possible solution. Blended learning combines the advantages of classroom teaching and digital teaching. It has been transformed from traditional single knowledge transfer to multi-channel knowledge acquisition and interactive discussion and exchange to achieve the best teaching effect.

2.1 Disadvantages of the traditional teaching model

2.1.1 The traditional teaching model ignores the student's dominant position

Under the traditional teaching model, the teacher, as the leading class, teach the knowledge through inculcating teaching methods, neglecting the dominant position of the students, resulting in the students receiving knowledge unidirectionally in the classroom, learning is very passive, and learning lacks initiative and enthusiasm, the teaching effect is not good. The heuristic teaching, enquiry teaching, discussion teaching, and participatory teaching are also currently advocated, which reflects the urgent desire for education and teaching reform, colleges and universities are also actively trying out "micro-classes", "flip class" and "experiential teaching" to improve the quality of teaching, however, limited by the classroom time and the limitations of teachers' use of new methods, some teaching forms still stay in the "shallow learning" in which the form and content are reversed, and the means and purpose are reversed.

2.1.2 The traditional teaching content lacks pertinence and effectiveness

In the traditional classroom teaching mode, due to the limitation of the teaching place and time, teachers need to teach the relevant knowledge points in the limited classroom time, leaving very little time for students to discuss and analyze. In addition, with the popularity of the Internet, students Relevant information can be obtained through more and more channels. Teachers cannot effectively grasp the knowledge level of students, resulting in the lack of targeted teaching and the inability to effectively improve the quality of course teaching.

2.1.3 The traditional examination method is unscientific

Under the traditional teaching mode, the course assessment method is relatively simple. The test of students' learning results is generally through the final exam. Under the traditional course teaching mode, students have fewer opportunities for self-expression and usually have a lower score. This way of scoring a test is too simple, and there is a gap between the assessment of complex capabilities such as challenge and innovation.
2.2 Advantages of blended learning model

In this paper, two classes of blended learning are selected from the teaching classes of marketing in our university. The basic situation of blended learning is evaluated and investigated from six dimensions: teaching objectives, teaching links, online platform, classroom teaching, course assessment and overall satisfaction. The indicators (table 1) and survey data (table 2) are as follows.

| TABLE 1 THE INDICATOR SYSTEM OF BLENDED LEARNING |
|-----------------------------------------------|
| **Level 1 Indicators** | **Level 2 Indicators** |
| Teaching Objectives | 1.1 Teaching objectives are clear and specific |
| | 1.2 The "Trinity" of Knowledge Transfer, Competence Training and Quality Education |
| | 1.3 Ability to improve self-learning and ability to work together |
| Teaching Links | 2.1 Designing teaching links around teaching objectives |
| | 2.2 Effective integration of all links on line, offline, pre-class, in-class and after class |
| | 2.3 Progressive teaching content can effectively improve students' practical ability and innovation ability |
| Online Platform | 3.1 Teachers can provide online learning resources (video, audio, PPT, case, etc.) that are closely related to offline courses |
| | 3.2 Resource-rich and expanding learning resources for high-quality courses, test questions, assignments (works) sets, cases, etc. |
| | 3.3 Online learning requirements are clear, can guide students to effective online learning, feedback, etc. |
| | 3.4 Timely answers to students' problems, timely evaluation and feedback on students' online learning |
| Classroom Teaching | 4.1 Be able to effectively connect with online teaching and arrange the content of the course in a targeted manner |
| | 4.2 Teaching clear ideas and clear focus |
| | 4.3 Effective application of modern information technology |
| | 4.4 Reflects the status of the student's subject, pays attention to the interaction between teachers and students, the interaction between students and students |
| | 4.5 Use inspiration and discussion to guide students to think deeply |
| Course Assessment | 5.1 Combining procedural assessment with final assessment |
| | 5.2 Combining student self-test, student mutual evaluation and teacher assessment |
| | 5.2 Use of the relevant data analysis of online teaching platform to analyze students' learning behavior and timely feedback |
| Satisfaction | 6.1 Significant improvement in teaching results |
| | 6.2 High frequency of teaching interaction and good effect |
| | 6.3 Fair and perfect learning evaluation system |
| | 6.4 Learning environment is conducive to improving learning results |

| TABLE 2 SURVEY RESULTS OF BLENDED LEARNING |
|---------------------------------------------|
| **Level 2 Indicators** | **Recognition** |
| 5 | 4 | 3 | 2 | 1 |
| 1.1 | 29.03% | 43.01% | 22.58% | 5.38% | 0.00% | 4.06 |
| 1.2 | 16.13% | 31.18% | 35.48% | 12.90% | 4.30% | 3.68 |
| 1.3 | 40.86% | 34.41% | 21.51% | 3.23% | 0.00% | 4.19 |
| 2.1 | 25.81% | 25.81% | 41.94% | 4.30% | 2.15% | 3.77 |
| 2.2 | 31.18% | 30.11% | 30.11% | 5.38% | 3.23% | 3.91 |
It can be seen from the survey results that after the implementation of blended learning, students are still satisfied with the teaching effect. Students generally believe that the teaching objectives under the blended learning mode are more clear, online learning can be guided by teachers, and the classroom teaching ideas are more clear. The focus is relatively clear, and the classroom interaction frequency is high and the effect is good. The highest degree of recognition is the examination method (mean 4.35). It is believed that the limitation of one test score is broken, and the process assessment is strengthened. Secondly, the degree of recognition that can effectively improve autonomous learning ability and unity and collaboration ability is also relatively high (mean 4.19). The relatively low recognition is mainly due to the failure to effectively apply modern information technology (mean 3.26) in classroom teaching. In addition to resources closely related to teaching, other high-quality courses, homework collections, cases and other expanding learning resources are not rich enough (mean 3.55), the main reason for the inquiry is that the course has initially implemented blended learning, and the extracurricular expansion resources have not been uploaded and updated in time. Although classroom teaching has increased teacher-student interaction and student-student interaction frequency, it is basically a group discussion or exchange case deduction, there are fewer modern information technologies and teaching software applications that contemporary college students prefer and are more acceptable. In addition, the hardware and software environment for online course development needs to be improved.

In the “internet+” era, neither the traditional classroom teaching mode nor the pure online teaching mode can better meet the needs of talent training in colleges and universities. Blended learning combines the advantages of online teaching and traditional classroom teaching, teaching is no longer limited by time and space, teaching flexibility is stronger. This teaching mode is conducive to the realization of mobile teaching, leading students from shallow learning to deep learning, and fulfilling the requirements of the “trinity” training goal of knowledge, ability, and quality, which is an important practical trend of higher education informatization. Through the practice of the course, we can see that the blended learning model has better teaching effect than the traditional learning. This is not only motivates teachers to use advanced teaching concepts to improve teaching efficiency and teaching quality, but more importantly, it promotes students to experience the fun of personalized learning.
2.2.1 Blended learning is conducive to improving students' autonomous learning

The adoption of mobile internet technology has increased the flexibility of the teaching process. In the blended learning mode, students can complete the basic knowledge and theoretical learning through online teaching resources shared by teachers. According to the requirements of learning tasks and self-test, students can better understand their own learning situation. When they encounter problems they don't understand, they can find the teacher online to solve them or solve them through the Q&A session in the offline classroom. Students can carry out "mobile" and "fragmented" learning according to their own learning habits, and adjust learning methods and learning time according to the learning effect. They can repeatedly study knowledge points that are difficult to understand, making the learning process more flexible and convenient.

2.2.2 Blended learning content is more targeted

At present, the goal of personnel training in colleges and universities has gradually shifted from a single knowledge transfer to the “trinity” of knowledge transfer, ability training and quality education. The teacher's main position in the traditional classroom has also changed. Teaching is student-centered, and the teacher has gradually become a guide and a motivator in the learning process of students. Under the blended learning mode, the learning time of students is not limited to the 45 minutes of the classroom, the three stages of pre-class, classroom and after-class are integrated into one, which effectively extends the learning time. At the same time, the teacher can make full use of the tools in the era of mobile internet to understand and master the learning status of students through the online platform's learning and self-testing conditions, so that students can learn the knowledge points before class and focus on the questions that students doubt. In terms of lectures, the effective integration of the three links before, during, and after the class is truly achieved, the content of the lecture is more targeted, and the classroom teaching is more efficient.

2.2.3 Blended learning evaluation is more scientific

Blended learning effectively expands the learning time, and also broadens the learning content, giving students more opportunities for independent study and self-expression, and their evaluation is more comprehensive and scientific. The teacher can evaluate the effect of pre-class learning based on students’ online learning feedback. The effect of classroom learning can be evaluated based on students’ interactive communication and results display. The effect of mastering after class can be based on student unit testing, mid-term exam, final exam, and practice. The assessment of project completion status and other methods. The evaluation of blended learning includes not only self-evaluation based on online testing, but also others evaluation of results display and interactive discussion, both process evaluations such as unit tests and mid-term exams, and final evaluations such as final exams, both for mastering students. The appraisal and evaluation of the theoretical knowledge also has the appraisal and evaluation of the students' applied practical ability. Compared with the simple assessment model of traditional teaching-testing, the evaluation of blended learning is more comprehensive, systematic and scientific.

3. THE IMPLEMENTATION PATH OF BLENDED LEARNING

The implementation of blended learning is a systematic project, which needs to start from the determination of teaching objectives, the design of teaching links, the construction of online platforms, the guidance of classroom teaching, and the evaluation of teaching effects. Four aspects of consolidation and expansion, assessment and effect evaluation after class.

3.1 Before class: Online resource learning, preliminary knowledge

First of all, teachers should clarify the teaching objectives, because only by accurately positioning the teaching objectives can appropriate teaching plans be formulated accordingly, and better teaching results can be obtained. The determination of teaching objectives needs to be determined according to the professional training objectives and the social knowledge and skill requirements that students need
to master in this course. After the teaching goal is determined, the design of the teaching link is the key to whether the teaching effect can be achieved. The teacher needs to analyze the relevant factors, determine the teaching content around the teaching goal, design the specific teaching link, select the appropriate teaching method, and determine the appropriate teaching organization form. Next, the teacher needs to choose a suitable online platform and upload learning resources. According to the different content of this lesson, online learning resources are also different. Teaching resources can include the key and difficult points of this lesson, preview task list, courseware, video, audio, case resources and related web links, etc. The teacher can either record video courses by himself or use existing high-quality online courses resources (such as MOOC, SPOC, Micro-classes, etc.). Students are required to study online and give feedback on the questions or problems found during the learning process. The teacher adjusts the teaching design again according to the feedback from the students, prepares the lesson again, and prepares for the classroom teaching.

3.2 Classroom teaching: Teacher-student interactive discussion, in-depth grasp of content
With the understanding of students' learning before class, the teacher will have clearer goals when organizing classroom teaching. The teacher can use the form of mind maps to help students quickly sort out the knowledge points and vein structure of this section, and focus on the contents that should be explained in class according to the feedback results. For theoretical knowledge points, the teacher should ask more heuristic and innovative questions to guide students to think deeply. The teacher can also use "rain classroom" and other teaching tools to push questions to students in real time. Students answer or send bullets on mobile phones. The teacher can also use anonymous online discussion method, because some studies have found that this method can reduce students’ stress and fear, and increase students’ participation. It is an effective blended learning strategy. For the content of case deduction, the teacher should make full use of various relevant materials, create interesting teaching scenes, guide students to actively participate in and actively discuss, and can use project-based teaching (PBL) strategies to encourage students to complete learning activities and meaning more effectively construction. Regarding the content of the research report and plan design, students should be organized in reasonable groups, united and coordinated, and the results of each group should be displayed and shared in the form of a report and demonstration.

3.3 After class: Summarize and summarize feedback to achieve consolidation and expansion
After class teaching, it is mainly to summarize and evaluate the content of this section, and to expand and consolidate relevant knowledge. Students complete relevant tests online, the teacher should evaluate and feedback the students' test situation, summarize and sublime the teaching knowledge points in this section and push them to the students, let the students reflect on this, and clearly need to review and consolidate the content. The teacher can also stratify and push different expansion training tasks according to students' evaluation results, guide students to analyze and solve problems seriously, further broaden the knowledge dimension, and improve students' practical ability and innovation ability.

3.4 Course ending: Course Assessment and Teaching Effect Evaluation
At the end of the course, the teacher should evaluate the teaching situation of the course. The assessment of the course should be comprehensive and three-dimensional, combining the process assessment with the final assessment, combining the online self-test results with the evaluation of others in the classroom, and combining the assessment of the students’ theoretical knowledge mastery with the practical achievement evaluation of the students’ project completion, etc. It is necessary to record the whole learning process of students dynamically. For the teaching effect, in addition to timely adjustment of teaching methods based on student feedback during the teaching process, after the course, the teacher should also reflect on the teaching process as a whole and evaluate the teaching effect. For teaching opinions and evaluation of teaching effects, the teacher can review the entire teaching process based on the teaching platform records and conduct targeted analysis and
self-evaluation. At the same time, the teacher can obtain the suggestions of other teachers through “teacher mutual evaluation”. The above suggestions make the future teaching reform more targeted.

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