Research on Blended Learning Activity and Application

Yanqing Wang[1(✉)], Guanglu Sun[2], and Hui Shi[3]

[1] Key Laboratory of Trusted Cloud Computing and Big Data Analysis,
School of Information Engineering, Nanjing Xiaozhuang University,
Nanjing 211171, China
`wyq0325@l26.com`
[2] School of Computer Science and Technology,
Harbin University of Science and Technology, Harbin 150080, China
[3] Henan Electric Power Transmission & Transformation Engineering Company,
Zhengzhou, Henan, China

Abstract. With the rapid development of information age, it produces a series of new ideas, new methods, new technology and new means. These appearance promote the reform of education to new steps. Modern education activities gradually emphasize autonomy, personalized and diversified. The role of the teacher also taught by a single person into the organizers of the learning resources, the designers of the learning process and learning behavior to guide and estimate learning results. In order to adapt to the modern education to cultivate talents for the target demand, educators are trying to seek a new way of teaching to adapt to the social development.

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Online learning

1 The Widely Application on Blended Learning

The rapid development of information technology has greatly changed our life, especially the way we work, earn and entertainment. At the same time, blended learning has been widely used in education. E-learning, what we usually refer to as online learning or network learning, mainly refers to a new way of learning which through the computer network. Compared with the traditional learning, blended learning has many advantages, such as providing a wealth of network resources and multimedia learning resources which break the limitations of time and space. Also, blended learning enables independent learning to become a reality. What's more, blended learning changes the traditional teaching relationship between teachers and students. Students play the dominant position which is good at achieving their personalized learning. In view of the above advantages, blended learning has swept the world since the end of the last century. Some scholars even proposed that blended learning will replace traditional classroom learning. Although it has been found through practice that blended learning can not completely replace the traditional classroom teaching, it will greatly change the purpose and function of classroom teaching. With the rapid development of education information, people begin to

reflect on blended learning and think that both traditional classroom teaching and blended learning have their own advantages. As a result, blended learning is widely recognized. It combines the advantages of online learning and traditional classroom learning while it makes up for the shortcomings of both. Its goal is to provide students with better conditions to improve students' information literacy and comprehensive quality and ability. Cooperates and online education institutes have also begun to adopt a hybrid learning approach to training and education [1–3].

2 The Basic Theory of Blended Learning

2.1 The Connotation of Blended Learning

Professor HE Ke-kang from Beijing Normal University introduced blended learning for the first time at the 7th Conference on Global Chinese Computer Education Applications in Nanjing. Professor He Ke kang believes that the blended learning is to combine the advantages of traditional learning methods with the advantages of e-learning. That is to say that it is necessary for teachers to play the leading role in guiding, enlightening and monitoring the teaching process. In the meanwhile, blended learning needs students show their initiative, enthusiasm and creativity on study. At present, the consensus of the international educational technology community is that only by combining the both strengths, can achieve the best learning effect.

However, many people consider the hybrid learning mode as the combination of traditional classroom teaching and online teaching. Such simple one plus one mode probably is only a description of the surface features. Singh & Reed, a foreign scholar, suggests that blended learning is achieved at the "appropriate" time by "appropriate" learning techniques and "appropriate" learning styles, delivering "appropriate" abilities to "appropriate" learners to optimize the learning effect.

2.2 The Fundamental of Blended Learning

The basic principle of blended learning is to improve and enhance learning through "optimization" that may be found. To understand the basic principles of blended learning. It is a must to understand what is learning first. There are two kinds of learning: one is "shallow learning", characterized by memory; the other is "deep learning", its characteristics is to grasp the new knowledge, that is, to understand and verify the existing knowledge of the fit, and then integrate knowledge into the existing knowledge structure. Shallow learning only focuses on the memory of information, which can only be a kind of inefficient learning. Deep learning, on the other hand, contains the learner's comprehension process and is a problem-solving learning. Clearly, blended learning expectations can help deep learning.

Therefore, as argues, the rationale for blended learning, is that blended learning is a combination of Web-based technologies such as virtual classroom live, collaborative learning and streaming media in order to implement a teaching goal; It is the combination of various teaching methods (such as constructivism, behaviorism and cognitivism) and teaching techniques (or non-teaching techniques) to achieve the best

teaching results. In other words, blended learning is like a kind of optimal fusion, emphasizing on the teaching elements (teachers, students, teaching content, media) through organic integration of mutual interaction between the teaching methods in order to achieve specific teaching objectives [4–6].

2.3   The Components of Blended Learning

Blended learning includes two parts: face-to-face teaching and online learning. These two parts are not single. Teachers should combine the two parts effectively in practical teaching. Clark divided the blended learning into two parts: offline learning and online learning. Based on this, I made a few minor changes and added the virtual learning environment to online learning as shown in Fig. 1.
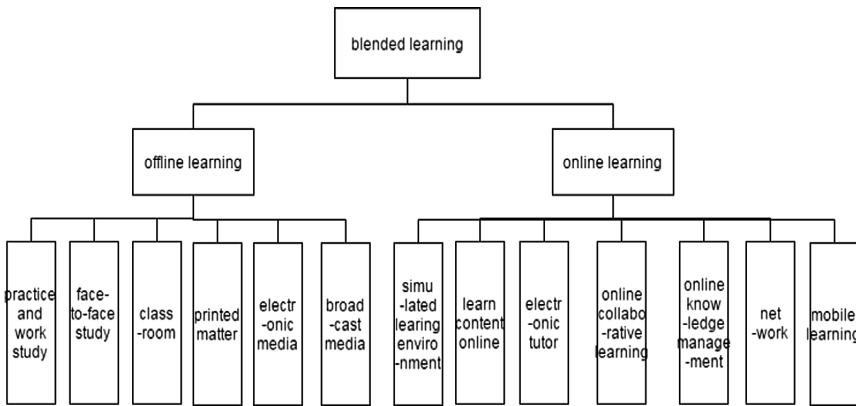

Fig. 1. The virtual learning environment to online learning

3   Learning Evaluation Design

As blended learning integrates a variety of teaching (learning) activities, its diversity and complexity make the learning process more specific and meticulous, then the evaluation for it is even more important. For the various learning forms in blended learning, there are some limitations in the traditional teaching evaluation and network evaluation methods, which requires the integration of teaching evaluation based on blended learning.

The methods of evaluation include the following. Firstly, blended learning file evaluation has a tracking record of the learning process. Students in the system platform for all activities will be recorded in detail. The record of these learning processes is equivalent to an electronic file, as a new evaluation for student learning. Secondly, formation evaluation and summary evaluation. While the test mode of traditional course simply uses paper, the final grade of the course is decided by the usual participation calculated by the system, the experimental results and the final examination results which according to the proportion of 4:3:3. Thirdly, the combination of

self-assessment and peer-review enable students to fully understand their own strengths and weaknesses in order to develop their own self-awareness while peer review allows students to find their own advantages and disadvantages of learning. In this course, there was a heated discussion in "The Sense of Excellent Work" in the discussion area of "Sense of Homework". Many students are deeply touched. And through the observation and study of excellent homework, these students have realized the gap between themselves and others, and then, they find the direction of ascension. Fourthly, that is personal evaluation and team evaluation. The evaluation of individuals in group collaborative learning tasks depends not only on the group's performance, but also on the individual's contribution to the group activity and the evaluation of the group members. In fact, evaluation activities are also a part of learning activities, which embodies the teaching concept of centering on learners.

4　Feedback

Feedback is the final stage of curriculum design framework of the blended learning. we must be soberly aware that blended learning curriculum design is an open and dynamic process. The various elements such as teacher, student, information, media, the environment and so on are changing. Therefore, after the end of the course design, we must summarize the course as a whole and form a summary report about the feedback on each stage before so that the course can be modified in time.

5　Problems and Deficiencies

The advent of blended learning undoubtedly diversifies people's learning styles and changes the teaching forms in every corner of the world. This way of learning is achieved through the "mixing" and "integration" of other learning styles. It offers the possibility of superiority and distinctiveness over other single learning styles because it can combine different elements during study. Through a semester of follow-up surveys and interviews, I found that there are still some problems in the blended teaching process.

First of all, online learning has many external disturbances which is much easier to be disturbed by the outside world. Students with poor self-control may not be able to withstand the influence of external networks. Most students are in the state of shallow learning rather than deep learning.

Second, the evaluation method is challenged. The evaluation methods of blended learning are diversified, among which e-file is the core evaluation method. However, through deep interviews, it was found that some of the students appeared the problem of grandstanding. In order to cope with the teachers, these students formally login to the platform, they did not integrate into the designed activities and just used the platform for downloading resources. What's more, some students will log into two accounts at once to help other students finish their homework. At present, the evaluation methods of electronic files are subject to some challenges. How to ensure the quality and fairness of evaluation methods is a serious question which is worth thinking.

Finally, online learning is not well attended. Reasons are also very complex. For example, learners have a sense of loneliness online or lack of information literacy or did not develop online learning habits. Students' online engagement has become one of the most important factors affecting online learning. Although there are some deficiencies in the blended learning model, these deficiencies are both common. Through traditional teaching, these deficiencies can be remedied and this model will be more optimized and systematic.

6   Suggestions and Improvements-Three Modules in Teaching

The learning process can be divided into three modules according to the teaching process: Pre-class to guide and study, While - class to explain the discussion and Post - class to tutor. Now take the lesson called "Disasters" in the new version of college English listening and speaking course as an example to show how to embody the concept of mixed teaching in English listening teaching.

6.1   Pre-class Teaching

During the Pre - class process, the teacher determines the teaching plan according to the syllabus, puts forward a clear guide program and provides various media resources. Under the guidance of the teacher, the students carry out the autonomous learning under the network environment of autonomous learning center.

In Pre - class guidance stage, teachers can ask students to preview the text, grasp the new words and phrases and get to know the subject of the text. To enable students to understand the meaning of the text more deeply, teachers can choose some suitable listening comprehension website for students to supplement the contents of the class, such as listening and speaking materials site like "Randall's online ESL listening laboratory". The listening materials provided by this site range from easy to difficult, and some have video recordings. The English - to - go website offers free news reading. This site is novel in material and covers a wide range of areas. The arrangement of practicing is very scientific. There are also many activities associated with the text which is suitable for self-study.

In addition, the teacher can design some questions on Pre - class modules for text content, such as: what are natural disasters? And what are man - made disasters? What damage can they cause? How can we reduce the damage caused by such natural disasters as Tornado and tsunami? What can we do to prevent man - made disasters? Teachers can distribute these questions to students via Blog, BBS or e-mail and ask them to answer the questions after they have studied. During the course of preview, if students encounter difficulties, they can communicate with teachers through Blog, BBS or e-mail. For non-difficult questions, teachers should mainly adopt the method of instruction and guidance. For example, teachers can group the keywords or questions related to the text sections into several groups and post them on the blog. Each student can post their own answers on the blog. Then, the difficult content or the common problems will be as the focus of while - class teaching to be explained by teachers.

6.2   While-Class Teaching

While - class teaching has fully demonstrated that "teaching" is serving students' "learning". Teachers are no longer to listen to the answer first, but adopt individualized teaching methods. Through a variety of teaching methods, teachers solve the problem of students in listening comprehension of the language which can not be understood. Students are no longer blind, passive, but listening to the teacher with questions. If the student still has questions after the teacher explains the question already, or when some questions are raised, the teacher can help the students to seek the correct answer by the way of group discussion and other forms.

After the language barrier having been basically eliminated, on the basis of students understanding the content of the text generally, students can watch relevant films and video materials to enhance their understanding. When students watching the movie, they are not only asked to pay attention to the language of the characters used by the actors, but also pay attention to the actors' body language. After watching, the teacher asked the student to summarize the unit in a study group and ask the group representative to make a report in class. At the same time, teachers can open a time column in the classroom for listening strategy training.

6.3   Post-class Teaching

Post - class teaching session is an indispensable and important part of the teaching process. It is the continuation and extension of classroom teaching. Q & A after class is a feedback on learner's learning level and learning effect. It is helpful for teachers to adjust the teaching content timely according to the actual situation and instruct teachers to arrange the next part of teaching activities. After the end of the two courses above, if students still have questions on the language phenomenon or the text of the lesson, they can conduct interactive learning online and participate in the discussion, then find the answer. Also, they can seek help from the teachers through a variety of media means. For example, the Chat-room, E-Mail BBS and so on. Then the teachers targeted specific questions to answer. For the universal problems, teachers can published the answers in the Blog or BBS, or as the context of the next lesson, then give the guidance.

7   Conclusion

After theoretical research and practical exploration, we can conclude that the blended learning in the virtual learning environment has been fully affirmed by teachers and students in our teaching practice. In blended learning, the enthusiasm and initiative of students have been mobilized to the maximum extent. Students' abilities of applying information technology to analyze and comprehensively solve the problem have greatly improved. In short, from the traditional classroom teaching to online teaching and then to "blended learning" teaching, it is not a simple application of information technology and a simple change of teaching forms, but a change of teaching philosophy and teaching mode. Its purpose is to apply information technology more effectively in teaching so as to enhance students' learning ability and optimize the education and teaching process.

Combining the background of education information and the education system with Chinese characteristics, the design of blended learning curriculum has great advantages in the teaching reform in colleges and universities. However, how to carry out the blended learning better under the circumstances of virtual learning in colleges and universities needs us to work together to explore a better way.

References

1. Li, K.-D., Zhao, J.-H.: Blended learning theory and application mode. Electrochem. Educ. (07) (2014)
2. Qi, Z., Wang, Q.: Blended learning to our country college teachers challenge. Electrochem. Educ. Res. (07) (2015)
3. Meng, Q.S., Liu, X., Wu, Y.: Constructivism learning theory and mixed learning. Softw. Guide (Educ. Technol.) (08) (2016)
4. Zhan, Z., Li, X.: China electrochemical education. Blended learning: definition, strategy, status quo and development trend - dialogue with professor curtis bunker. Indiana University (12) (2009)
5. Huang, R., Martin, Zheng, L., Zhang, H.: Electrical education research. Curric. Des. Theory Based Hybrid Learn. (01) (2017)
6. Zhang, S.: Theory and practice of formative assessment based on learning activities in a mixed learning environment. Northeast Normal University (2008)