

Research on Blended Learning Based on Rain Classroom and DingTalk Live Broadcast under the BOPPPS Model

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Abstract: The development and progress of the society has brought about in-depth changes in the education industry. The current education model pays more attention to people-oriented and modernization, aiming to provide students with a more convenient and higher-quality education curriculum system and promote the all-round development of students. With the large-scale promotion and application of Internet technology, the way people receive knowledge and information has undergone earth-shaking changes. The traditional offline classroom model is limited by venue and time, and cannot provide students with teaching services anytime and anywhere. The epidemic of COVID-19 has also promoted the online distance teaching model, and online teaching platforms such as Rain Classroom and live broadcast of DingTalk have been widely used in teaching practice at this stage. Among them, the BOPPPS model, as a systematic and scientific teaching design mode, can be combined with the online teaching platform to bring new changes to the education system. This paper analyzes online Blended Learning under the BOPPPS model, and proposes a specific plan for teaching.

Keywords: BOPPPS model; Rain Classroom; live broadcast of DingTalk; online teaching; Blended Learning

1. Introduction

The large-scale spread of the epidemic of COVID-19 has seriously disrupted people's daily life and brought many challenges to people's work and study. In response to the call of "classes suspended but learning continues", online learning (online live lesson of DingTalk) has become the mainstream method of school teaching in the short term. Changes in teaching methods and teaching means will inevitably bring some new difficulties in the teaching process. Since *Practical English* is a public foreign language course, involving a large number of classes and students, the live broadcast of DingTalk adopts the form of class simulcast, and some problems appear during the live broadcast. For example, teachers and students cannot communicate face to face like the traditional classroom mode, and it is also difficult for students to focus on learning quickly in online mode, as a result, teacher-student interaction is limited and teaching pace slows down. In order to solve these problems, Rain Classroom is used to make up for the shortcomings of live classes, and to strengthen knowledge learning and online interaction before and after class^[1]. At the same time, the BOPPPS teaching model was introduced into the online teaching design of the course to refine teaching implementation procedures, ensuring the effective connection and implementation of teaching links and establishing a bridge between the professional theoretical knowledge and the practice of daily life. Using various means of information technology makes the teaching situation richer and more diverse.

The BOPPPS model is a teaching model originated in North America. Its main structural design is based on constructivism and the theory of communicative method, and the teaching model structure has strong practicality. The BOPPPS model consists of six teaching stages, followed by introduction, learning objectives, pre-test, participatory learning, post-test and summary. There is a clear logical sequence relationship between each part, which can effectively improve teaching efficiency^[2]. Introduction refers to that, teachers design flexible and diverse classroom import methods, attract students' attention, and let students have a sense of intimacy and identification with the learning content of the model. Learning objectives can help students recognize and master the key points of a lesson, and build the personalization of knowledge. In the pre-test, students complete the test issued by the teacher, and the teacher provides appropriate support and help for the students through intervention and guidance. The above three procedures can be completed with the help of Rain Classroom. In the

procedure of participatory learning, teachers explain language points and add interactive exercises in the live broadcast of DingTalk, so that students can actively participate in class teaching. Post-test and summary include comprehensive assessment and evaluation of students' learning results, which can judge students' mastery of the content and practical application ability^[1]. As shown in Figure 1:

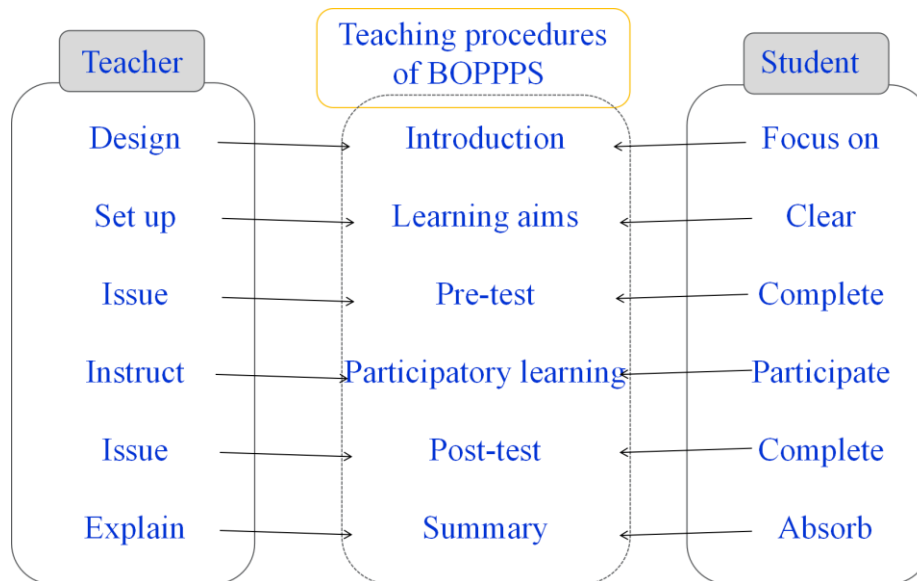


Figure 1: The diagram of BOPPPS teaching model

2. Teaching analysis

2.1. The analysis of target students

The target students of this course is non-English majors in adult associate colleges, mainly including students majoring in e-commerce, computer, electromechanical, accounting, etc. The source of students is complex, and they basically come from our secondary vocational colleges or other vocational high schools, showing the following characteristics: First, the learning foundation is weak, especially their English level is uneven, and even some students can only get a score of 20 to 30 in the test of English. They admit that they have given up English learning since junior high school and cannot gain a sense of achievement in their studies; Second, students are relatively unfamiliar with the English language perception, have not cultivated strong emotions, have difficulty finding points of interest in the classroom, cannot improve concentration in class, and cannot actively participate in classroom teaching due to lack of interactive guidance. The main learning characteristics of students at this stage are as follows: one is the loss of interest in learning, which results in a feeling of weariness; second is the main driving force of efforts; third is the main driving force of the target task. Teachers should implement targeted teaching strategies in combination with the learning characteristics of different students in the teaching process.^[3] For adult students in junior colleges, their personality is relatively strong, and they lack a certain degree of concentration in learning, without good study habits and poor self-driven ability. However, adult students have strong tolerance and acceptance of new things and phenomena, and they are easily attracted by the teaching methods which are diverse, flexible, interesting and unique, thereby their interests in learning are developed.

2.2. The analysis of curriculum orientation and goals

Practical English is an elective course for adult education associate colleges. The orientation of this course is to enable students to have certain listening, speaking, reading, writing and translation abilities on the basis of the school's professional training plans and in combination with the actual English level of students. And they are able to use English proficiently and fluently for basic communication in daily practice, and able to read and understand practical articles such as practical texts, serving the talent training goals of various majors; at the same time, students can have a sense of intimacy and identity with the English language. The course can provide students with interest-driven and goal-driven to learn English by themselves, make students believe in their own abilities and potential, improve their learning efficiency through good study habits, establish a sense of team communication and win-win

cooperation, and understand western cultures in English learning, broaden knowledge and cultural horizons, establish positive values, solve problems of further education and employment, and maintain lifelong learning and continuous progress in future study, work and life.

The course is based on the premise of "application as the purpose, practicality as the priority, and sufficient as the degree", taking into account the learning needs of students' independent learning, individualized learning and the use of modern information technology. In addition to the knowledge of textbooks for middle school English courses, the course expands more basic English vocabulary and grammar knowledge for students, so that students can effectively master basic English skills, and be able to flexibly apply English to daily communication and practical reading and writing. And special practical English training is carried out, so that students can find their favorite jobs and smoothly enter the society. Through practical English training, students can show their English advantages in the occupational positions they are applying for, can use English for basic listening, speaking and communication, understand the concepts and meanings of English technical materials, and master the writing framework of English practical texts to complete writing tasks; At the same time, students can get professional qualities such as "self-learning ability, teamwork spirit, and cross-cultural awareness".

According to the analysis of target students and curriculum goals, it is necessary that a reasonable design of blended learning integrated with the BOPPPS model be carried out with the use of the online teaching which combines Rain Classroom and the live broadcast of DingTalk. It fully considered the characteristics of full-time adult students, which can not only effectively achieve the course teaching goals, but also provide convenient and mobile exclusive teaching services for students with different learning abilities and learning needs.

3. Teaching implementation process

3.1. Teaching process design

The BOPPPS model has three key elements: First, it emphasizes clear and attainable teaching goals; second, it is student-centered, emphasizing the active participation of students; third, it emphasizes timely feedback and reflection in the teaching process. In the online teaching mode guided by BOPPPS, there are six teaching links including introduction, learning objectives, pre-test, participatory learning, post-test, and summary, which effectively run through the three aspects of pre-class preview, live broadcast of DingTalk, and after-class expansion, optimizing the teaching process. In the teaching process, we can truly achieve clear teaching goals, focus on students and process evaluation, improve the efficiency of online teaching, and finally achieve the teaching goals of the course.

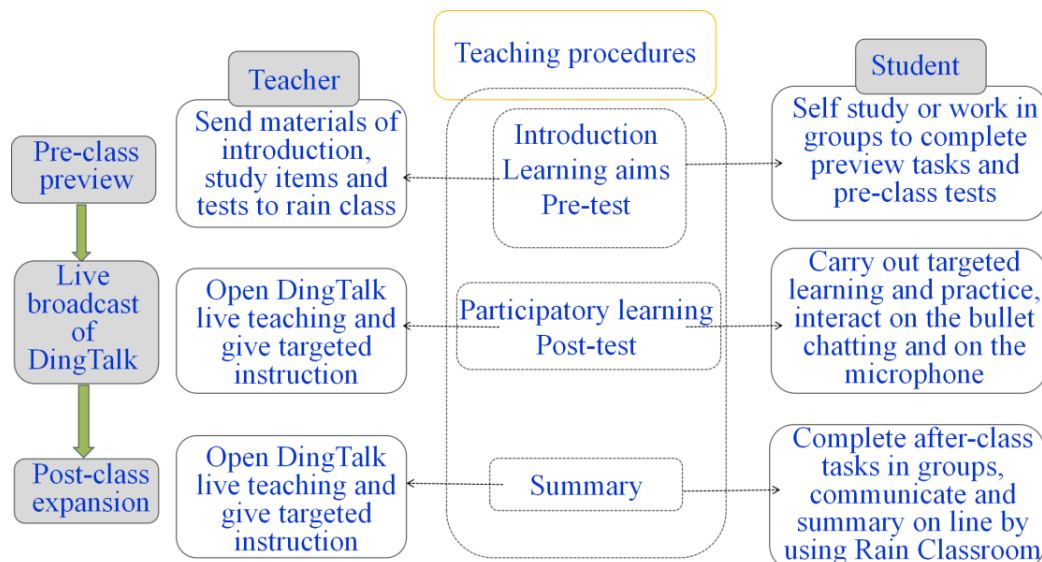


Figure 2: The online learning mode based on Rain Classroom and Dingding Live under the BOPPPS model

As shown in the figure, teachers can use the first three teaching links, relying on the Rain Classroom platform, to let students have a basic understanding of the teaching content, and carry out autonomous learning through interest-driven and task-driven learning. Among them, the procedure of

introduction can make students enter the teaching situation from the daily life situation, arousing students' interest in the learning content and keeping students focused; "learning goals" can clarify the key tasks of the live classroom; and "pre-test" can allow students to actively participate in listening to the teaching content in the process of thinking and summarizing, let students have a desire to learn and explore the teaching content, and conduct independent learning or group collaborative learning. These three procedures can prevent students from feeling estranged from the teaching content and guide students to enter the learning state. The procedure of "participatory learning" is mainly used in live classes of DingTalk to improve student participation and online interaction between teachers and students; post-test is an important component of teaching effect evaluation, teachers can use open assignments, group role-playing and other methods. It is conducive to improve students' autonomous learning ability and student-student interaction, and the procedure of summary can better achieve knowledge internalization and solidification by expanding tasks. Through such a learning process, students not only master the basic knowledge of English and practical oral communication skills, but also establish a sense of teamwork and cultivate good professional quality in the process of cooperating with classmates.

3.2. Implementation of blended learning

The use of the BOPPPS model is to serve the smooth implementation of the teaching process. On the basis of clarifying the basic learning objectives and learning tasks of different module units, teachers can use the model to improve the teaching process settings, and adopt specific teaching methods, such as situational teaching method, role-playing method, communicative teaching method, task-driven method, etc., to ensure the effective development of each teaching stage and procedure according to the teaching characteristics of each procedure.

3.2.1. Phase of pre-class preview

In order to solve the difficulty that students are hard to enter the learning state in online teaching, the procedures of introduction, learning objectives and pre-test in classroom teaching are inserted to the phase of pre-class preview, and the smart teaching tools of Rain Classroom are used to realize the original functions of the three procedures. Before class, according to the teaching objectives and content of the module, teachers contact the actual and current news of life, carefully prepare pictures, videos and other materials, and upload them to Rain Classroom to remind students to watch in time. Teachers can also use situational teaching method to introduce concrete and vivid information through pictures, videos, etc., so as to induce a certain emotional experience for students who are tired of learning, hard-working, and task-oriented, such as Unit 1 "Greeting", Unit 2 "Saying Thanks or Sorry", Unit 8 "Keep Fit, Not Fat", which contact the theme-related scenes at home and abroad after the epidemic: changes in greeting methods, gratitude to front-line medical staff, how to keep healthy during quarantine, etc. After students' attention is fully attracted, they are urged to combine current affairs to think about the knowledge points to be learned, clarify the learning objectives, and lay the foundation for the opening of DingTalk live class and the interaction between teachers and students.

In addition, considering the English level and emotional attitude of different types of students, the tests in the pre-test are set as objective questions or open-ended questions, such as the ways of greeting in the first unit, and expressing gratitude or apology in the second unit. The knowledge points seem not difficult, but the mastery of poor students is still not in place. The tests are set as multiple-choice questions, which can reduce the difficulty and increase the interest and participation of students who are tired of learning; asking for directions and guides in the third unit can provide open-ended questions, such as "Do you have no sense of direction? Tell me your story.", which leave room for diligent and task-oriented students to expand, encourage them to communicate and learn in the discussion area, and cultivate their autonomous learning and communication skills; teachers can also master students' learning situation, which is conducive to the targeted teaching of live classes.

3.2.2. Phase of live broadcast of DingTalk

The phase of live broadcast of DingTalk mainly involves participatory learning and post-testing. First of all, the first three procedures have laid a certain foundation. For example, through the test of multiple choice "How are you?" in Rain Classroom, it was found that many students only remembered "Fine, thank you! And you?" It is easy to make mistakes if it is changed into another way, and this fixed thinking mode greatly affects learning; the results of the objective test of the second unit "Saying thanks or sorry" show that students are prone to confuse the answering methods of thanks and apology. This kind of test feedback helps teachers to elicit ideas at the beginning of the live class, arouse

students' attention and experience on the topic, and then naturally enter the next learning procedure.

In the participatory learning session, teachers focus on the problems found before, identify the key and difficult points to teach and explain them in detail. At the same time, role-playing and communicative teaching methods can be used to further strengthen language practice, and guide students to link existing life experiences and adapt dialogues on the basis of textbook dialogues. For example, in the part of asking for directions and giving directions in the third unit, teachers can specify real-life scenarios, assuming that students are at the school gate, asking how to get to the central hospital, teachers and students or students and students are divided into AB roles, play the role of the person asking for directions and the person who guides the way, enter in the interactive panel or communicate with the microphone. This kind of short dialogue between one person and two sentences can be completed by different types of students. Students with weaker foundations can only play the role asking for directions or complete it according to the template, and students with higher skills can play the role giving directions or talk freely without notes. As a result, it can fully mobilize the enthusiasm of students at different levels, improve their interest and sense of achievement in learning English, and cultivate their communication skills and spirit of cooperation.

During the class, post-test exercises can be interspersed, and listening or translation exercises in the textbook can be used. If students are confused about the teaching content, they can edit their doubts at any time on the DingTalk interactive panel. Teachers answer students' doubts through the interactive panel or video, or grant voice permission to students, allowing students to ask questions easily and quickly through the microphone, enhancing teacher-student interaction and student-student interaction. In the interactive session of live broadcast of DingTalk, it was found that some students who are unwilling to communicate in class become willing to communicate with the teacher, and some students will bring up some more in-depth topics related to the theme, which are rarely seen in the normal face-to-face class. It is showed that on-line interaction provides students with more space and freedom, inspiring their expressive aspirations.

3.2.3. Phase of after-school expansion

The phase of after-school expansion mainly involves the procedure of summary, using the task-driven method to deepen the knowledge through the completion of tasks. For example, after learning the theme of the festival, on the basis of students' understanding of traditional Chinese and Western festivals, they are required to choose a festival to introduce in English. Students with poor writing skills can extract online materials, while those with good writing skills can complete it by themselves. After the live class of DingTalk, teachers assign tasks in the family-school contact of DingTalk, or publish micro-lecture and MOOC videos to Rain Classroom. And the videos are mainly from Tsinghua University's "Oral Communication for EFL Learners" and "Viewing, Listening and Speaking", as well as micro-lesson resources that are made by teachers themselves. Whether it is the family-school contact of DingTalk or Rain Classroom, teachers can set the completion time of the task. Teachers can remind students who have not completed the task by setting DING regularly, and they can also check if students watch videos in Rain Classroom. In the process of completing the task, if encountering difficulties, students can ask teachers and classmates for advice through DingTalk or Rain Classroom, achieve the purpose of summarizing and solidifying knowledge through tasks, gain a sense of accomplishment, so as to cultivate students' autonomous learning ability, and finally achieve learning goals.

4. Teaching evaluation

Under the online blended learning model, starting from the concern of students' growth, the evaluation of students' learning process should be emphasized, and the final learning results of students should not be the only evaluation criteria. In view of the particularity of online teaching, the evaluation of effective quantitative process is particularly important; and the BOPPPS model also emphasizes the subjectivity and importance of students, pays attention to allowing students to participate in the practice of teaching activities, and requires teachers to reflect on teaching activities through students' timely feedback. Therefore, the teaching evaluation of the course should be based on the aspects of students' learning process and learning results, which are mainly completed online. The procedural assessment is distributed in the entire online teaching process, including the autonomous learning before and after class, interactive communication and pre-test tests in Rain Classroom, as well as the classroom performance of live classes of DingTalk and homework assigned in the family-school contact of DingTalk; the final assessment is generated on the basis of the tests in Rain Classroom, which is

convenient to test the effectiveness of online learning, stimulate students' learning motivation, and improve their autonomous learning ability; teaching effect evaluation can truly reflect students' learning effect and emotional experience. Teachers can psychologically care and encourage students according to the "feedback principle", so that students can have a good learning experience and ultimately achieve better learning effects.

Table 1: Examining mode of course

Examining mode		Requirement	Score	Maximum	evaluation criteria	Assessor	Time of assessment
Procedural assessment 50%	Preview task of the unit and discuss in the area of interaction in Rain Classroom	8 times	2/time	16	Each task is scored according to statistical data in Rain Classroom	Teacher	Usually
	Online test	8 times	3/time	24	Scores given according to the tests of Rain Classroom		
	Performance in live class of DingTalk, online interaction	16 times	1/time	16	Teachers will give points according to classroom performance as appropriate		
	Rain Classroom or homework of family-school contact	8 times	5/time	40	Scores given according to the quality of each assignment		
	Mutual evaluation in groups	once	4/time	4	The group leader will grade according to the performance	Student	End of the term
Final assessment 50%	Final test	once	100	100	Complete the test of Rain Classroom, the results are subject to the platform statistic	Teacher	End of the term

5. Summary

Through the quantitative assessment of Rain Classroom and DingTalk during the learning process, the proportion of students who usually score 90 or above has reached 89.8%, and 98% are above 80. The effective learning process promotes good knowledge accumulation, and also improves the results of final assessment to a certain extent. 79.6% of the students scored 85 points and above while 95.9% of the students scored above 60 points. The excellent rate and pass rate of the course are guaranteed. In the follow-up teaching effect evaluation, students' good emotional experience also reflects their affirmation of the teaching mode. The vast majority of students think that they can adapt to this new teaching mode. In all aspects of teaching implementation, they make full use of the various functions of Rain Classroom and DingTalk, and use all information technology means that are conducive to improving teaching performance, such as the Internet, WeChat, MOOC video of Tsinghua University and other online course resources, which provide them with a ubiquitous learning and interactive learning environment. And mobile learning is truly realized, which greatly mobilizes students' enthusiasm for learning, improves their ability to learn independently, and promotes the occurrence of deep learning.

Practice shows that, the design of the online teaching process introduces the model of BOPPPS and is deeply integrated with online blended learning by using the six procedures of the model during the entire teaching process in Rain Classroom plus live broadcast of DingTalk. This not only optimizes the teaching structure and solves the difficulties of online teaching, but also applies various information technology means more reasonably and flexibly, which promotes the effective implementation of the online blended learning model and improves the online teaching performance. At the same time, the new model can reflect the latitude of students' learning, better expand students' learning horizons, stimulate students' self-driven force, and cultivate students' comprehensive ability and professional quality. Of course, in the process of teaching, some shortcomings of the new model were also found, for example, the breadth and depth of online interaction was not enough, and the self-learning process lacked more effective supervision, etc. These problems need to be further explored and solved in future

research.

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