

Consideration and Practice of Flipped Classroom Teaching Mode Based on “Rain Classroom”

—Taking “Intermediate Financial Accounting” as an Example

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Abstract—The development of information technology provided the possibility for the integration of modern education technology. This paper mainly analyzed the application of professional teaching software of rain classroom in flipped classroom teaching. Meanwhile, it explored the overall design and practice of flipped classroom in the teaching practice of intermediate financial accounting, to make an in-depth study on the difference between rain classroom and traditional teaching mode. Finally, it points out the need for improvement on the basis of summarizing the advantages of the flipped classroom.

Keywords—rain classroom; flipped classroom; teaching mode

I. INTRODUCTION

The rapid development of information technology has driven the profound reform of modern education technology. Some changes have taken place in teaching methods, teaching methods and teaching concepts. The effective combination of traditional classroom teaching and information technology has become an increasingly concerned issue in the field of education. In the education informatization 2.0 action plan put forward by the ministry of education in April 2018, it is proposed to basically realize “three complete, two high, one big, three changes, three new” in 2022, generally improve the application level of informatization and information literacy of teachers and students, and realize the comprehensive and deep integration of information technology and education.

II. THE CONNOTATION OF RAIN CLASSROOM

In 2016, the school online and Tsinghua university online education office, to develop a hybrid teaching tool of “rain classroom”, from the software technology is to traditional PPT joined a plug-in, and you can through the WeChat platform, the intelligent terminal for links between teachers and students, to give the lesson preparation before class - teaching - after class to review the new experience in three stages: (1) the preparation before class, teachers can advance the related video, voice, problem sets and courseware pushed to the students on the phone; (2) teaching in class: when learning new knowledge, students can express their opinions through the pop-up screen, or by real-time answering, random points, providing the best way for classroom interaction between teachers and students; (3) after-class review: push exercises

and answer questions to help teachers analyze the learning effect quantitatively and provide data for accurate teaching.

III. FLIPPED CLASSROOM TEACHING DESIGN BASED ON RAIN CLASSROOM

Flipped Classroom first appeared in 2007, and then rapidly expanded in 2011, which was praised by the globe and mail as an important technological change affecting classroom teaching. Flipped Classroom was first used in China in the practice of basic education in 2011. In 2013, the flipped classroom became a hot topic. Flipped Classroom mainly refers to both within and outside the classroom learning time to readjust, teachers will not occupy the class limited time to teach relevant information, while in class by the methods of collaboration, answering questions such as the form to meet students' personalized development, also known as “upside-down the classroom”, to subvert the traditional teaching mode, enrich the Internet online learning initiative, participatory and flexibility. The “Rain Classroom” born on the Internet and mobile environment provides new technical support for flipped classroom teaching activities.

A. Overall teaching design of flipped classroom

Intermediate financial accounting is the main course of an accounting major. The accounting major is offered in various financial and economic colleges and universities, which is widely representative. In traditional teaching, teachers explain and teach the monetary funds, receivables and prepayments, inventory, financial assets, fixed assets, intangible assets and other assets, current liabilities and long-term liabilities, owners' equity, revenue, expenses and profits, financial reports. The content is various, but because of the limitation of class expand and improve the training cannot be developed, and the project drive method has received the serious challenge. Therefore, on the basis of introducing the concept of the flipped classroom, this paper makes reform with the help of rain classroom teaching technology. To conceive flipped classroom teaching of intermediate financial accounting, it is necessary to clarify the teaching objectives and decompose the learning content of each chapter, students' independent learning and analysis of learning objects into three links before, during and after class according to the integrated teaching

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design idea. Design different teaching methods and methods according to different learning activities (see fig.1 for details).

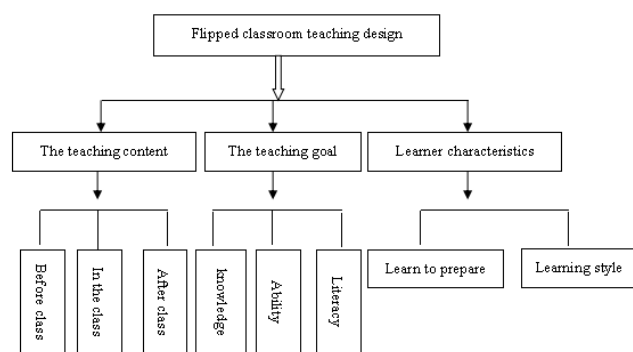


Fig. 1. Overall teaching design of flipped classroom

B. Flipped classroom teaching design of intermediate financial accounting

The teaching design of flipped classroom should be reorganized around the three steps of “pre-class guidance, in-class teaching and discussion, after-class problem solving and practice” to change the traditional mode of “classroom teaching and concentrated learning”. In the process of teaching in colleges and universities, college students often encounter lectures when some knowledge is very clear, but the one to do topics or applications, it can't not going to be able to cover everything, often in the emphasis on memorization of knowledge and ignore the master of the learning method. Flipped classroom is a process reengineering of classroom through new ideas and technologies, so as to truly achieve “teach to fish”.

1) Design and analysis of teaching content

As the reform direction and new teaching mode of higher education model, flipped classroom does not mean to completely replace the traditional classroom. Due to different disciplines, different characteristics of students and different teaching conditions, flipped classroom is only an effective supplement to the traditional classroom.

Preview before class. In this stage, we can design cases according to course chapters, record micro-course video, design-related links and self-test of main knowledge points. The teacher defines the teaching purpose of each chapter, and they select the knowledge points that students need to memorize as the recording content of video before class or the animation produced for release on the online teaching platform for students to download and learn. This is different from pure TV video or early distance education, Teachers should prepare self-test questions according to learning tasks and unit requirements after video. For example, there are a lot of memorization contents in “intermediate financial accounting”, especially in the general summary of the first chapter, there are not too many business operations and applications, but the four hypotheses, six elements and quality characteristics of accounting information are the basis for intermediate financial accounting learning in the future. In

traditional teaching, teachers often think this part has been in the “basic accounting” middle school, it need not spend too much time and energy. But the “basic accounting” and “intermediate financial accounting” learning mentality is a fundamental change. Basic accounting just needs to know what is the big four assumptions, intermediate financial accounting needs to judge four assumptions through economic business. Therefore, it can set up a virtual learning community through the QQ group, WeChat group, based on the related teaching resources of collecting and arranging relevant teaching resources and send them to students. Meanwhile, it need pay attention to design video interactive interface to facilitate students to improve the quality of independent learning before class.

Teaching and discussing in the class. In this stage, teachers' soliloquy teaching is changed into interactive teacher-student learning, which is mainly carried out around video, cases and other teaching resources in pre-class teaching resources. To master students' learning progress, solving problems and puzzles, it is necessary to organize the classroom discussion to carry out the communication, especially for the knowledge of joint nodes of common problems. Class discussions can be conducted in groups, which not only cultivate the spirit of cooperation and mutual assistance, but also improve students' critical awareness and thinking ability.

Problem-solving and practice after class: This stage should not only solve classroom problems, but also evaluate the learning effect, and apply theoretical knowledge to practice. What is more important is to reflect on teaching according to the learning effect and provide data and experience for the effective completion of the next teaching task.

2) Design and analysis of teaching objectives

Accounting major conducted a detailed classification of research in the formulation of personnel training programs for students to engage in future career posts and job groups. Making personnel training objectives and standards specific, closely around the personnel training objectives and standards to set up the corresponding curriculum system, for career and job group set up professional direction course module, shunt, which reflected the characteristics. Accounting graduates can not only be engaged in securities but can also work as an accounting work.

As the main course of accounting major, “intermediate financial accounting” is characterized by abundant course contents, large information capacity, difficult in teaching and fast updating speed. Therefore, the teaching objectives of intermediate financial accounting should include basic knowledge objectives, basic ability objectives and professional quality objectives. First, basic knowledge objective. Through the study of this course, I have mastered the concepts, elements and concepts related to accounting, and mastered and applied the principle and compilation method of “four tables and one-note”. Second, basic competency goals. The teaching objective of intermediate financial accounting is to train accounting students to analyze various economic policies and judge the impact of various policy changes on accounting, so as to select appropriate accounting policies and methods.

Third, the goal of professional accomplishment. Through the study of this course, the students will be trained to understand the law, be honest, and firmly establish the concept of "no accounting fraud". In the process of dealing with accounting matters, the students will be able to correctly deal with the interests of the state, social benefits, enterprise benefits and other aspects, and promote the sustainable and harmonious development of enterprises.

3) Analysis of learner characteristics

Learner characteristic analysis is an important step in the process of teaching design. The realization of teaching objectives requires learners to have a clear cognition of their own characteristics and development requirements. Generally speaking, learner characteristics include learning preparation (general characteristics, initial ability) and learning style. Therefore, the success of the teaching design of intermediate financial accounting depends on the analysis of learners' characteristics.

The learners of intermediate financial accounting are generally second-year students majoring in accounting, they have already had a preliminary cognition to an accounting major. However, students still lack life experience and cannot deeply analyze and understand political, economic, cultural and other factors. Therefore, in the design of teaching contents, teaching methods, using the teaching media and teaching organization should fully consider the intermediate financial accounting learners' learning.

Tan dingliang, a Chinese scholar, believes that learning style should include five parts: cognition, emotion, motivation, physiological tendency and social tendency. According to the target of "intermediate financial accounting" teaching design to design pre-class preview, the use of "rain classroom" upload micro-class video, test questions, etc., when carrying out teaching tasks, students' cognition and emotions should be taken into account to eliminate their fear of difficulties and guide them to challenge themselves from easy to difficult. Intermediate financial accounting flipped class needs to be completed by students' self-consciousness, and it is vitally important for their interest and motivation. Learning satisfaction is a measure of learning effects of physiologic tendency. Therefore, in the design of "intermediate financial accounting" exercises, they should encourage students to do more difficult or more complex additional questions, improve grades by additional incentives or methods such as recognition students to realize self-value of active psychological tendency, and encourage students to attend the junior accountant examination and meet the demand of society.

IV. DESIGN AND IMPLEMENTATION OF TEACHING ACTIVITIES OF INTERMEDIATE FINANCIAL ACCOUNTING BASED ON "RAIN CLASSROOM"

Different from traditional classes, the internalization of knowledge and expansion of the ability of intermediate financial accounting flipped classroom go beyond mere knowledge lectures. Teachers collect students' pre-class learning feedback and difficult problems through "rain classroom" software, so that teachers can fully understand students' master degree of the content of "intermediate

financial accounting", and achieve the teaching objectives of knowledge, ability and accomplishment by taking the initiative to participate in discussions, answering questions and selectively teaching in class.

In this paper, the inventory chapter is selected in the "intermediate financial accounting", and the teaching period is two periods with a total length of 80 minutes. The teaching target for sophomore accounting professional students, they already had the basic accounting knowledge and strong ability of autonomous learning, teachers can design rich classroom teaching activities through rain classroom, such as screen, answering questions, discussion of the draw, voting, etc., so as to improve student participation enthusiasm, table.2 shows that the design of teaching activity based on the rain classroom:

TABLE I. "INVENTORY" RAIN CLASSROOM TEACHING ACTIVITY PROCESS DESIGN

Project	Content	Rain classroom platform
Preview before class	Textbook "inventory" of intermediate financial accounting	
	Inventory principle animation video	Rain classroom resources area online viewing
	Exercises that link up with basic accounting	Rain classroom activity area completed
Lecture and discussion in class	Answer any questions that arise during the preview	Questions lead to face-to-face sessions
	The key and difficult points such as purchasing cost and material cost difference in inventory are taught intensively	Enhance face-to-face teaching activities
	Discuss and practice in groups	Rain classroom activity area completed
Problem solving and practice after class	Ability expansion: try more difficult problems	Rain classroom activity area completed
	Group answer or group PK	Rain classroom activity area completed

V. THE DIFFERENCE BETWEEN RAIN CLASSROOM AND TRADITIONAL TEACHING

A. Different teaching objectives

Traditional teaching is based on "teaching to determine to learn". Teachers follow the content of teaching materials and use the form of full teaching. The students are only the recipients of knowledge and containers, with less innovation and no space to think about the source of knowledge. The flip classroom dominated by the rain class is a modern educational technology developed under the background of "Internet + education". Teachers turn from knowledge transfer to knowledge instructors, paying more attention to students' mastery of knowledge. The teaching mode changes from classroom teaching and homework to *pre-class preview and classroom discussion*.

B. Different teaching processes

The operation procedure of the traditional teaching mode is "Organizational Teaching - Introduction of Teaching - Teaching New Lessons - Summary and Induction - Homework and After-Class Reflection". The operating procedures of the

rain classroom are “establishing courses and classes - preparing and uploading pre-school resources - using rain classrooms - after-school data analysis”. The emergence of rain classroom technology enables teachers to objectively evaluate student learning and precision teaching. Teaching resources of different levels are pushed to achieve “hierarchical teaching”.

VI. ADVANTAGES AND DISADVANTAGES OF FLIPPED CLASSROOM

A. Advantages of Flipped classroom

Firstly, it provides an effective way for higher teaching resource sharing and precision education. Students' learning time is not fixed, and the fragmentation of knowledge drives the transformation of educational information. Mobile communication technology has promoted the development of educational informatization. As professional interactive teaching software, Rain Classroom not only satisfies the inter-provincial online teaching resource sharing and offline interaction requirements of teachers and students, but also provides technical support for teaching model of flipped classroom.

Secondly, it has changed the negative hidden dangers by mobile phones to traditional classrooms. In the teaching mode of flipped classroom based on the rain classroom, mobile phones can be used as learning tools to enter the classroom with great brilliance. Sign-in, online testing, voting functions and other activities can stimulate students' interest in learning, which meets the requirements of college students for mobile learning.

B. Deficiency of flipped classroom

1) Network instability

Flipping classroom teaching requires the support of a smooth network. Students need to keep their mobile phones connected to the Internet when teaching resources are pushed in class. Due to the difference in the teaching environment, slow or no network speed will affect the implementation of flipped classrooms.

2) Self-control test

Once the mobile phone becomes a learning tool and returns to the students, it requires students to have certain self-control and it cannot do things that are not related to the

classroom. At present, educational technologies such as the rain classroom do not set up real-time monitoring of the students' mobile phone learning. Although the instructor can also use certain incentives or restrict the use of mobile phones in the classroom, the effect is not obvious.

3) Software function design needs to be improved

In the use of rain classroom, common functions are PPT, multiple-choice questions, etc. It is not convenient to upload for intermediate financial accounting business questions. Moreover, for video data, only the PPT can be uploaded first, then you can see it on the student side. The screen subtitle cannot be displayed in the teacher's side, so the software function is not smart enough and needs to be improved.

VII. CONCLUSION

This paper mainly analyzes the application of professional teaching software of rain classroom in flipped classroom teaching. Meanwhile, the overall design and practice of flipped classroom are explored in the teaching practice of intermediate financial accounting. This paper further studied the differences between rain classroom and traditional teaching mode, and analyzed the advantages and disadvantages of the flipped classroom. Last, it put forward corresponding measures on the basis of the advantages.

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