Research on Task-Driven Teaching Mode Based on Flipped Classroom Concept

Kaitai Hua

Hunan Modern Logistic College

Changsha, China

Abstract—**Although the task-driven teaching mode based on the theories of learning from doing, constructivism teaching and situated learning is an effective teaching method, there still are some self-defects, such as the lack of systematization for teaching content, the lack of individualization for teaching, and the mismatch between students' knowledge reserve and task requirements. In order to made up its deficiencies, a novel task-driven teaching mode based on the concept of flipped classroom has been constructed in this paper. More specifically, by analyzing the characteristics of flipped classroom teaching and task-driven teaching, the flipped classroom is adopted for pre-class design, while the task-driven teaching is used to accomplish internalization of knowledge for students in class design. The practicability of after-class tasks is highlighted in after-class design. Therefore, the novel teaching model can better exert the advantages of flipped classroom and task-driven teaching mode and improve the teaching effect.**

Keywords—flipped classroom; task-driven; learning from doing; novel teaching mode

I. INTRODUCTION

China's traditional teaching methods always emphasize on knowledge-based[1]. The students often complete all theoretical teaching and then enter into practical learning. Obviously, it will lead to the separation of theoretical knowledge learning and practical operation. Consequently, the teaching mode of learning and doing separation is difficult to train students to meet requirements of the modern vocational education which pay attention to the combination of factory practice and book knowledge and the knowledge-action unity.

The task-driven teaching mode[2] based on the theories of learning from doing, constructivism teaching and situated learning is an effective teaching method. In the task-driven teaching mode, the teacher often regards the real tasks of enterprise as the main line to help students to complete the study and internalization of new knowledge, construct the knowledge and skill system based on the occupation post and cultivate the vocational ability.

The teaching idea of "student as the main body" is reflected in the task-driven teaching mode, which changes teachers' traditional role and teacher-student relationship in the classroom. At the same time, it is easy for students to stimulate and maintain the enthusiasm of learning, participate actively in cooperation learning in the group. Consequently, the cooperative spirit and communication skills of students are effectively trained, and the students' practical and innovative abilities are effectively cultivated in the task-driven teaching

mode. However, the task-driven teaching mode still has certain limitations. On the one hand, the student's knowledge reserve may do not match the task requirements, which increases the difficulty of task implementation; On the other hand, the design of the task is difficult to fully integrate the content of the course. As a result, it fails to establish a systematic knowledge system for students. Therefore, it is necessary to actively explore the optimization of task-driven teaching mode.

Flipped Classroom[3-4] is that the teacher, relying on Internet technology, pushes teaching resources such as teaching videos and PPT to the online platform, so that students can learn independently before class. The time in the class is mainly used for operation or practice. Obviously, the essence of this teaching mode is to change the roles of teachers and students in traditional teaching and re-plan the use of classroom time through the reverse arrangement of the knowledge teaching and internalization in chronological order. Flipped classroom teaching mode can not only help students acquire a complete and systematic knowledge, but also better solve the contradiction between teaching progress and uneven students' speed of mastering knowledge, as well as the problem of teachers' collective teaching and students' personalized cognitive needs.

Obviously, the flipped classroom mode in pre-class can achieve personalized self-learning and systematically master the curriculum knowledge structure, while the task-driven mode can help students to realize the internalization of knowledge in class. Therefore, the combination of flipped classroom and task-driven teaching can better bring out the advantages of flipped classroom and task-driven teaching to improve the teaching effect.

II. CONSTRUCT ON A NEW TASK-DRIVEN TEACHING MODEL BASED ON THE CONCEPT OF FLIPPED CLASSROOM

The basic idea of constructing the task-driven teaching mode based on the flipped classroom is to better bring out the advantages of flipped classroom and task-driven teaching. The flipped classroom is adopted to optimize pre-class preview. Simultaneously, the task-driven teaching is used to help students to internalize knowledge in class. Consequently, a new teaching model with perfect structure and better teaching effect can be developed.

After the accumulation of teaching for many years, Professor Robert Tallbert of the United States has successfully constructed a basic model of the implementation structure of the flipped classroom[5][6]. The important elements of the

implementation of the flipping classroom has been briefly described. (as shown in Fig. 1) Therefore, the general framework of new task-driven teaching model can be referred to the flipped classroom model by Professor Robert Tallbert. According to the classroom teaching process, the construction of the teaching model is divided into three major teaching design steps. (pre-course, in-class and after-class)
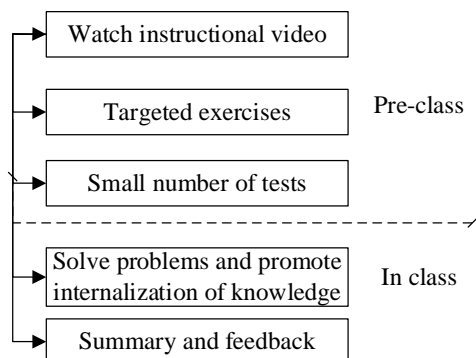
Fig. 1 Implementation structure of flipped classroom

A. Pre-class Design

In the flipped classroom, the teaching of knowledge is generally completed by the instructional videos which were provided by the teachers. The students can complete self-study, discussion and relevant tests on the designated teaching platform before class. In this mode, students are free to arrange the learning time and place, meanwhile, the students also can arrange the learning progress for themselves according to their own learning ability. Thus, it achieves personalized learning. In essence, the pre-class of flipped classroom is equivalent to present the teaching content in the traditional classroom to the online platform in the form of teaching resources such as video and animation, which can help students to lay the foundation for knowledge internalization in the classroom. Therefore, it is essential to well design to ensure effective organization and implementation of the following class

The pre-class design mainly consists of two parts, one is the teacher's instructional design, and the other is the requirement for students' self-learning.

1) Instructional Design

The teaching objectives are set according to the talent training plan, curriculum standards, and analysis of the students. In addition, the teaching objectives should be matched with professional ability. According to the teaching objectives, the knowledge points should be determined, which should be systematized as much as possible to help students to build a complete knowledge system. The abstract and difficult knowledge points are emphatically explained by information technology, animation, video and other multimedia courseware. Conversely, the simple knowledge points are only presented by PPT. All teaching resources which are ready in pre-class should be released on the teaching platform according to schedule. To help students complete pre-learning efficiently, a corresponding study task list should be developed to guide students to learn. Especially noteworthy is that study task list should have clear learning tasks and clear assessment

indicators. In order to get the students' learning effect, it is necessary to set up the necessary assessment test.

2) Learning design

It is important for students to have a certain ability to learn independently. The first thing for students is to consult the teacher's learning task guide to clarify the goals and tasks of the study. Then, students can learn the teaching resources released by the teacher, combining own basis and interests. When encountering confusion in learning, students can posing their problems through the discussion board of teaching platform, or study with the Internet. Problems which are not solved by adopting above-mentioned methods, can be recorded for communicating with teacher in the class.

B. Class Design

Relatively complete knowledge framework and certain knowledge reserve are obtained for students, through pre-class study and testing. So how to realize the internalization of knowledge for students becomes the next important teaching goal. Constructivists believe that the process of acquisition of knowledge is that learners realize the meaning construction through interpersonal collaboration activities in certain situations. Consequently, in the class design, classroom activities adopted task-driven as the main teaching mode need to make full use of the elements of "context", "collaboration". Simultaneously, teachers should give full play to the subjectivity of students, to realize the integration of teaching and learning, and complete the internalization of knowledge.

According to the process of task implementation, the class teaching design is divided into three parts, that are task to lead, task practice and task feedback.

1) Task to lead

The key of task-driven teaching is the design of tasks, and the design idea is shown in Fig. 2.
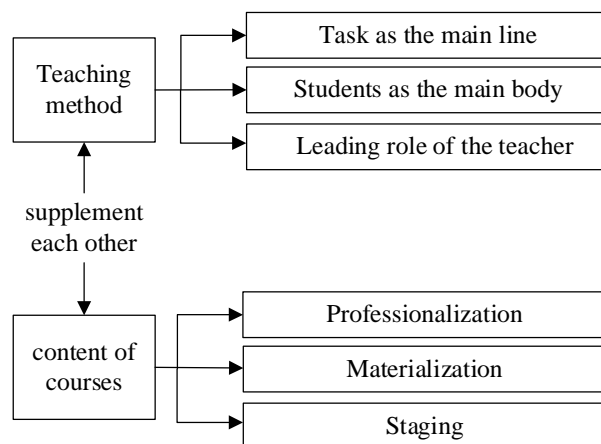
Fig. 2 Design idea of task to lead

In order to reflect the practicality and productivity of vocational teaching, task design should reflect the pertinence of knowledge points and production process. Simultaneously the teaching environment should try to be close to the real situation of production, management and service in enterprise. For this reason, the real enterprise tasks with the characteristics of profession, materialization and staging, are introduced into the

classroom and become the main line of class teaching. The teachers who help students complete the internalization of knowledge in the teaching process, should play a leading role in the classroom teaching, while the students should act as the main body.

2) Task practice

The design idea of task practice is shown in Fig. 3. Creating teaching situation based on task background can not only provide a clear cognitive point for students' learning, but also stimulate students' interest in learning. However, due to the differences of individual learning methods, thinking ability and cognitive level, it is difficult to successfully complete the task, if the teachers use traditional teaching methods. As a consequence, group study as a very good way to learn is adopted. It is not only beneficial to the cultivation of a good sense of teamwork, but also can give full play to the advantages of group mutual learning and discussion learning.
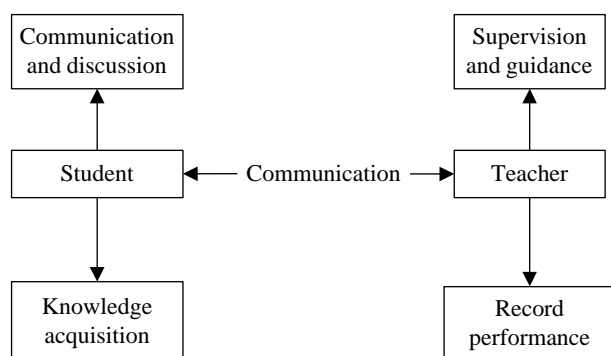

Fig. 3 The design idea of task practice

For the implementation of the task, teachers can design an exploration link, so that students can independently explore the implementation steps and contents of the task. At this moment, the teacher is mainly responsible for supervising the group and giving timely guidance. When students encounter common problems, teachers can adopt a problem-oriented approach to carry out teaching, accurately extract the knowledge points which students have not mastered behind the problems, make full use of modern information teaching methods to improve the efficiency of knowledge acquisition.

Students have mastered the corresponding knowledge points, then return to the task, continue to complete the relevant tasks in accordance with the implementation steps. If the problems are occurred again in the subsequent task implementation, the teacher can help the students overcome the obstacles in a similar way as above until the whole task is completed. During the implementation of students' tasks, teachers should encourage students to actively discuss and make use of teaching resources for in-depth exploration, instead of turning to teachers for help on the premise of lack of thinking. When supervising students, teachers should evaluate students' individual performance in class according to the requirements of the evaluation plan.

3) Task feedback

In order to truly and accurately know the effect of students' transformation from knowledge to ability, students' works should be given a general evaluation after task practice. Meanwhile, in order to realize the diversity of assessment forms, the forms of assessment can be comprised students' self-assessment, group mutual assessment and teachers' comments. Through evaluation, learning is strengthened again to deepen students' internalization of knowledge and promote students' transformation from knowledge acquisition to skill upgrading. Moreover, the effectiveness of teaching design is verified by the actual learning effect of students, which can be used to support the after-class reflection as well as support the optimization of teaching design.

C. After-class

In order to enrich students' second class and reflect the value of task practice, excellent students can be selected to the cooperative enterprise for work feasibility verification to further enrich students' practical experience. Students can better understand the significance of theory and the value of practice by switching between theory and practice.

III. CONCLUSION

Task-driven teaching mode enables students to experience the application process of knowledge and skills in class, learn to explore, realize the knowledge construction and knowledge migration. However, at present, there are some self-defects in the task-driven mode, such as the lack of systematization for teaching content, the lack of individualization for teaching, and the mismatch between students' knowledge reserve and task requirements. Consequently, it is necessary to actively explore the optimization of task-driven teaching mode. By analyzing the characteristics of flipped classroom teaching and task-driven teaching, a new teaching model is proposed that the flipped classroom is integrated into task-driven teaching. Or more accurately, the flipped classroom is adopted for pre-class preview, while the task-driven teaching is used to internalize knowledge in class. Therefore, the novel teaching model can better exert the advantages of flipped classroom and task-driven teaching mode and improve the teaching effect.

REFERENCES

[1]. Zhang Jinlei, Wang Ying & Zhang Baohui. Introducing a New Teaching Model: Flipped Classroom[J]. Journal of Distance Education, 2012, (4):pp. 46-51. (In Chinese)

[2]. Ao Qian, Liu Hua, Jia Shan-de. The Research of "Case – Task" Driven Teaching Model Under Blended Learning [J]. Modern Educational Technology, 2013(03):pp. 122-126. (In Chinese)

[3]. Flipped classroom defined[EB/OL].[2012-03-18].http://digitalsandbox.weebly.com/flipped-classroom.html.

[4]. Zheng ruiqiang. The optimization design and practical reflection of the Teaching mode in the college flipped classroom[J]. Journal of Higher Education Management, 2017, (01): pp. 97-104. (In Chinese)

[5]. Should you flip your classroom? [EB/OL]. (2014-12-10)[2016-01-05]. Https://www.Edutopia. Org/Blog/flipped-classroom-ramsey-musallam.

[6]. Zeng Zhen. The flipped instruction: Feature, practice and problems [J]. China Educational Technology,2012(7): pp. 114-117. (In Chinese)