

Application Research on "Flipped Classroom" Teaching Mode in Colleges and Universities

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Abstract. "Flipped classroom" as a new form of teaching break through the limitations of traditional classroom teaching, to reconstruct the new idea of teaching structure and teaching, this paper study in order to promote the application of "Flipped classroom". The research mainly includes three aspects: one is that of the traditional classroom and "Flipped classroom" contrast analysis; Two is, "Flipped classroom" teaching model learning task design, designed by the study guide, learning task, question design, constructive learning resources, learning test, archives and the reflection of "Learning task list"; Three, put forward a "Flipped classroom" teaching mode. In this paper, the research results, to comprehensively promote quality education, promote the development of higher education provides a new solution.

Introduction

Teaching mode is in a certain teaching ideas or teaching under the guidance of the theory, structure of teaching activities to build a more stable framework and activity programs. As a structural framework, highlighting the teaching mode from the macroscopic to grasp the teaching activities on the whole, as well as the internal relationship between the elements and functions; As the active program, highlights the orderliness of the teaching mode and operability. Teaching mode is derived from the practice, the optimum selection of concrete teaching activity, generalization and processing results, one kind of teaching and the various factors involved and the relationship between, to provide a relatively stable operation framework, this framework has the theoretical basis of the inherent logic relationship already have theoretical significance.

China from "The national medium and long-term education reform and development plan outline (2010-2020)" since release, education informatization has achieved fruitful results, these results involved in information technology and curriculum integration, teaching mode under the environment of informatization, emphasis on information technology bring study way change and support for learning. Tide, "Flipped classroom" should comply with the big background of education informatization in China, for the education informatization development has injected new vitality. "Flipped classroom", refers to the time to adjust the inside and outside the classroom, teachers are no longer take the classroom time to teaching information, will study the decision as to shift from teachers to students. Students to plan their own learning, learning rhythm, style, and presents the way of knowledge, the teachers teaching method and the collaboration method is used to meet the needs of students and facilitate the personalized learning, goal is to make students obtain more real learning through practice [2]. Colleges and universities, this paper researches on the application "Flipped classroom".

Comparative Analysis on Traditional Classroom and "Flipped Classroom"

The traditional teaching is the teacher lectures, students grasp the classroom speak content after class. However, with the rapid development of information technology and the great changes in living environment, cognitive thinking people also slowly change, for learning method has a higher request, the disadvantages of traditional teaching are increasingly highlights: traditional teaching is teachers one-way knowledge, students' learning autonomy has not been displayed; Traditional

classroom teaching for all students, the teaching of middle school students individual differences are ignored; Due to the lack of good environment, lack of initiative of students outside the classroom, on the "absorption internalization" this link, the student to the migration of knowledge and understanding is not enough in-depth [3]. The "Flipped classroom" learning two switch process was carried out, in "absorption internalization" this link, can the student extracurricular transferred to the classroom, in terms of learning and knowledge building, based on their practical ability and give priority to, the principle of their aptitude; "Flipped classroom" focuses on the autonomy of the classroom to the students, and teachers just through assistance and communication support student learning, students according to their own needs, the freedom to build their own knowledge system. Contrastive analysis of the traditional classroom and "Flipped classroom" as shown in Table 1.

Table 1. Comparative analysis on traditional classroom and "flipped classroom"

No	Comparative analysis	Traditional classroom	Flipped classroom
1	Teachers' roles	Knowledge and the masters of the classroom	Student learning guide and facilitator
2	Students' roles	The passive recipients of knowledge	Active learning and researchers
3	Classroom teaching form	Class explanation + class homework	Preview before class and inquiry in class
4	Classroom time allocation	Teachers explain most of the time	Teachers and students inquiry learning most of the time
5	Classroom teaching content	Knowledge explanation and instruction	Problem inquiry learning
6	Teaching methods applied	Present content	Autonomy, cooperation, explore learning tool
7	Teaching evaluation	Paper test	Multidimensional evaluation

Learning Task List in "Flipped Classroom" Teaching Mode

Learning can achieve the goal, in addition to learning method is suggested to guide, rely mainly on "learning task" to ensure that. Learning task design needs to meet the following requirements: to meet the requirements of the goal, the goal is transformed form of the teaching goal, so that the students before the start of the autonomous learning, can clearly understand through what way to achieve what kind of learning objectives and requirements; Put the knowledge into the problem, is the most basic, the most effective method of the design of the task. Teaching emphasis, teaching difficulties and other knowledge into question. It is pay attention to the maneuverability, 2 it is to develop understanding ability; Considering weight, knowledge coverage and for teaching important or difficult, broken down into multiple problem is needed to achieve deep understanding; Provide a convenient resource links, where the learners need most, significant links to sign, and make links, provide convenient for learners to study the path [4]. Learning task design through "Learning task list".

"Learning task list", is designed to help students clear before the class content, target and method of autonomous learning, and provide corresponding learning resources. Can let students make progress, according to the need of individual learning step according to the plan. "Learning task list" became a powerful organization "Flipped classroom", help teachers to improve teaching quality, change teaching methods and the effective ways to cultivate innovative talents, etc. The content of the "learning task list" as shown in Fig. 1.

(1) Study guide. Make students clear object, clear learning objectives, and classroom learning will take what kind of organization form, in order to be prepared to choose suitable for their own learning way to carry out autonomous learning. Gradually formed the personalized learning habits.

(2) The study task. Learning tasks including overall understanding and grasp the requirements. "Overall grasp" can make the students grasp the outline main point, on the whole grasp the learning content. "Concrete grasp" just briefly hint grasp the requirements of specific knowledge.

(3) Problems in design. Is the core of the "learning task list" design and implementation the root of the "Flipped classroom", the teaching content into a specific problem are derived, so that the students in solving the problem at the same time grasp the teaching emphasis and difficulty.

(4) Constructive learning resources. Help students to achieve learning goals and establishment situation. By providing situation, help the students when necessary through the situation of the inquiry or processing, achieve the goal of teaching difficult point or other knowledge.

(5) Test study. The test is to examine the effects of learning means necessary. From different scope and different angles, different difficulty and focus on the surface of the multi-faceted testing, flexible requirements subject, training students' logical thinking ability and innovation ability.

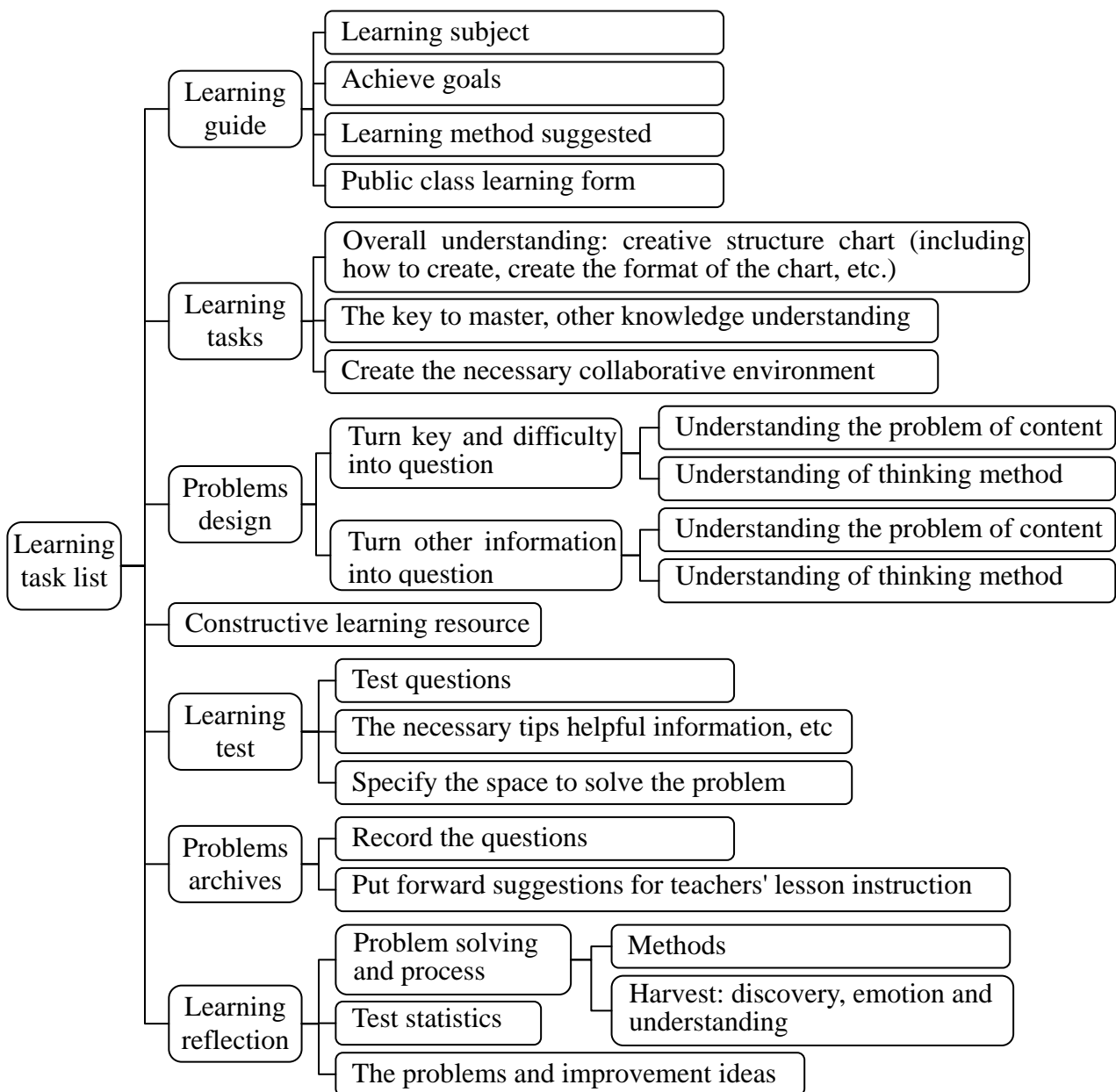


Fig. 1. Content of learning task list in "flipped classroom"

(6) Problem files. Found problems in the process of autonomous learning, through the problems in the form of such archives, and record the corresponding problem analysis and problem solving method and process, so that a deeper understanding of issues and expand the solution.

(7) Learning to reflect. In the process of problem solving, analyze the causes of correct learning method, discovery, comprehension and understanding approach to learning, will test results timely statistics, find out the existing problems and put forward improvement ideas.

Suggestions on the "Flipped Classroom" Teaching Mode

"Flipped classroom" has changed the traditional classroom teaching structure, the relationship between teachers and students and the learning style, can meet the demand of development in the information age. "Flipped classroom" was still in the stage of attempt at home, through the investigation and study and in-depth analysis, combining previous research results [5-9], in this paper are as follows:

(1) Change the traditional education idea, education reform determination. Education should be based on education, pay attention to people's self development and perfection. "Flipped classroom" teaching model provides students with personalized learning environment. Flipped classroom "Flip" is not only the classroom teaching structure, more should be teaching ideas and thoughts. The concept and the concept of new curriculum reform in our country is consistent. The new curriculum reform to "all for each student's development" as the guiding ideology, think students education is the reality, pay close attention to students' healthy personality cultivation. Department of education, schools and teachers must change the traditional education idea, sets up the new student view and teaching view, truly "with the students for this", break the balance of education environment, lets the student and teacher in new and uncertain environment. This requires education department, schools and teachers have a strong education beliefs change.

(2) Production of network video resources. In the "Flipped classroom", imparting knowledge is usually provided by the teachers teaching video. Teaching video can be recorded by curriculum on teachers, but also the quality of open education resources on the Internet to find, so can not only improve the utilization of resources, also save the manpower and material resources, also can make the students come into contact with other excellent teachers of the latest teaching content. To record video, the teacher should according to the actual situation of students, targeted on the content of the teaching, according to the differences of different class at the same time, to consider not only all, and to consider the individual students, the teaching video production to accomplish interface design style and reasonable, unified, convenient management, pay attention to practical, clear navigation, accompanied by clear text introduction and help document, necessary interaction function; Media playback process control, smooth running, easy operation and quick, optional, page color collocation is reasonable, the design is beautiful and easy, try to enhance the sense of teaching, at the same time to consider the visual effect, emphasize the key points of teaching subject, the design of the structure of the interactive strategies, real learning platform to help students build rich content, attracting students actively participate in the video.

(3) Design in "before - in - after class" the integration of the learning activities. Learning activity design is a key link in the process of teaching, the "Flipped classroom" learning activity design should be closely around "before - in - after class" for the integration of design, outstanding class autonomous learning activities, problem solving activities in class, the design of the learning development activities after class. Activities should be clear learning task requirements, in the autonomous learning stage to let the students need clear what learning resources, where access to resources, autonomous learning what problems to solve, encounter problems should choose which way to communicate and solve, released at any time can't solve problems. Problem solving phase in class, the teacher's need to consult the students' records, common problems and special problems, find the classroom to show these problems, through the guidance of inspiration, learning exchange activities, guide students to voice their opinions, in the process of thinking collision, to solve problems, so as to cultivate the students' communication and cooperation consciousness, realizing the sharing of wisdom. At the same time, the teacher show the student in the class learning phase positive answer others record of online learning, improve the students' self fulfillment. Development stage in learning activities, the teacher through the observation, access to online learning records and periodic evaluation, analysis of the students' learning process and learning

effect, the arrangement of different levels of development learning tasks, in the process of expanding task to consolidate knowledge, to realize the knowledge migration.

(4) A change of way of teaching evaluation. In the "Flipped classroom", regardless of the teacher's teaching way and student's learning style, great changes have taken place emphasis on students through independent exploration and collaborating in the form of group learning, teachers impart knowledge by micro course, use of interaction teaching platform and students, and guide students to explore to solve the problem in class, the traditional evaluation method to assess teachers "teaching" and students "learning" the full effect. Therefore, need a new way of evaluation criteria and evaluation. Make evaluation standards need to consider the following factors: whether teachers can according to the actual situation of students, produced in conformity with the teaching objectives and teaching content of micro course; Teachers can through the teaching platform, communicate with students form positive benign interaction; Whether teachers can organize the student to form a good atmosphere in class team collaboration and inquiry-based learning; Whether the students could use the information technology, according to the teacher for micro course of explorative learning independently; Can students in the classroom or on teaching platform through cooperation with others, actively explore and solve problems; Students will be able to make full use of information resources, to fully demonstrate the learning outcomes and to complete the absorption of knowledge internalization.

(5) Scientific design of course. The course is the premise and basis to realize "Flipped classroom", micro video is the core resource. Micro video control in 10 minutes or so, time is too long will bring students overweight burden of study, students are difficult to take out enough time after class, also hard to concentrate on the finish for a long time to learn. Micro topics should choose teaching in a certain difficulty, key or fault point, reasonable planning according to the course content. The class video content refinement course knowledge point must be reasonable. Through micro lesson video transfer knowledge cannot too much, too hard, nor too little, too easy. Knowledge too much, too difficult, it is difficult to in a short span of a few minutes to be thorough, clear; Too little, too easy, fragmentation of knowledge, is not conducive to students' overall grasp. Micro course design should be the main line is clear, focused, logical, method is simple, vivid, inspiring. Micro lesson video to do voice stable image clearly, pronunciation, speed, rhythm, appropriate language which was very infectious. Because the video short, shall be directly cut into the subject content, without any ground. In order to achieve good learning effect, teaching design should try to be fun and fully arouse students' interest and enthusiasm. In addition to the micro lesson video resources, teachers also should match design and video of the courseware, moderate difficulty of interactive exercises, micro reflection and feedback, etc.

Conclusion

"Flipped classroom" teaching mode can obtain many benefits: first, students can learn according to their habit to arrange the schedule, and learn self-management consciousness greatly enhanced; Second, through the network timely feedback, teachers can understand the students' learning difficulties, can make a more targeted tutoring; Third, the classroom interaction time increased, the classmate mutual help and remind greatly improve the learning efficiency; Fourth, to improve students' ability to analyze and solve problems, and lays the foundation for students' lifelong learning. In this paper, the research results, to comprehensively promote quality education, promote the development of higher education provides a new solution.

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