

# Flipped Classroom Teaching Mode Design Based on "Internet + Mobile Terminal"

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**Abstract:** In the Internet age, mobile Intelligent terminals have become a key approach for people's study and work. In this paper, a flipped classroom teaching model based on "Internet + mobile terminal" is proposed in hope of effectively enhancing students' comprehensive quality and training versatile innovative talents with autonomous learning ability, independent thinking capacity and teamwork skills.

**Keywords:** Internet+; Mobile terminal, Flipped classroom, Teaching model

In the Internet age, mobile terminal devices represented by intelligent phones and tablet computers will be accessible for people's study and work as the substitutes of traditional PC devices and. College students as a generation growing up with information technology have been equipped with smart phones and adopted them as their main learning methods for inside and outside school study. At present, a lot of online teaching platforms developed in China have gathered a large number of online course resources, such as Chinese University MOOC, and Shanghai Jiaotong University CNMOOC. The exploration network teaching or assisted classroom teaching through mobile terminals have obtained research results and successful experience.

This study is focused on the core issue of how to fully integrate mobile terminals into students' learning and teachers' classroom teaching, proposes a mobile terminal-based interactive flipped classroom teaching model, and converts mobile devices into a "useful tool" for teachers' teaching and students' learning, in hope of fully utilizing cellphone functions and enhancing the efficiency of classroom teaching through information technology, so that students give full play to the role of mobile devices in learning, stimulate their learning enthusiasm, and cultivate their learning capacity in the information age.

## 1. Definition of Flipped Classroom Teaching Model

As a completely replacement of traditional teaching concepts and teaching methods, flipped classroom teaching model can realize high-quality educational resource sharing, readjust the time inside and outside the classroom, and shift the decision-making power of learning from the teacher to the students in virtue of mobile Internet technology and modern information technology. This teaching model allows students to focus more on teaching item learning in the classroom with independent inquiry while discussing with other students or teachers. Instead of lecturing in class, teachers can spend more time communicating with students or provide individual tutoring. The information of the teaching item requires students to complete independently through independent inquiry before class, checking on teaching resources online or seeking the help of other students or teachers through interactive platform. After class, students can plan the learning content and learning rhythm independently, and keep in contact with teacher through the interactive platform for reviewing and supplementing students' listening effects or answering their questions. The flipped classroom teaching model allows students to learn for themselves, greatly inspires their learning enthusiasm, and enhances their participation. The abundant online courses and high-quality teaching resources on the Internet underline teachers' guiding role and highlight students' learning effects.

## 2. Mobile Terminal-based Flipped Classroom Teaching Model

In virtue of the advantages of the Internet, through the integration of relevant teaching and research resources from domestic and overseas famous schools and scientific research institutions, it can timely collect student information, centralized question feedback, and effective push messages to students through online interactive forums, classroom Q&A, and WeChat. It is feasible to use the convenient, comprehensive, and open mobile network to design classroom teaching links according to students' psychology and network usage behavior rules, establish a teaching process of classroom autonomous learning, teacher specific instructions, and online in-class testing, and carry out difficult points online discussion and off-class network expansion. In each link, students' learning effects, learning difficulties and points of interest can be known through classroom questions, discussion reports, tests, and online communication and teachers' key lectures in the classroom can be supplemented based on feedback.

## 3. Realization of Flipped Classroom Teaching Model

The teaching process can be reestablished to design a teaching process according to students' autonomous learning discussions, teachers' random questions and key instructions, and classroom online tests. In terms of teaching space, it can realize classroom and the network comprehensive integration and switch at any time according to the teaching needs; in terms of teaching approach, it can realize three-dimensional teaching through comprehensive use of traditional teaching materials, multimedia, mobile social software, network examination software and other tools. After class, it is supplemented with difficult points, hotspot online discussions and network self-determined learning.

### 3.1. Selection and Utilization of Flipped Classroom Teaching Platform

To achieve the goal of implementing flipped classroom teaching reform and fully utilize students' cellphone functions, following platform options are provided: ①Select a platform specifically designed for mobile informatization teaching; ②Mainly based on the traditional Web version teaching platform, supplemented by Lanmo cloud class, Rain Classroom with interactive teaching tools of strong mobile terminal functions; ③use general social platforms such as QQ group and WeChat as direct media for teacher-student interaction. "Education is life". They can be used in education and teaching to achieve teaching goals.

### 3.2. Make Use of "Ketangpai" to Realize Interactive Flipped Classroom Teaching

"Ketangpai" is currently one of the most representative online teaching management platforms for the study of domestic information technology and curriculum integration, which provides materials and learning paths for students' independent learning, better satisfy teaching and learning needs, and organically integrate with mobile terminal equipment to create a good information-based learning environment for successful implementation of flipped classroom teaching.

#### (1) Before class

Before class, students use video teaching resources for self-study and solve the cognition problem of knowledge points. Teachers can upload the learning themed course materials to the "file" of the "Ketangpai" and share with the students. The file serves as a cloud disk shared mutually by teachers and students so as to satisfy students' the needs for pre-learning, independent study and review after class. Teachers post the learning task list and self-study test questions on "Ketangpai", collect and sort out students' feedback questions and publish in the interactive discussion area for the preparation of answering questions in the class. Students can watch the video resources repeatedly according to their actual situation, and then take self-study tests independently, and ask difficult questions. Teachers and students use the web "Ketangpai" and "Ketangpai" WeChat official account for resource sharing and feedback interaction.

#### (2) In class

Students' in-depth understanding of knowledge can be realized through case analysis, discussion, and other means in class. Students can acquire knowledge and apply knowledge to solve practical problems. It is feasible to arrange questions and answers, acceptance tests, intensive lectures, learning promotion, results display, sharing and exchanges and other activities. First of all, teachers can interact with students by asking questions to answer the students' problems in the pre-class study. Then, teacher

can post test questions on "Ketangpai" to test the learning effect, provide intensive lecturing according to the test results and intensify practice to promote the teaching effect. Projects-driven software courses can be carried out to guide students to complete their works within the specified time. Teachers can provide timely help students in need, guide students to display their works, and carry out learning exchange activities. By combining real classrooms with "Ketangpai", interaction between teachers and students can be realized in answering questions and solving puzzles, as well as the interaction between test feedback and practical supplementary, students' mutual interaction of exchange and result sharing.

(3) After class

Teacher provides the evaluation of students' overall performance, adopts incentive mechanisms according to the individual differences, and provides sustainable in-depth learning guidance in the form of private messages and interactions. The exercise link is an important step for learning content consolidation and problem deepening. Teachers can arrange after-class exercises in "Ketangpai" to help students deepen and consolidate the course content and discover their vulnerable points.

### ***3.3. Mobile Terminal-based Flipped Classroom Assessment Method***

To realize the goal of cultivating students' comprehensive abilities, increase the proportion of usual performance and enrich in-class assessment patterns, in addition to previous approaches of attendance, in-class questioning and discussion, it is necessary to add classroom network online test to verify the effectiveness of students' classroom learning, thereby realizing a multi-angle assessment of the whole learning process. By doing so, knowledge review, comprehensive application and exercise of multiple abilities can be integrated throughout the whole teaching process. The in-class assessment based on knowledge modules is transparent and public. In addition, it can discover problems in teaching and learning in real time so as to carry out adjustment of teaching and learning behaviors in time.

## **4. Precautions for Implementation of Flipped Classroom Teaching Model**

### ***4.1. Meticulous Design is Aimed to Strengthen Project Applicability.***

Despite students as the main part in the flipped classroom, teachers should not abandon their responsibilities. Therefore, teachers should carefully design course items and emphasize the applicability of course items. Apart from preparing corresponding videos and knowledge materials, they need to get well prepared for the communication between students before and after class, the inspection of classroom learning effects, and classroom reflection.

### ***4.2. Implementation of Classroom Learning.***

Flipped classroom teaching model allows students to reverse classroom learning and after-school learning. In the classroom, students' main task is to solve the problems. Therefore, it is feasible to adopt student-student discussions, teacher-student discussions, and role-playing methods to enhance students' enthusiasm and expand their creative thinking. In specific teaching activities, teachers should ask questions based on the outline according to the teaching priorities and teaching difficulties, and carry out teaching according to students' problems. In this process, teachers play the role of instructor and inspirer, rather than usurping students' subjectivity. After the teacher asks the question, the remaining class should be given to the students. Teachers also need to encourage students to use various methods ways to solve the problem for the internalization of what they have learned.

### ***4.3. Establish A Scientific Evaluation System to Inspire Students' Learning Enthusiasm.***

A scientific evaluation system is essential for generating a driving force for learning. The evaluation system is composed of teacher evaluation, student self-evaluation and students' mutual evaluation, so as to achieve a fair and comprehensive evaluation. Students will gain a clear understanding of own progress and disadvantages, and feel the pressure of competition and the motivation to move forward. It can effectively arouse students' learning enthusiasm and initiative.

## **5. Conclusion**

As mobile learning allows students to learn anytime and anywhere, it has attracted more public

attention. Under the guidance of teachers' innovative teaching, designing and implementing a new classroom teaching model by means of mobile phone network, a student-oriented teacher-led benign interactive classroom atmosphere with teaching complementarity can be realized to effectively enhance students' comprehensive quality, cultivate versatile innovative talents with autonomous learning ability, independent thinking capacity and teamwork skills.

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