

Research on Flipped Classroom Teaching Reform Based on the Cultivation of Innovative Ability of College Students

Xuelian Zuo

School of Digital Trade, Zhejiang Yuexiu University, Shaoxing 312000, Zhejiang, China

Abstract: Cultivation of innovative ability is an important goal of higher education, and flipped classroom teaching is undoubtedly an important way to cultivate innovative talents. This paper firstly refines the current situation and problems of classroom teaching in higher education, then systematically elaborates the content of flipped classroom teaching reform based on the cultivation of innovative ability, and finally summarizes the innovations of this kind of teaching reform.

Keywords: Flipped classroom, teaching reform, evaluation.

1. Introduction

Innovation is the soul of a nation's progress and the inexhaustible power of a country's prosperity. The 13th Five-Year Plan for Talent Development of Zhejiang Province puts forward that Zhejiang Province will vigorously promote mass entrepreneurship and innovation, adhere to the concept of innovative development, and cultivate high-level innovative and entrepreneurial talents. Colleges and universities are undoubtedly an important base for the cultivation of innovative talents, and the goal of higher education has gradually shifted from the cultivation of professional ability to the cultivation of innovative spirit and innovative ability as the core of quality education. Zhejiang Higher Education "13th Five-Year" Development Plan proposes to deepen the reform of innovation and entrepreneurship education in colleges and universities as a breakthrough to promote the comprehensive reform of higher education, and to take the spirit of innovation, entrepreneurial awareness and innovation and entrepreneurial ability as an important indicator for evaluating the quality of talent cultivation. And in the innovative talent training mechanism, it is proposed that we need to deeply implement the classroom innovation action plan, closely focusing on enhancing the selectivity of learning, strengthening the construction of the curriculum system, reforming the teaching methods and approaches, and widely carrying out inspirational and discussion-based teaching. Flipped classroom teaching is undoubtedly an important way to cultivate innovative talents. Flipped classroom refers to the traditional knowledge transfer in the classroom, knowledge internalization in the after-school session to flip, before the classroom teacher set up the task, through the network teaching platform and so on to complete the task of independent learning, to achieve the transfer of knowledge; classroom teacher testing and answering questions, organizing group discussions, multi-dimensional interaction between students and teachers, the extension of knowledge and expansion, thus achieving Students take the initiative to construct meaning and internalize knowledge.

Flipped classroom teaching reform research based on the cultivation of innovative ability is oriented to "stimulate innovative thinking and cultivate innovative ability", with networked information resources and teaching system as the

carrier, and "interest-guided, interactive and collaborative, project-driven, process management" as the core of the teaching reform. Theoretically, it has further enriched the teaching reform of flipped teaching. Theoretically, it further enriches the literature research related to flipped classroom teaching reform and improves the flipped classroom teaching model; practically, it helps to make up for the shortcomings of traditional classroom teaching, stimulates students' learning potential, promotes the enhancement of students' independent learning ability, so as to cultivate students' innovative thinking and innovation ability, and outputs innovative talents for the development of local economy. At the same time, the implementation of flipped classroom for other colleges and universities to provide certain experience and reference, to provide new ideas for the cultivation of innovation ability of college students in China.

2. Status and Problems

Since higher education has realized the transformation from elite education to mass education, the number of college students has been rising, but the comprehensive quality of college students can't meet the social demand, structural contradiction, lack of competitiveness, especially the lack of innovation ability. The reason for this is that the solidified teaching mode and outdated teaching methods are one of the important reasons, and students' satisfaction with teaching is generally low. Teachers are still dominated by traditional teaching methods, and the problems of the existing teaching mode mainly include: the classroom is mainly dominated by the teacher's theoretical knowledge lectures, the course content is disconnected between theory and practice, and the students passively accept it, and the students are less digestive and absorptive of the knowledge; the course evaluation method is single, and is mainly dominated by the final grades, which can't stimulate the full stimulation of the learning potential of the students; the teaching method is single, and lacks interaction and communication with students, and the innovative thinking of students is not sufficiently stimulated. Interaction, communication, students' innovative thinking, cooperation, problem-solving ability, practical ability has not been fully tapped.

Flipped classroom first originated in the United States when a chemistry teacher used the flipped classroom teaching

mode in the classroom, and in 2011, with the rise of "Khan Academy" and "catechism", it has gained more and more attention from scholars and educators, and the flipped classroom teaching mode has been regarded as an effective way to make up for the shortcomings of traditional teaching and to stimulate the learning potential of students. Flipped classroom teaching mode is considered as an important initiative to make up for the shortcomings of traditional teaching, stimulate students' learning potential, and cultivate students' comprehensive quality, especially innovation ability. Research on flipped classroom mainly focuses on the following aspects: the connotation of flipped classroom, the characteristics of flipped classroom, the significance of flipped classroom and the teaching mode of flipped classroom. Throughout the current research, it is found that: the teaching mode of flipped classroom has different views and has not yet formed a set of perfect teaching system; the attention to the teaching mode of flipped classroom oriented to the cultivation of innovation ability is also less, and there is no model worthy of popularization; there is also a lack of research on the evaluation of flipped classroom teaching, which is exactly what is to be discussed in this paper.

3. Content of Flipped Classroom Teaching Reform Based on The Cultivation of Innovative Ability

(1) Reconstructing the teaching content of courses that integrate innovative thinking

The teaching content of the course is always an important carrier for the cultivation of innovative ability, so the reform of the teaching content is the first priority. Firstly, the teaching objectives of the course should be reconstructed. On the basis of the traditional teaching objectives, according to the demand for talents in the market and the development of the society, the comprehensive application of knowledge and the cultivation of students' comprehensive quality, especially the cultivation of innovation ability and innovative thinking, should be added, and the syllabus should be revised on the basis of the traditional teaching objectives. Secondly, around the teaching objectives and syllabus, select the teaching content of the courses, strengthen the basic knowledge, optimize the knowledge structure, and introduce the latest developments in the industry and enterprise examples to broaden students' knowledge, guide students to apply theories to practice, and stimulate students' innovative thinking and innovative ability.

(2) Reform of Teaching Design and Teaching Methods Based on Flipped Classroom

The teaching design of flipped classroom subverts the traditional teaching process and teaching methods, realizes the transformation from teaching first and then learning to learning first and then teaching, and fully embodies the teaching concept of taking students as the main body and teachers as the leading. According to the goal of cultivating innovative ability, we reconstruct the learning process of students inside and outside the classroom, rationally set up teaching links, and cultivate the independence of students' thinking and autonomy of learning. Further deepen the reform of teaching methods and teaching tools, highlight the main position of students in classroom teaching activities, take mobilizing students' enthusiasm as the core, and comprehensively use multi-dimensional interaction, situational simulation, case study teaching, task-driven,

brainstorming method and other teaching methods to cultivate students' creative thinking and innovation ability.

(3) Integrate teaching resources and build a three-dimensional teaching platform

The construction of three-dimensional teaching platform is an important guarantee for the smooth implementation of the flipped classroom teaching reform based on the cultivation of innovative ability. First of all, the use of big data technology and network teaching platform, for students to open up a broad space for independent learning. Continuously improve the teaching resources of the website, including teaching videos, bibliographies, case materials, study guides, etc., to provide students with rich resources and tools for independent learning. Secondly, improve the multimedia teaching means, strengthen the construction of on-campus high-quality online courses and high-quality teaching materials, and realize the open sharing of course resources. Finally, build a scientific practical teaching platform to enrich the practice opportunities for college students' innovation and entrepreneurship, such as updating and upgrading the software and hardware equipment for experimental training teaching, and carrying out innovative practical teaching activities and scientific research activities.

(4) Construction of multi-dimensional and process evaluation system

Abandon the traditional assessment method based on final examination scores, and construct an evaluation system based on process evaluation and supplemented by result evaluation. The evaluation system includes usual and final, usual mainly consists of three parts, the assessment of students' independent learning before class, which mainly includes watching the video situation, learning effect, learning attitude, etc. In the class, it mainly refers to the classroom group communication and collaboration, problem solving ability, innovation ability, learning outcomes and personal performance and other formative evaluation, taking the final meaning construction and knowledge internalization as an important criterion for detecting classroom results. After class, relevant exercises are arranged around the core knowledge points to test the classroom learning results and guide the later learning. The final examination is diversified in the form of project design, practical operation, research paper, case study and investigation report.

4. Innovations in Teaching Reform

(1) Innovation in teaching philosophy

Abandon the traditional concept of "teacher-centered and classroom-centered", and establish the modern education concept of "student-centered" and teacher-led. The cultivation of students' innovative ability is comprehensively carried out in teaching content, teaching mode, teaching methods and teaching evaluation. Make teachers become classroom organizers, guides, listeners, advice and cooperation and other multiple identities, students from the classroom knowledge passive recipients to active learners.

(2) Innovation of teaching mode

Subverting the traditional teaching mode of teaching before learning in the past, it makes full use of modern education and teaching means to realize learning before teaching. With the networked information resources and teaching system as the carrier, students learn independently before class to realize the transmission of knowledge; in the classroom, through multi-dimensional interaction between teachers and students, answering questions and solving puzzles, extending and

expanding knowledge and other ways to realize the students' active construction of meaning and internalization of knowledge; and after class, using the course network platform for consolidation of knowledge and on-line interaction. Forming a teaching organization mode in which students' self-learning, teachers' guidance and learning assistance are interconnected, and inside and outside the classroom circulate each other, prompting students to change from "wanting me to learn" to "I want to learn".

(3) Innovation of teaching evaluation system

Break the previous evaluation method which is mainly based on the scores of the final examination, and build an evaluation system which is mainly based on process evaluation and supplemented by result evaluation. Form a "3+1" course evaluation system of "before + during + after class" + final, pay more attention to the evaluation of students' learning process, and fully stimulate students' learning potential.

References

- [1] Chen Yi. Research on the design and application of flipped classroom teaching based on blended learning [D]. Central China Normal University, 2014.
- [2] Zhao Xinglong. Knowledge internalization process and teaching mode design in flipped classroom[J]. Modern Distance Education Research, 2014(03).
- [3] Miao Jingmin, Wang Qiong. Flipped classroom in colleges and universities: status quo, effectiveness and challenges - a survey based on practicing frontline teachers[J]. Open Education Research, 2015(10).
- [4] Wang Xing, Xu Ying. Construction mode and operation logic of flipped classroom teaching space under the background of "Internet+"[J]. Heilongjiang Higher Education Research, 2022(02).
- [5] Wang Juan. How to Deal with the Relationship among Educational Technology, Instructional Design and Time Management in the Flipped Classroom--The Inspiration of American Classroom Teaching Reform[J]. Overseas English, 2021(11).