

Research on the Construction of Virtual Teaching and Research Center of Computer Basic Course

Pingshui Wang¹, Tao Chen²

¹School of Management Science and Engineering, Anhui University of Finance & Economics, Bengbu, China

²School of Management Science and Engineering, Anhui University of Finance & Economics, Bengbu, China

Corresponding Author: Pingshui Wang

Abstract

The “online & offline” teaching research centers is a new paradigm for the development of teaching organizations and teacher training in colleges and universities. It is of great significance to improve teaching quality and academic level of teaching research. Based on the summary of the “Computer Basic Course” teaching research innovation cases, this article discusses the theoretical basis and engineering design ideas for further developing a Virtual Teaching research center, making an attempt in applying the form and methodology of modular expression. It proposes a “dual instructor teaching” model of deep school-enterprise partnership and advocates turning practical problems encountered by course teaching into research-based learning projects to improve, continuously, the level of intelligence of network platforms and resource databases via collaborative innovation of teacher-student teams across universities in order to cultivate innovative multi-disciplinary talents specialized in deep integration of technology, education and various professional knowledge and skills.

Keywords: Computer basic course, Virtual Teaching research center, Collaborative innovation.

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I. INTRODUCTION

Published in July 2021, the Ministry of Education higher education department notice construction work of the pilot implementation of Virtual Teaching and research section, the first 400 or so to recommend the Virtual Teaching and research section to pilot construction, expected by 3 to 5 years of efforts, built the national higher education information platform of Virtual Teaching and research section, the construction of a batch of advanced idea and comprehensive coverage, fully functional Virtual Teaching and research section, by building online Virtual Teaching and Research Centers across schools and industries, creating a number of high-level university teaching teams, cultivating teaching research and practice results, building teaching development communities and teaching communities for teachers, sharing high-quality educational resources, and comprehensively improving the teaching ability of university teachers. Under the background of this trend, Virtual Teaching and Research Center, as an innovative teaching organization form, has received more and more attention from domestic universities and colleges, and has begun to actively build a multi-school joint talent training model. Under the background of computer basic course construction, this paper adopts the innovative teaching model of “online and offline hybrid” to build a Virtual Teaching and research platform of computer basic course with multi-school alliance and school-enterprise cooperation, and explores the background, significance and role of establishing Virtual Teaching and Research Center, as well as the implementation path of how to coordinate teaching and research. How to play an effective auxiliary and supporting role in the construction of computer basic course teachers and improve the quality of course teaching.

II. CURRENT SITUATION OF COMPUTER BASIC COURSE TEACHING

The computer basic course is practical, and its teaching mode must attach importance to practical teaching. However, there are many problems in the teaching of basic computer courses in many universities at present.

2.1 The traditional teaching concept lags behind: learning and using disjointed

The concept of practice education is lacking, and the deep integration of theory teaching and practice teaching is lacking. The computer basic course adopts the traditional teaching, often emphasizes the theory teaching, ignores the real value of the course, makes the learning and use disjoint.

2.2 Lack of innovation in teaching mode

In most colleges and universities, basic computer course teaching is still the traditional teaching method of single infusion modes, the prevalence of class status is a teacher has been teaching the whole lesson, flat

distress, students lack to interact with teachers, students' lack of discussions between the communication, the majority of students' miss class, playing mobile phone, etc., the teaching effect is poorer.

2.3 Lack of collaborative teaching and research community

Individual teachers have limitations in professional knowledge, teaching means and teaching cognition. The resources of a school are also limited, and the traditional grassroots teaching organizations often cannot provide more teaching methods to help teachers of basic computer courses, and share the latest teaching ideas and teaching models. It is necessary to build a teacher development community, organize teachers of basic computer courses to carry out collaborative teaching and research, and focus on real teaching commonalities and forward-looking issues through cross-school and school-enterprise cooperation, so as to build a first-class teaching team and improve teaching quality.

III. CONSTRUCT THE VIRTUAL TEACHING AND RESEARCH CENTER OF CROSS-SCHOOL AND UNIVERSITY-ENTERPRISE COOPERATION OF COMPUTER BASIC COURSES

In view of the need for teachers' development community to cooperate in teaching and research, it is of great significance to establish a Virtual Teaching and Research Center for cross-school and school-enterprise cooperation of computer basic course under the policy guidance of the Higher Education Department of the Ministry of Education.

3.1 The background and significance of the construction of Virtual Teaching and Research Center

According to the spirit of the report to the 19th National Congress of the Communist Party of China, the basic project for the great rejuvenation of the Chinese nation is to build a strong country in education. The Ministry of Education has also issued several papers focusing on the establishment of high-quality professional college teachers. The Ministry of Education has made great efforts to promote undergraduate teaching in colleges and universities. Taking the construction of majors and courses as the dual focus, it has issued the "Project Twenty Thousand" to build about 10,000 national first-class undergraduate specialized points and about 10,000 provincial first-class undergraduate specialized points. About 10,000 national first-class courses and 10,000 provincial first-class courses will be established. In order to further deepen the reform of the undergraduate education and teaching, explore new forms, new forms of the teaching and research at the grass-roots level, in 2021, the Ministry of Education issued the notice construction work of the pilot implementation of Virtual Teaching and research section, requirements based on information technology construction of Virtual Teaching and research section, collaborative teaching research, proposed the construction of more than 400 Virtual Teaching and research section the goal of the pilot. The Virtual Teaching and Research Center of the new form of cooperative teaching and research of basic teaching and research organizations came into being. Through cross-school joint creation of online Virtual Teaching and Research Center, forging a number of high-level university teaching teams, building teachers' teaching development community, teaching community, cross-school sharing of quality education resources, and comprehensively improving the teaching ability of university teachers. Virtual Teaching and Research Center has become an innovative teaching and research method, which promotes the professional development of teachers.

3.2 The connotation definition of Virtual Teaching and Research Center

Virtual Teaching and Research Center is different from the traditional entity of basic teaching organization Teaching and Research Center, is virtual, break the space limitation. Teachers with the same teaching feelings form a Virtual Teaching and research section, which can be formed across schools and regions. The common goal is to solve problems such as teaching and research, research topics and academic frontiers. We use online technology to discuss and conduct activities together, just like a teaching and research section in form. This new type of Virtual Teaching and Research Center is very beneficial to the teaching and research activities of colleges and universities, which is conducive to the professional development of teachers and the improvement of teaching quality.

3.2.1 Virtual Teaching and Research Center is an innovative form of grassroots teaching organization

The Virtual Teaching and Research Center is different from the traditional Teaching and Research Center, which builds an online teaching and discussion group, online communication, exchange and co-creation. Online teaching and research activities are normal, actively co-create, output sharing.

3.2.2 Virtual Teaching and Research Center is a collaborative teaching academic community

The basis of teaching academic community and education teaching community is that the participating teachers must be front-line teachers with deep love for teaching and deep teaching enthusiasm, and aim to create, share

and promote the development of teaching together. The participating teachers in the Virtual Teaching and Research Center must be based on their common love for education and teaching, hoping to actively and constantly update their teaching majors, innovate teaching methods, and jointly explore the teaching plans and syllabus of a certain course, so as to improve the academic level of teaching.

3.3 The function of Virtual Teaching and Research Center of Computer Basic Course

The purpose of constructing Virtual Teaching and Research Center of computer basic course is to improve the teaching quality of teachers and cultivate applied talents. Explore the establishment of "co-construction, sharing, win-win" cross-school, cross-professional Virtual Teaching and Research Center. It has the following advantages.

(1) Multi-school joint teaching and research promotes the balance of educational resources and teaching reform, improves the teaching quality and teaching level of basic computer courses, and is conducive to the successful application of first-class courses.

(2) Improve teachers' teaching competence. Organize online teaching and research activities, and the famous teachers of computer foundation courses from multiple schools participate in the development of training programs, curriculum Outlines, teaching objectives, teaching methods, teaching evaluation, etc.

(3) The effective supplement of the grassroots teaching organization in the school. As a teaching community, the Virtual Teaching and Research Center is helpful to update educational ideas, improve teaching methods, and complement each other's advantages.

(4) Form a teaching and research model that can be promoted in and out of school, and apply for provincial Virtual Teaching and Research Center in the future. Although the pilot quota of the planned national Virtual Teaching and Research Center is limited, the concept of sharing and co-creating teaching like the Virtual Teaching and Research Center is like a spark of fire, which has the potential to start a fire. Teachers in ordinary local universities can actively form an informal multi-school joint Virtual Teaching and research community.

(5) Encourage school-enterprise cooperation. In addition to encouraging teachers to form cross-school teaching teams, the Virtual Teaching and Research Center also encourages school-enterprise cooperation. Teachers of specialized courses and enterprise experts work together to teach, research and teach.

3.4 Implementation path of collaborative teaching and research of Virtual Teaching and Research Center of Computer Basic Course

(1) Set up a cross-school teaching and research team for computer basic courses. Unite with different universities to build a cross-school Virtual Teaching and research division of computer basic course famous teachers team. Famous teachers include professional teachers of computer basic courses and enterprise experts from various schools. They build teams based on the Virtual Teaching and research office platform, guide cross-school and cross-industry teachers to join the Virtual Teaching and research office, and make them gain a sense of accomplishment and belonging in the teaching community, and actively participate in collaborative teaching and research.

(2) Construction of Virtual Teaching and Research Center platform for computer basic courses. Virtual Teaching and research center can carry out collaborative teaching and research activities by means of video conference, voice conference and so on.

(3) Collaborative teaching and research of Virtual Teaching and Research Center of Computer Basic Course. Implement the computer foundation course team to carry out cross-school teaching and research activities and teaching and research exchanges, carry out curriculum system design, evaluation system innovation, etc., to create advanced teaching methods. Jointly build and share teaching and scientific research resources to build a high-quality teaching resource library for computer basic courses and a resource library for ideological and political courses, promote smart education to realize cross-school online real-time classroom teaching, and extend classroom teaching time and capacity.

(4) Joint contribution and sharing mechanism construction. The organization form and operation system of Virtual Teaching and research office should be established, including co-construction and sharing mechanism and teaching and research collaboration mechanism of participating teachers. Teachers in the Virtual Teaching and Research Center need to have the mind to create and share, and open their resources free of charge as much as possible.

(5) Form a Virtual Teaching and Research Center paradigm that can be extended. It provides a Virtual Teaching and Research Center paradigm for computer basic courses and other disciplines.

IV. CONCLUSION

In brief, the Virtual Teaching and Research Center is a new type of teaching organization, make up the limitation of traditional teaching and research center of academic teaching, break the barriers between the school and school, to encourage teachers of different schools, industry and the related personnel, research focused on

the common teaching academic issues, promote cross-university, university-enterprise cooperation, formed an academic teaching community, relying on first-class professional construction, course construction, To co-create teaching and enhance the professional degree of teachers. To the computer basic courses teaching difficulties at present, and to explore teaching mode based on "online hybrid" innovation, build school union, university-enterprise cooperation under the collaborative research virtual computer foundation course teaching and research center, is to leap to the concept of traditional teaching research innovation, innovation, the innovation of teaching research demonstration effect. The construction of Virtual Teaching and Research Center of computer basic course can stimulate more front-line teachers to participate in similar innovative teaching and research communities or communities.

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REFERENCES

- [1]. Z. Z. Hong. "Evolution and Reconstruction of grassroots Teaching and Research Offices in Universities", *University Education Science*, no.3, pp.86-92, 2016.
- [2]. J. Y. Guo and Z. L. Lu, "Reflections on the construction of basic teaching organization in local undergraduate colleges under the background of transformation", *Journal of changshu institute of technology*, vol. 32, no.6, pp.77-79, 2018.
- [3]. X. Q. Liu and Q. Z. He, "Reconstruction of teaching and research centers: Teaching quality construction strategy in colleges and universities from the perspective of teaching organization Reform", *Research of Higher Education*, no.10 pp.57-60, 2020.
- [4]. J. C. Zeng, S. Q. Wu and C. X. Zhang, "Virtual Teaching and research centers: Innovation and exploration of teaching and research organization at basic level in colleges and universities", *China University Teaching*, no.11 pp.64-69, 2020.
- [5]. J. Wang, M. L. Dong and X. P. Lou, "Multi-school joint Virtual Teaching and research platform construction", *Digital technology and application*, vol. 37, no. 8, pp. 224-225, 2019.
- [6]. J. C. Zeng, S. Q. Wu and C. X. Zhang. "Virtual Teaching and Research Office: Innovation Exploration of grassroots Teaching and research organizations in universities", *China University Teaching*, no.11, pp.64-69, 2020.