Research on the Hybrid First-rate Course Construction Mode in 5G Era

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Abstract. This paper analyses the background of the construction of first-rate courses. It can be seen that the blended first-rate courses are the most important part of the curriculum construction, so it is necessary to conduct in-depth research on them. But the existing research results can’t meet the need of the construction of hybrid first-class curriculum in 5g era, in this case, we contrast state of first-rate courses of macroscopic standard and the construction of excellent courses, and then put forward the realization of high order, innovative and challenges of hybrid first-rate course construction mode and three aspects of the school curriculum constructions combining with the actual situation. In order to pass the "6 + 3” hybrid first-rate research course construction mode, hybrid first-rate course construction mode can provide reference for counterparts.

1. Background analysis of the construction of hybrid first-rate courses
In 2018, the ministry of education decided to implement the "Twenty Thousand Plan" for first-rate courses, that is, it plans to build 10,000 national and 10,000 provincial first-rate online and offline quality courses by 2020 [1]. In November 2019, the Implementation Opinions of Ministry of Education on the Construction of First-rate Undergraduate Course, from 2019 to 2021, we should complete about 4000 national first-rate online courses and offline courses, about 6000 national first-rate online and offline hybrid courses, around 1500 national first-rate virtual simulation experiment teaching course, and 1000 national social practice about first-rate courses work [2].The proportion of first-rate online and offline hybrid courses of these five courses is the largest, so it is necessary to make an in-depth study on their construction mode. The first-rate course, also known as the golden course, has the standard of "two characters and one degree ", which refers to high-level, innovative and challenging degree [3]. The high-level refers to the organic integration of knowledge ability and quality, which cultivates students' comprehensive ability to solve complex problems and advanced thinking. Innovation means that the content of the course reflects the leading edge and epochal characters, the teaching form reflects the advancement and interactivity, and the learning results are exploratory and personalized. The degree of challenge refers to the degree of difficulty of the course, which needs to jump before it can be obtained. Teacher’s course preparation and student’s study after rate also have higher requirements.Nowadays, governments only provide a macroscopic standard for the first-rate course rather than a detailed construction standard. Considering its macroscopic standards and national construction requirements of excellent course, I think that...
high-level can be achieved mainly through the excellent teacher staff construction and teaching methods. And innovation is mainly implemented through the development of first-rate educational technologies and the construction of first-rate teaching contents. Lastly, challenge degrees mainly achieve through first-rate textbook compilation and teaching management.

Figure1. Structure diagram of hybrid first-rate course construction mode

2. Literature review of hybrid first-rate courses
In recent years, researchers began to study on construction of first-rate courses, such as Thinking and Practice of First-rate Course Construction -- A Case Study of the Course Construction of International Economics in Anhui University of Finance and Economics published by Zhang Ruqing, which analyses the meaning of the first-rate course and the thought of the construction. This paper expounds the present situation of the first-rate "international economics" course construction in Anhui university of finance and economics, and connecting with the problems existing in the construction process, put forward the main measures should be taken in the construction of subsequent [4]. Li Yong et al published the Use of Information Technology to Build A Hybrid Gold Curriculum- Accounting Comprehensive Practice Curriculum, for example. It analyzes the teaching present situation, characteristics and existing problems of "comprehensive accounting training curriculum", and explores how to make full use of information technology means to assist in teaching. What’s more, it continuously optimize curriculum resources of "comprehensive accounting training", from the aspects of teaching materials, teachers, teaching three optimization measures, to provide a reference for the related researchers [5]. Zhang Yiyang published the Research on the Innovation of College English Deep Fusion And Hybrid Gold Curriculum Based on SPO, which analyses the connotation of SPO and application status quo. It combines SPOC theory and platform, designs online courses and offline rate activities, perfects the curriculum evaluation system, and realizes effective innovation of college English gold curriculum, to meet the deep fusion hybrid teaching development needs of gold course [6]. Qili published Research on the Mixed Online and Offline Golden Curriculum Teaching Mode of Entrepreneurship Education in MOOC Era based on the course for constructing the entrepreneurship education online and offline hybrid gold course. This paper analyzes the changes of the online and offline hybrid gold course teaching mode of entrepreneurship education from the aspects of teaching objectives, curriculum setting and evaluation methods, in order to deepen the entrepreneurship education teaching reform, and provide the country with talents for innovation and entrepreneurship [7].

We can see that these articles may not combine with the construction characteristics of the 5G era.
and ignore to connect technological advantages of the 5G era and the construction of first-rate courses. Or it doesn't use 5G relevant technical means; or only use online and offline hybrid course construction supported by SPOC technology; or only use MOOC to support the construction of online and offline hybrid first-rate courses. Based on the above analysis, it is necessary to study and propose the construction mode of online and offline hybrid first-rate course construction with characteristic of 5G era.

3. Hybrid first-rate course construction mode

3.1 High-level can be achieved mainly through the excellent teacher staff construction and teaching methods

A first-rate teaching team is the key. In the course of first-rate curriculum construction, all kinds of new teaching ideas, new contents, new technologies and new teaching means need to be designed by teachers and applied to the actual teaching process. The actual effect of teaching depends on how teachers teach. The same teaching content varies with teachers' teaching philosophy, teaching methods, teaching means, teaching art, language skills, and personality charm. Teachers are the key to the cultivation of talents and the improvement of teaching quality. As Mei Yiqi, President of Tsinghua university, famously said, "the so-called great scholars are not those who have buildings, but also those who have masters", which indicates the key position of teachers in universities. Especially in 5G era, it demands students to cultivate comprehensive ability to solve complex problems and advanced thinking, which puts forward higher requirements for the teacher team. Therefore, the construction of first-rate courses requires the support of a high-level and international teaching team, which is the key to the construction of first-rate courses.

Teaching method is the means of imparting teaching contents. The first-rate teaching method can teach according to one's aptitude, and teach through fun. The use of scientific and appropriate teaching methods can greatly increase the teaching capacity, significantly improve the quality of teaching, and achieve first-rate teaching results. Using the teaching method combining theoretical teaching and design case teaching, heuristic, interactive and various teaching methods are paying attention to students as the center to establish new relationship of teaching and learning and students' critical thinking, ability to cooperate, complex problem solving ability, the cultivation of advanced thinking. Building teaching organization mode which reflecting the information technology and education teaching depth. The allocation of resources and the evaluation method is reasonable. In this way, the design is suitable for online and offline hybrid teaching methods.

3.2 Innovation is mainly implemented through the development of first-rate educational technologies and the construction of first-rate teaching contents.

First-rate educational technology is the support. In the 5G era, education technologies are more abundant, and the MOOC+SPOC combined online and offline teaching mode is gradually becoming a trend of teaching reform. Fully excavate potential of modern education technology. The teaching mode use holographic projection teaching, panoramic video teaching, tactility, VR/AR, virtual simulation teaching and various teaching methods with 5G characteristic. And the teaching content is imparted to students through images, sound, video, touch and other media. In this way, it can stimulate students' interest in studying, improve the students' learning enthusiasm. And it is conducive to the cultivation of students' self-learning ability, practical ability, problem analysis, problem solving and innovation ability, as well as the improvement of students' personalized development and exploratory ability.

First rate content is the foundation. Teaching content refers to the materials and information that interact with teachers and students in the teaching process, serve the teaching purpose and generate dynamically. The first-rate teaching content should be systematic, scientific, cutting-edge and innovative, which is the foundation of the first-rate curriculum construction. On the design of the teaching content, to ensure system under the premise of theoretical study, give full consideration to
cultivate students' ability to analyze the field complex problematic. Advancing with The times according to the latest development of disciplines, help students absorb the latest research achievements of this field and frontier theory knowledge thoroughly. The teaching mode can reflect the practice of the latest trends in time, and then continuously updated, adjustment and dynamic optimization of teaching contents, to make it fully embodies scientific, advanced, forward-looking, innovative, and reflects the characteristics of 5G era. Therefore, first-rate teaching content provides materials and information for cultivating students' advanced thinking ability for first-rate courses, which is the foundation of first-rate course construction.

3.3 Challenge degrees mainly achieve through first-rate textbook compilation and teaching management.

First-rate textbooks are the basis. First-rate university in the world, or the first-rate discipline, there are a number of related to the subject feature and have a certain depth of the teaching material. And teaching material must reflect the latest progress in related disciplines teaching and scientific research, and the new requirements of economic and social development and scientific and technological development on talent training. Comprehensively and accurately elaborate the basic theory, basic knowledge, basic methods and academic system of the discipline and specialty. What’s more, they should also highly reflect the university teachers' level, subject advantages and professional characteristics. This is an important way to promote the teaching quality, as the important carrier of knowledge. The quality of college textbooks directly affects the effect of teachers' preaching, imparting knowledge and solving problems, and also affects the cognition and interest of college students in the subject, as well as their mastery and application of the subject knowledge. In order to maintain the leading edge and advancement of the textbook, and have a certain degree of challenge, it is necessary to adjust and revise the curriculum in time. We should keep pace with the times and develop first-rate textbook systems such as textbooks, courseware, test question Banks and case Banks that are compatible with the 5G era.

First-rate teaching management is the guarantee. Teaching management not only includes the management of students' learning, but also includes the management of teachers of first-rate curriculum construction. Students learn first-rate courses to meet the requirement of jumping to have, which requires the management of the corresponding management measures, for example in learning this course, putting forward higher requirements to the students, can be used in the repairing management system, which can guide students to study hard, improve learning depth, and in order to cooperate with the construction of first-rate courses. For the management of teachers, a post responsibility system corresponding to the curriculum construction should be established so that all teachers of the curriculum team can effectively fulfill the corresponding construction responsibilities. It is necessary to establish the teacher appointment system and incentive mechanism, and implement two-way incentive for teachers participating in the construction in the aspects of teaching reform and teaching work. It is necessary to establish a multiple evaluation system of teaching effect, including student evaluation, peer evaluation and expert evaluation.

4. Quality assurance measures for hybrid first-rate course construction

4.1 Grasp the key, improve teachers' teaching ability.

Improve teachers' teaching ability. To promote the modern teaching ability and the construction of online and offline hybrid first-rate courses, the university this year comprehensive upgrade the original "best teacher" campaign, and carry out the integration of "training, competition and observation" classroom teaching ability promotion activities. The training, competition and observation will be effectively integrated, forming a linkage mechanism between colleges and universities, and strengthening the competition concept of "promoting training by competition, promoting observation by competition". And start "Blackboard mobile teaching application" and other special teacher training.
Enhance international teaching ability. In order to improve the international education and teaching level of our teachers, the university promotes the cooperation with colleges and universities in the United States, Britain, Canada, Australia and other major English-speaking countries to build the "overseas research base for international teachers of Guangdong University of Finance and Economics". And university will send training teachers according to the principle of "priority", "assurance", and "must". "priority" refers to send outstanding young and middle-aged backbone teachers, "assurance" refers to academic leaders, professional leaders and course leaders, "must" refer to the teachers who are responsible for the teaching tasks of Chinese-foreign cooperatively-run schools, Chinese-foreign talent training experimental classes and international students. So far, a total of 151 teachers of major course construction have been sent to the training base for training and returned to China to offer all-English or bilingual courses with the aim of improving teachers' international teaching ability.

4.2 Rich means to realize teaching method innovation

Adopt a variety of teaching methods. In addition to the traditional teaching mode, teachers can use new technology in collaborative interaction teaching, according to pre-rate comprehensive evaluation to group with the principle of excellent with bad and common progress. Excellent with bad is that the students with the best comprehensive evaluation and the students with the worst evaluation were divided into a group, and the students with the second highest evaluation and the students with the second lowest evaluation were divided into a group, and so on, a natural rate divided into groups of 6 to 8. Then, face to face interaction was conducted in the group under the teacher's organization to solve the problems encountered by each group in the preparation process, so as to inspire each other and make concerted progress. Finally, some problems that cannot be solved within the group and contents that need to be explained by teachers should be pushed to teachers through the network in time. This process is recorded by HDC supported by 5G and sent to the cloud server, where team members can call to view it at any time.

Adopt new educational technologies. Explore immersive teaching and use 5G cloud and AR technology to create a new teaching experience. Teachers understand the students' learning difficulties through teaching support system. Combining with the key difficulty of the course teaching, teachers organize learning by wearing a lightweight AR glasses terminal for virtual course. At the same time, the Cloud’s powerful computing power realize the operation, rendering, display and control of the AR application, and real-time AR images are transmitted to the terminal via 5G network. So as to complete the virtual experiments, objects dismantling, such as learning, to cultivate students' innovative spirit and practical ability, and make the course more interesting and achieve good teaching effect. Holographic teaching exploration is with the school teacher's classroom teaching synchronization, which introduce 5G remote holographic projection into the classroom of famous teachers from famous universities. It can make natural interactive distance learning experience that don't change the traditional teaching habits, to make both teachers and students realize the long distance interaction in the classroom, and beyond time and space, innovative use of classroom teaching. This is the key for the students to expand their horizons, introduce famous teachers and improve the quality of teaching.

4.3 Lay the foundation to ensure that the teaching content has the characteristics of 5G era.

Long teaching and research, to ensure the teaching content of the frontier and advanced. For the key disciplines and courses of economics and management law of our school, the key training and policy incline to this kind of courses. And our university concentrates on supporting research projects that include cutting-edge content in this direction, including research projects and teaching and research projects. The research projects are the forefront research of the university's key disciplines, with no more than 12 funded projects per year. New teaching contents are enriched according to the party's theoretical innovation achievements, the latest breakthroughs in science and technology, and the latest progress in academic research. Teaching and research projects are mainly school-level and
province-level teaching and research reform projects, which are aimed at digging into the school's advantages in major construction, curriculum system, teaching resources, quality assurance and other aspects, further strengthening the characteristics of running schools, and focusing on supporting the teaching content remodeling of key disciplines of the school.

Develop the teaching content that develops synchronously with information technology. 5G era has come, and the corresponding teaching resources supported by 5G communication technology are rich, including panoramic immersive video, VR/AR immersive teaching resources, somatology teaching resources, DH pictures, 8K video resources, virtual simulation teaching resources and so on. The school builds a large number of teaching contents based on the national virtual simulation teaching experiment center to meet the teaching needs of 5G era.

5. Conclusion
Through theoretical analysis and combined with the feature of 5G era, we think that the country has put forward macroscopic standards including high-level, innovative, challenge degrees. They can be achieved by six dimensions, namely the first-rate teacher team construction, first-rate teaching method design, first-rate education technology development, first-rate teaching content construction, first-rate teaching material writing and first-rate teaching management. And then, the mode is secured by grasping the key, enriching means and laying the foundation. With the combination of six dimensions and three guarantees, the "6+3" mode will be able to complete the construction of hybrid first-rate courses. 5G technology has just started, and the construction of national first-rate courses is also under exploration. Next, the research team will apply the proposed "6+3" mode to the construction of hybrid first-rate courses, and optimize the construction mode, thus providing a common construction model for other universities.

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