

Internal causes, difficulties and breakthrough paths of implementing classroom revolution in Applied Undergraduate Colleges and Universities

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Abstract. “Classroom revolution” is a comprehensive reform of the traditional classroom from the aspects of teaching methods, teaching contents, teaching means and teaching evaluation. It is the internal requirement of establishing a modern classroom teaching model and the inevitable trend of the development of modern educational technology. In practice, the implementation of the “classroom revolution” confronts difficulties and dilemmas in Applied Undergraduate Colleges and Universities. Starting from the exploration of the implementation background and practical significance of the “classroom revolution”, this study deeply analyzes the necessity of the “classroom revolution” in Colleges and universities, puts forward some methods and paths to break through the difficulties from the aspects of top-level design, teachers’ ability and consciousness, work incentive mechanism in view of the practical problems existing, and gives the specific methods of reform practice according to the practical requirement. Through this path, the goal of improving classroom value has been guaranteed.

Keywords: Applied undergraduate; classroom revolution; teaching reform; Teaching innovation; Teaching informatization.

1. Introduction

Since ancient times, people have used “one piece of chalk, three feet Podium” to incisively describe the working model of the teaching profession, setting off the ordinary and greatness of the teaching profession. In the era of “Internet plus education”, chalk, platform and blackboard are constantly changing in the trend of the revolution of science and technology. The original refined description cannot accurately express the way teachers work. Modern educational technology has brought forth a new revolution in the field of education and teaching.

In September 2017, Chen Baosheng, then Minister of education, wrote an article in the People’s daily, sounding the horn of “classroom revolution”. In September 2018, the Ministry of Education published comments on accelerating the development of high-level undergraduate education and thoroughly enhancing talent training capability, requiring colleges and universities to push the classroom teaching revolution. Implement flipped classroom and mixed teaching, create a teaching model that combines online and offline, constantly improve teaching methods, improve assessment methods, actively guide students to self-management and active learning, and improve their autonomous learning ability and innovation ability through teaching reform [1].

The goal of the “classroom revolution” is to transform the traditional classroom, create a modern classroom, and create a new teaching field, teaching paradigm, learning paradigm, teacher-student interaction, and teaching environment. The objective of China’s University Classroom revolution at this point is to break through the central role of teaching materials and promote students’ habits of self-directed learning [2]. The “classroom revolution’s” purpose is to improve the effectiveness of

teaching and the quality of talent training. Teachers should reform the previous teaching mode in all aspects, including teaching techniques, teaching content, teaching materials, and evaluation methods, which is not only an unavoidable trend of modern educational technology development, but also an internal requirement of promoting the “four returns.” The essential mission of building morals and nurturing people, as well as cultivating socialism builders and successors with all-around development of morality, intelligence, physique, beauty, and work, is critical.

2. Internal Causes and Necessity of Implementing “Classroom Revolution”

2.1 From the National Level, Carrying Out “Classroom Revolution” is the Internal Requirement of Realizing the Great Rejuvenation of the Chinese Nation.

Today’s world is undergoing great changes that have not been seen in a century. Profound changes are taking place in the international pattern and international system. A new round of global scientific and technological revolution and industrial reform is in the ascendant. Scientific and technological innovation is accelerating the deep integration of various industries and becoming the leading force in reshaping the world pattern and creating the future of mankind. China is in a critical period of realizing the great rejuvenation of the Chinese nation.

We should not only guard against various risks, but also deal with many challenges. Talents are the crucial decisive factor. At the beginning of 2019, the State Council issued China’s educational modernization 2035 (hereinafter referred to as “educational modernization 2035”), which put forward clear requirements for the implementation of educational modernization and accelerating the reform of information education [3].

Under the severe international and domestic situation, colleges and universities should unswervingly implement the strategy of rejuvenating the country through science and education and the strategy of strengthening the country with talents, make full use of modern technology, accelerating the reform of teaching mode, innovating talent training mechanism, implement heuristic, exploratory, participatory and cooperative teaching methods, cultivate students’ innovative spirit and practical ability, and vigorously cultivate a number of skilled talents with both political integrity and ability, so as to build a modern socialist country in an all-round way, Provide talent support for realizing the Chinese dream of the great rejuvenation of the Chinese nation.

2.2 From the Perspective of Society, Carrying Out “Classroom Revolution” is An Inevitable Requirement for Talent Ability and Quality in Modern Society.

On the one hand, a new round of scientific and technological revolution and industrial reform is reconstructing the global innovation landscape and reshaping the global economic structure. Emerging technologies with informatization, automation and intelligence as the core are rapidly integrated into the production and management system of all walks of life, which has an unprecedented impact on the global supply chain, industrial chain and value chain. All walks of life have put forward new requirements for the quantity and quality of highly skilled talents. The reality is that there are essential differences between enterprise production practice and school teaching and training. As the main output unit of highly skilled talents, colleges and universities do not have a clear understanding of the standards of skilled talents required for the development of enterprises and industries. In the process of talent training, the teaching contents, teaching methods and teaching conditions of the school cannot seamlessly connect with the talent training specifications required by the enterprise. The professional skills and practical ability of graduates cannot well meet the production needs of the enterprise, and there is a phenomenon that the school teaching is divorced from the needs of the enterprise.

On the other hand, although some graduates have certain professional abilities, they lack the spirit of innovation, professionalism and feelings of family and country, and even have distorted values and poor moral character, which is contrary to the spirit of enterprises advocating practical work, innovation and dedication, and their distorted outlook on life and values are despised by the

society. This is the result that some teachers do not pay attention to ideological and political education and the cultivation of innovative thinking in the process of classroom teaching. In the teaching process, the implementation of curriculum thinking and politics, the cultivation of students' correct value orientation, the combination of professional education and innovation and entrepreneurship education, and the improvement of students' ability to use professional knowledge to carry out innovation and entrepreneurship are the inevitable requirements of social development for classroom teaching reform in colleges and universities.

2.3 From the School Level, Carrying Out “Classroom Revolution” is the Inevitable Trend of the Integration and Development of Modern Educational Technology and School Teaching.

In terms of teaching media, multimedia teaching is the mainstream teaching method in colleges and universities. With the development of modern educational technology, advanced multimedia equipment has gradually replaced the teaching function of the blackboard. Some teachers even use multimedia equipment for blackboard writing. Blackboard and chalk are no longer indispensable teaching tools; In terms of teaching organization, with the development of Internet technology, classroom teaching is no longer confined to the old form of teachers' one speech. Some teachers have integrated learning methods such as autonomous learning, cooperative learning and group discussion with classroom teaching, and achieved good results. Especially after the outbreak of COVID-19 in 2020, online education has been popularized rapidly. All kinds of schools across the country have completed the goal of stopping classes without stopping learning through online teaching. Online teaching is no longer an unreachable new gadget. Colleges and universities have accelerated the pace of online teaching reform, and the application of e-learning platforms has been popular among [4]. In terms of teaching content, the traditional classroom is dominated by teachers, and teachers organize teaching with teaching materials as the center. Even if students have personality differences, the teaching content remains unchanged, and it is difficult to teach students in accordance with their aptitude. The phenomenon of cramming and filling the classroom in the teaching process is very common. Passive learning makes students have no time to think and reflect, and it is difficult to improve students' self-study ability, innovative consciousness and practical ability.

At present, the application of the Internet plus education is more and more extensive, the speed of teaching content updating and iteration is quickening, and the channels for students to acquire knowledge are wider and wider. The traditional classroom teaching centered on teaching materials can no longer satisfy the students' personalized learning requirements. The teaching style of spoon-feeding and full class irrigation is also very difficult to arouse students' interest in learning. Mobile phones and sleeping in class are common and the teaching effect is poor. It is impossible to achieve the training goal of students' comprehensive and coordinated development of personality. In order to promote the in-depth integration of information technology and education and effectively promote curriculum reform and innovation, the Ministry of Education issued the implementation opinions on the construction of first-class undergraduate courses, which proposed to build first-class undergraduate courses to meet the requirements of the new era, so as to make the courses better, teachers stronger, students busy, strict management and practical results, so as to form a first-class undergraduate course system with Chinese characteristics and world-class level [5].

3. Practical dilemma of implementing “classroom revolution”

Applied undergraduate colleges and universities are the backbones of China's higher education and the main body of undergraduate education. Applied undergraduate teaching should highlight the cultivation of applied talents, face the local economic and industrial structure, and improve students' ability to serve the local economic and social development [6]. Most Application-oriented Undergraduate Colleges and universities are newly-built undergraduate colleges and universities

(Undergraduate Colleges and universities approved by the Ministry of education after 2000) [7]. Affected by the school's historical evolution, school running conditions and management system, many colleges and universities have a great voice in classroom teaching reform, but the reform effect is unsatisfactory. The main difficulties, in reality, are as follows:

3.1 The School's Understanding of the Connotation of "Application-Oriented" is not in Place, Resulting in the Lack of Reform Foundation for "Classroom Revolution"

In 2015, the Ministry of Education issued the guiding opinions on guiding the transformation of some local ordinary undergraduate colleges and universities to application-oriented ones (JF [2015] No. 7), which clarified the ideas for the transformation of local undergraduate colleges and universities to application-oriented ones. Because there is no quantifiable implementation standard for the transformation to application-oriented, although many colleges and universities change their school running orientation to application-oriented, they do not have a good understanding of the connotation of "application-oriented", and there are deviations in the understanding of the training of application-oriented talents within the unit, resulting in the unclear direction of some curriculum teaching reform and the lack of basic conditions for teaching reform. For example, some colleges and universities have not implemented the requirements of application-oriented talent training into the talent training plan, reflected the new requirements of application-oriented ability teaching in the teaching and practice of core courses, and did not take necessary measures to optimize the structure of teachers and practical conditions, which cannot meet the requirements of application-oriented talent training for school running conditions. Some colleges and universities have long imitated the management mode of high-level research universities in teaching management and reform, resulting in the deviation of teaching work from the training path of applied talents, which cannot provide a good supportive environment for the "classroom revolution" of Applied Undergraduate Colleges and universities.

3.2 Lack of Scientific Teaching Evaluation Mechanism and Incentive Mechanism, and Lack of Motivation for Teachers to Respond to the "Classroom Revolution"

To begin with, the school's criterion for classroom teaching evaluation is based on the traditional classroom, which emphasizes rules and norms. It is not appropriate for the creative classroom that emphasizes personality, which stifles instructors' excitement for teaching reform; second, the school primarily uses examination results to measure students' learning effects, ignoring the process evaluation of teaching. Students and teachers inadvertently regard the test as the primary purpose of classroom instruction, ignoring the development of students' practical and innovative abilities. Third, developing classroom teaching methods necessitates teachers mastering additional teaching abilities, increasing the difficulty of instruction, and devoting more time and energy to studying teaching theory and skills. However, in many schools, the current teaching assessment system does not reflect the labor worth of teachers' teaching reform, and mobilizing teachers' passion for teaching innovation is difficult. To support the "classroom revolution," curriculum resources are critical. Teachers are insufficiently motivated to carry out teaching reform due to a lack of scientific evaluation and incentive mechanisms, resulting in poor sustainability of teaching resource construction. Many educational resources are of poor construction quality, have delayed content updates, and lack the value of popularization and application [8].

3.3 Teachers Lack Comprehensive Practical Ability and Can not Meet the New Requirements of "Classroom Revolution" on Teachers' Comprehensive Ability

3.3.1 The application ability of information technology is not strong.

In recent years, the rapid development of modern educational equipment has provided a good hardware foundation for education and teaching reform. Modern teaching facilities such as touch electronic whiteboard, nano all-in-one machine and smart classroom have been fully popularized. Its powerful teaching auxiliary function has greatly enriched the presentation of teaching content and made it possible for teachers to carry out the reform of teaching methods. Although there is

advanced teaching equipment, many teachers still use traditional teaching methods, take teaching materials as the center, and carry out cramming and full classroom teaching around PPT. They can't make full use of the advanced functions of the equipment to assist teaching, but just present the teaching PPT on a different screen. Teachers' information technology application ability is not strong, and they cannot effectively integrate information technology and subject teaching, which hinders the application and popularization of modern educational technology in classroom teaching to a certain extent.

During the first half of 2020, all types of schools around the country were required to use online learning. The teaching software was unfamiliar to many of the teachers. They lacked experience in both teaching and operational skills. During the educational process, numerous mishaps happened, and the teaching effect was unsatisfactory.

3.3.2 Lack of practical teaching ability.

The remarkable feature of applied talents is the word "application", and the core link of its cultivation is practical teaching, which requires teachers to have not only solid theoretical teaching ability, but also strong professional practice ability, so as to meet the diversified classroom teaching requirements required by the cultivation of applied talents.

The "classroom revolution" advocates the implementation of the flipped classroom and mixed teaching, and uses diversified teaching methods such as task-driven, case analysis and field research to guide students' autonomous learning. Its reform goal is essentially consistent with the teaching requirements of applied talent training. However, most college teachers go directly to the post of teacher after graduating from school, which has a good professional theoretical basis, but lacks rich experience in project practice. There are common problems of "being able to say but not to do" and "congenital deficiencies" in practical ability. Some works of literature have studied the "double qualified" teacher structure of six Applied Undergraduate Colleges and universities in Guangxi. The results show that the average proportion of "double qualified" teachers in the six colleges and universities is 22.3% [9]. Such a teacher structure cannot meet the requirements of the full implementation of the "classroom Revolution" on Teachers' ability.

In January 2021, the general office of the Ministry of Education issued the administrative measures for the establishment of undergraduate Vocational Education Specialty (for Trial Implementation), which put forward clear requirements for full-time teachers of undergraduate vocational education specialty, and stipulated that the proportion of "double qualified" teachers should not be less than 50% [10]. Although this index is not a provision made directly for application-oriented undergraduate colleges, it is a requirement for the cultivation of technical and skilled talents, which provides a very authoritative reference for the construction of "double qualified" teachers in application-oriented undergraduate colleges. Therefore, the demand for "double qualified" teachers in applied undergraduate colleges is extremely urgent.

3.4 The Utilitarian Tendency of Classroom Reform is Serious, and the Curriculum Construction Violates the Original Intention of Teaching Reform

Modern classroom has higher requirements for the presentation of teaching content, which requires teachers to innovate teaching design, integrate more information elements in content display and teaching interaction, and achieve the goal of enriching classroom teaching. To some extent, digital teaching resources are the basis of modern classroom teaching. In response to the call of the Ministry of education to eliminate "low-level courses" and create "golden courses", many colleges and universities have concentrated on the construction of "golden Courses", carried out the construction of digital teaching resources related to courses, and set some typical examples of curriculum teaching reform. However, due to the obvious assault tendency in the process of curriculum construction, the reform practice of teachers has only realized formal innovation, and the inherent teaching concept has not jumped out of the traditional teaching model. It still takes teaching materials as the center for knowledge explanation, and the teaching design is lack creativity. The developed micro class and Mu class are just video clips of traditional teaching, and

the teaching process is nothing new and cannot stimulate students' interest in learning [11]. This simple electronic approach to the traditional classroom ignores the problem of students' personalized development and does not reflect teaching students according to their aptitude. It is difficult to cultivate students' practical ability and innovation ability, which is contrary to the original intention of classroom reform.

4. Breakthrough path of “classroom revolution”

Through the above analysis, it can be concluded that the dilemma of “classroom revolution” in Applied Undergraduate Colleges and universities mainly has three problems: the first is the top-level design of the school, the second is the ability and consciousness of teachers, and the third is the work incentive mechanism. These problems need to be solved through reform. We should establish a problem-solving mechanism in work practice to realize the promotion of reform on teaching. The author believes that the “classroom revolution” should implement reforms in the areas of teaching activity space, classroom teaching content, teachers' teaching methods, students' learning forms, and teaching evaluation methods, constantly improve the efficiency and value of university classrooms, let students return to common sense, let teachers return to their duties, let schools return to their original intent, and let education return to their dreams, and acquaint students with common sense, teachers' teaching methods, students' learning forms, and teaching evaluation methods, and acquaint students. Following the author's research and practice, it is advised that the structure be strengthened in the following areas, with the following major breakthrough paths:

4.1 Do a Good Job in Top-Level Design, Clarify Work Ideas and Consolidate the Foundation of Reform

“Classroom revolution” is a systematic project of school reform and development. The school should deeply grasp the connotation and significance of the “classroom revolution”, take improving the effectiveness of classroom education as the starting point of the reform, do a good job in the top-level design related to the reform, formulate the teaching reform plan, clarify the ideas and objectives of the reform, support the resources related to the teaching reform, strengthen the teaching infrastructure, improve the classroom teaching environment and teaching practice conditions, and provide a good environment for the “classroom revolution” reform, It is suggested to focus on the following key links:

4.1.1 System Construction and incentive mechanism

We should improve the system construction and establish a scientific and effective incentive mechanism. “Classroom revolution” can not stay on the slogan, but “there are rules to follow and laws to follow”. We should issue the implementation plan of teaching reform, clarify the reform requirements, reform objectives and implementation path, modify and improve relevant rules and regulations and supporting documents, and escort the reform of “classroom revolution”; To evaluate teachers' work performance, we should strengthen the incentive and guidance for teaching innovation, establish a scientific and effective teaching performance evaluation mechanism, and integrate subjective student, peer, and supervisor evaluations of teachers' teaching effect with objective materials such as curriculum resource construction, teaching process activities, and curriculum evaluation results. Reform course assessment methods, strengthen ties between teaching process evaluation and summative evaluation, and create a varied assessment system that combines process and summative evaluation.

4.1.2 Talent Training Program and School Running.

Optimize the talent training program and highlight the orientation of application-oriented school running. The talent training plan should be set in combination with the school running orientation and professional talent training objectives, adhere to the student development as the center, market

demand as the guidance, pay attention to students' personalized needs and values education, and highlight the practical ability and innovation and entrepreneurship ability to cultivate applied talents. On the one hand, before formulating the talent training plan, we should fully carry out market research, invite excellent alumni, enterprises and industry experts to participate in the demonstration of the talent training plan, continuously optimize the curriculum according to the social ability demand for talents, and integrate the ideological and political elements of the curriculum; On the other hand, we should fully combine the "1 + X" certificate system, set up elective courses connecting academic certificates and several vocational skill level certificates, set the training direction of professional talents according to the talent training concept of "thick foundation, wide caliber, ability and innovation", appropriately increase the proportion of credits in practical teaching, effectively integrate innovation and entrepreneurship courses with professional courses, and straighten out the connection mechanism between the first classroom and the second classroom, Strengthen students' practical ability and innovation and entrepreneurship ability, and build a diversified talent training model.

4.1.3 Smart Teaching Platform.

To Build a smart teaching platform. "Classroom revolution" is the product of a new round of scientific and technological revolution and the new requirements of the rapid development of information technology for modern education. Building an intelligent teaching platform based on educational technology and information technology is a powerful measure to promote the in-depth development of the "classroom revolution". On the one hand, the intelligent teaching platform helps teachers implement diversified teaching methods such as flipped classroom and mixed teaching, and cultivate students' autonomous learning ability and practical ability; The teaching platform can quickly expand teaching content, increase learning interest, strengthen teaching management, provide a scientific basis for evaluating students' learning effect and teachers' work performance, and achieve the purpose of improving teaching effectiveness. On the other hand, the intelligent teaching platform is supported by advanced software platform and hardware equipment, which is convenient to unify teaching requirements, strengthen process supervision, force teachers to improve information technology literacy, improve the teaching ability of the integration of information technology and subject teaching, and contribute to the promotion and application of the reform measures of "classroom revolution".

4.2 Strengthen Teacher Training, Strengthen Practical Ability and Improve Innovation.

The ability of teachers is the key factor to determine the success or failure of the "classroom revolution". Improving the quality of teachers is a complex and long-term systematic project.

4.2.1 Teaching Skills and Teaching Ability.

We should strengthen basic teaching skills and improve teachers' teaching ability. Due to the strong professional skills and professionalism of Applied Undergraduate Colleges and universities, the professional layout tends to be comprehensive, and many teachers have no professional background of normal education. Some scholars have studied the structure of young teachers in six public Application-oriented Undergraduate Colleges and universities in Guangxi. The results show that only 20% of young teachers graduated from normal universities. To a certain extent, there is a problem that their basic teaching skills are not solid enough [12]. This requires the school to make a good teacher training plan, strengthen the cultivation of teachers' teaching ability through the implementation of normalized teacher training, the implementation of the old and new tutor system, the implementation of the open class rotation system, and the holding of teaching basic skill competitions, so as to gradually form an effective teacher training system.

4.2.2 Teachers' Practical Ability.

Optimize the structure of teachers and improve teachers' practical ability. Through internal training and external introduction, optimize the structure of teachers, improve the proportion of

“double qualified” teachers and strengthen teachers’ practical ability. On the one hand, strengthen the cooperation between schools and enterprises, regularly send teachers to the production and operation front line of professional counterparts for off-duty training, eliminate the talk on paper in the teaching process, and effectively enhance teachers’ understanding and practical ability of subject knowledge. On the other hand, we should establish an incentive mechanism to promote the training and development of “double qualified” teachers, give priority to the introduction of graduates with strong practical experience or select talents with enterprise and industry backgrounds to join the teaching team, and optimize the overall structure, quality and ability of teachers.

4.2.3 Teachers’ Scientific Research Ability.

To improve teachers’ scientific research ability and enhance teachers’ innovative consciousness and spirit. On the one hand, we should develop effective incentive measures for scientific research, encourage teachers to conduct scientific research, integrate scientific research achievements into curriculum teaching, improve the breadth and depth of teaching content, and cultivate students’ innovative thinking and entrepreneurial ability; on the other hand, we should develop effective incentive measures for scientific research, encourage teachers to conduct scientific research, integrate scientific research achievements with curriculum teaching, improve the breadth and depth of teaching content, and cultivate students’ innovative thinking and entrepreneurial ability. We should make full use of the school’s experimental and training facilities, establish a scientific research platform for international collaboration, create a conducive environment for teachers to conduct horizontal subject research in their fields of expertise, increase teachers’ awareness of innovation and their ability to transform scientific research findings, and effectively improve the level of school scientific research that benefits local economic and social development.

4.2.4 Teachers’ Information Literacy.

To improve teachers’ information literacy and strengthen the ability to integrate information technology and subject teaching. Information literacy refers to the basic awareness and ability related to information that a global citizen needs to have in the information age. It includes but is not limited to core competencies in information awareness, information sensitivity, information processing, information sharing, information security, etc. [13]. Improving teachers’ informatization application level and information literacy is one of the basic objectives of the Ministry of education’s education informatization 2.0 action plan [14].

Nowadays, the rapid development of the Internet plus education based on information technology provides a good environment and technological support for the reform of the “classroom revolution”. On the one hand, as the front-line main force of teaching reform action, teachers must correct their attitude, actively learn the typical application of information technology in teaching, master the use methods of common teaching platforms (learning pass, classroom style, rain classroom, etc.) and Mu class platforms (school online, Chinese University Mu class, etc.), and have the basic ability to flexibly organize flipped classes and carry out online and offline mixed teaching; On the other hand, we should establish a reasonable teaching team, deeply study the relevant theories of the integration of subject teaching knowledge and information technology (such as TPACK), and strengthen the ability of the integration of information technology and subject teaching. Actively carry out the construction of digital teaching resources and gradually form a good atmosphere for promoting teaching reform with the construction of digital teaching resources. We should give full play to the advantages of young teachers as information natives, actively explore the promotion and utilization of digital teaching resources, and realize the maximum value of teaching reform.

4.3 Innovate Teaching Forms, Reform Teaching Contents and Enhance Classroom Value

In traditional classrooms, classrooms and laboratories are the most common places for college teaching, and teaching materials are the main channels for students to obtain knowledge. With the rapid development of network technology, the Internet provides rich channels for students to obtain

knowledge, such as Baidu Encyclopedia, NetEase classroom, etc. many online courses pay equal attention to both knowledge and interest, have depth and breadth of problem analysis, and form a great challenge to traditional classroom teaching. Therefore, on the one hand, we should make full use of network resources, innovate traditional classroom teaching forms, extend teaching activities to cyberspace and the workplace, and cultivate students' autonomous learning ability; Change part of the traditional teaching space, design a round table, horseshoe, conference and other different types of teaching activity environment, integrate the teaching concept of the integration of theory and practice into the teaching space, and improve the effect of the flipped classroom, mixed teaching and other teaching activities. On the other hand, we should reform the teaching content, highlight the cultivation of students' application ability and innovation ability, pay attention to the integration of curriculum ideological and political elements, and implement diversified teaching methods such as task-driven, case analysis and field research, so as to achieve the goal of improving classroom value. Taking Guangxi Normal University of science and technology as the reform practice object, the author designs the practice model of teaching reform, as shown in Fig. 1.

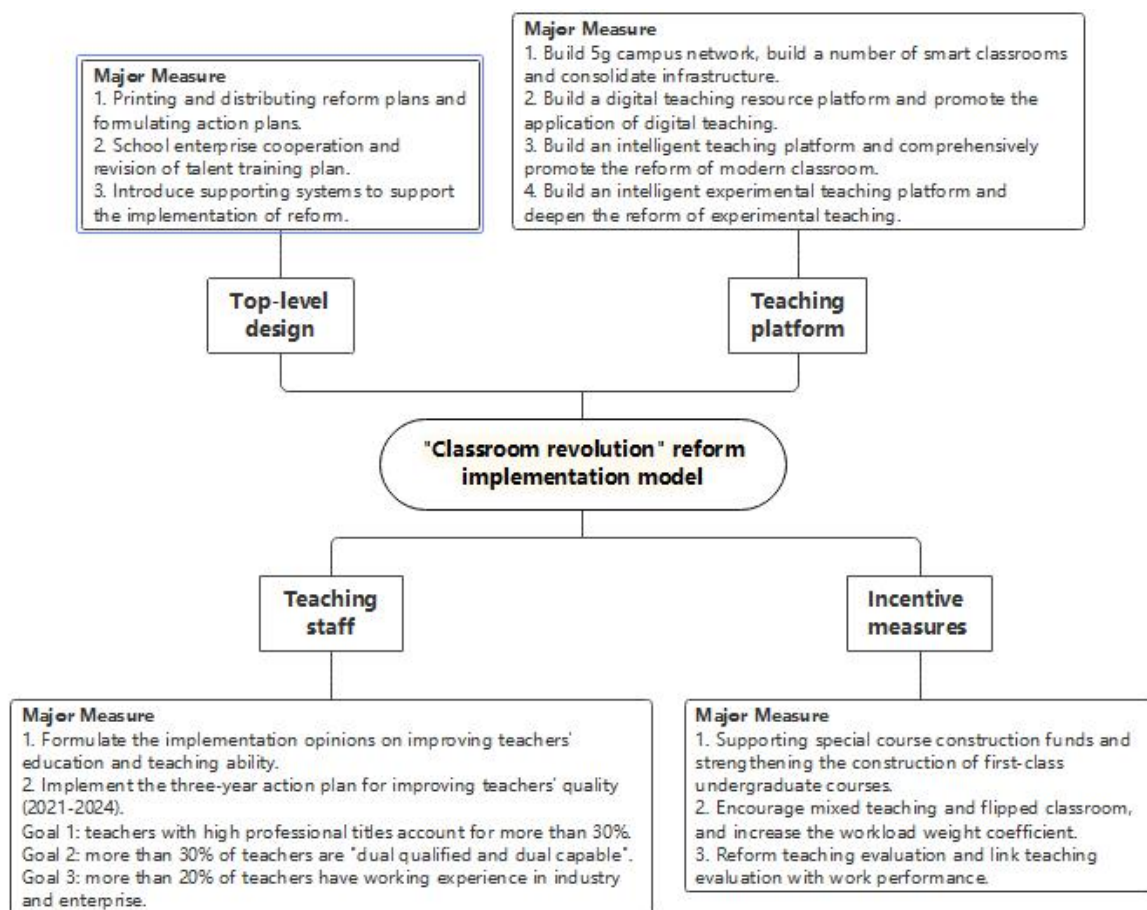


Fig. 1 "Classroom revolution" reform implementation model

5. Conclusion

“Classroom revolution” is not only the reform of teaching methods, but also the innovation of learning forms. It is a teaching paradigm change caused by the comprehensive development of factors such as teaching environment, technical conditions, teaching means and learning methods. It is the teaching requirement of modern education for talent training. It needs to accumulate over time in education and teaching practice, not through short-term surprise construction. The "classroom revolution" is a systematic project that requires the school to do a good job in top-level design, issue

corresponding supporting systems and incentive measures, and organize teachers and students to explore and practice together; We should give full play to the role of information technology in promoting teaching reform, promote the use of intelligent teaching platforms and digital teaching resources in teaching, and promote learning and teaching with technology.

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