



# **The Possible Solutions to Three Dimensions of Educational Reform in China**

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## **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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## **ABSTRACT**

The application-oriented colleges and universities must implement the policy of vocational education reform in order to train practical talents. At the same time, they also face many three dimensions of educational reform (TDER) problems in the implementation of vocational education reform. Therefore, the purpose of this study is to clarify the TDER's problems through literature review, and put forward countermeasures. Based on this, three dimensions of educational reform were taken as key words for literature retrieval, and a total of 20 literatures within the past three years were obtained. Then, the subsequent analysis and induction are conducted. Findings show that the essence of the TDER is how teachers can impart their professional knowledge to students in a reasonable and orderly way through textbooks and teaching methods, so as to achieve the teaching objectives of the course. Future research can be followed by teaching methods improvement of different types of majors and courses.

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## 1. INTRODUCTION

In The State Council's Implementation Plan for the Reform of National Vocational Education (Article 12 of Vocational Education), the reform tasks of "teachers, textbooks and teaching methods" are put forward to better solve the problems of "who should teach, what to teach and how to teach" in the classroom.

In this context, application-oriented colleges and universities must implement the policy of vocational education reform in order to train practical talents. At the same time, they also face many three dimensions of educational reform (TDER) problems in the implementation of vocational education reform, such as the double-credentialed problem of teachers, the applicability of textbooks and the information problem of teaching methods. Therefore, the purpose of this study is to clarify the TDER's problems through literature review, and put forward countermeasures. Based on this, three dimensions of educational reform were taken as key words for literature retrieval, and a total of 20 literatures within the past three years were obtained. Then, the subsequent analysis and induction are conducted. The following chapters will display three education-oriented problems, three education-oriented countermeasures and conclusions respectively.

## 2. THE DEFINITIONS OF TDER

Under the background of national policy guidance and enrollment expansion of millions, the TDER is imperative. Wang [1] explained that in order to achieve significant development for higher vocational colleges, it is necessary to support their development path through the TDER. The colleges and universities should promote the landing rate of talents and improve the overall quality level. This shows that the problem of teachers is the core problem of the three religions, when college administrators face the problems of the three religions under the support of national policies.

Furthermore, the results of the TDER are related to the classroom reform and the effectiveness of classroom teaching, indicating that the TDER is centered on the classroom. Teachers should focus their professional knowledge on classroom activities, and achieve the curriculum objectives through teaching materials and teaching

methods. Luo [2] believed that only the TDER can be highlighted through the implementation of classroom revolution and the improvement of classroom effectiveness. Therefore, the relationship between those two factors is analyzed and studied in order to improve the effectiveness of teaching.

In addition, in order to achieve the curriculum objectives, teachers can adopt such teaching methods as outcome-based education (OBE) approach, student-based education (SBE) approach and project-based education (PBE) approach. Meng [3] has pointed out that the teaching method of OBE and PBE can make knowledge meet the requirements of talent training plans, reserve for practical training projects, and realize the integration of theories and practice verification. According to the study of Yang [4], online and offline resources should be used to establish a structured teacher team, innovate the evaluation system, and explore the hybrid teaching model in accordance with the requirements of the three education reform. This also shows that the TDER should pay attentions not only to teaching methods, but also to the evaluation system.

In summary, the essence of the TDER is how teachers can impart their professional knowledge to students in a reasonable and orderly way through textbooks and teaching methods, so as to achieve the teaching objectives of the course.

## 3. THE PROBLEMS TO TDER

Luo [2] has found that classroom teaching is the main front of the TDER. In the face of the development of information technology and industrial upgrading, timely adjustments should be made, and the reconstruction of teaching content is the basis of textbook reform which combining theory with practice. In other words, in the process of digital economy and industrial upgrading, the teaching content should match the current and future economic and industrial development trends. The reform of teaching materials should be based on adapting to future economic and industrial development, rather than just an inductive summary of past industrial development.

The study of Meng [3] has shown that there are uncertainties in multiple technological fields, and

there are many ways of learning. So teachers' traditional teaching mode lags behind. This shows that students' information sources are multiple and fast in the digital economy, and teachers' teaching mode should not be limited to the existing textbook content. Traditional teaching methods and paper-and-pencil evaluation methods should be examined. In other words, teachers should establish the concept of updating industry information in time in textbooks, so that students can accept first-hand industry development information. In teaching method, we should adopt multi-channel mode, including teacher teaching, group discussion, role playing, dual teaching and so on.

Moreover, scholars also suggest that the level of teachers needs to be improved, and it is difficult to balance theoretical knowledge with practical experience; teaching materials lack novelty, school learning differs greatly from social learning and lacks practice [1]. This indicates that the professional knowledge level of teachers should also be improved, and it is necessary to update the existing professional knowledge through continuous education and increase the types of professional knowledge and technical ability. Secondly, in terms of the balance between theory and practice, it shows that the curriculum arrangement should increase the proportion of practical practice and shorten the difference between theory and social practice. The balance between theory and practice also implies that teachers should focus on the cultivation of students' practical ability in teaching methods, such as the flipped classroom to improve students' performance and communication ability, and to improve students' social investigation and teamwork ability through the production of group reports, which can be considered.

In addition, regarding to the teaching materials and teachers of vocational education, scholars also put forward different views. The textbook and theory of vocational education is weak. The textbook reform is difficult to promote, and the school-enterprise cooperation mechanism has not been formed [5], which highlights that the textbook of vocational education should give consideration to the conflict between theory and practical operation skills. When we emphasize that vocational education should lay emphasis on operational skills and cultivate students' practical ability, at the same time, we hope that they have a good theoretical foundation. Teachers may face a dilemma when choosing textbooks and teaching. Therefore, it seems to be a feasible

solution to draw an evaluation index for the direction of the TDER through teaching ability competition [6]. Moreover, if teachers can adopt mixed teaching methods, the problem of students' weak foundation and better theory acquisition can be solved [7,8].

In summary, the TDER cover teachers, teaching methods and teaching materials. In the aspect of teachers, teachers should not only enhance their ability, update existing knowledge and add new knowledge categories, but also increase their technical ability to match the future industrial development. In terms of teaching materials, teachers should update the information and data of industrial development in real time, which may meet the needs of industrial development. In considering to teaching method, teachers should focus on the cultivation of practical ability and teamwork ability.

#### **4. THE PROBLEMS AND COUNTER-MEASURES OF TEACHING METHODS**

Scholars have small differences in their views on teaching methods, such as outdated teaching model, one-size-fits-all teaching objectives (analysis of lack of learning), single teaching methods and means, and unsatisfactory integration of ideological and political thinking into the curriculum [9]. Traditional teaching model, theory and practice are separated, ignore students' skill training, theory cannot effectively guide practical operation, practice cannot supplement the lack of theoretical knowledge [10]. The demand for single teaching method and information teaching has not been met [11]. The above problems show that there is still room for efforts to break the teacher's one-say-all teaching model in the classroom. For example, project teaching method is adopted to make students understand the teaching task of the day and what specific tasks they need to complete by hand. The flipped classroom is adopted gradually to cultivate students' performance and communication skills, and also increase the fun of class.

Secondly, in the analysis of teachers' learning situation, in addition to considering the origin and background of students, learning basis and willingness are also important. The teaching goal is not only to train students to have the employment skills of the specific industry, but also to combine the real business environment and the employees' views. However, the current teaching situation may be due to the heavy

teaching tasks, many teaching hours, busy administrative affairs, or due to personal knowledge and health factors, it is difficult to take into account the needs of students (learning situation) and the needs of enterprises and curriculum requirements. In addition, there may be differences between the workload requirements of teachers and the cognition of teaching tasks or the professional cognition of teachers, which makes it difficult for the analysis of learning situation on the teaching site to achieve a better fit with the teaching objectives.

In addition, in terms of teaching methods and means, we should not only maintain the advantages of traditional methods, but also take into account the trend of digital technology. For example, students in applied colleges and vocational colleges may have lower learning outcomes and achievements in English and mathematics than those in ordinary colleges and universities. However, their skills and familiarity with digital tools may not lag behind those of average college students. Teachers can try to design the curriculum activities into the use of multiple digital tools, encourage and guide students to use digital tools correctly, instead of the traditional use of mobile phones in class, prohibited to watch video and other methods. Secondly, publicly praising and encouraging students who use digital tools correctly may also lead by example. In addition, it can also promote the evolution and upgrading of traditional teaching methods by establishing a positive encouragement mechanism to digitize the teaching process and teaching results. For example, students write less homework by hand instead of electronically. Students' handwriting quizzes did not change, but their answering skills were strengthened. The traditional paper-and-pencil quiz has not changed, but the content form of the answers has been upgraded from traditional text to a combination of literature and pictures. All of the above teaching methods and means can be tried by teachers.

## 5. CONCLUSIONS AND RECOMMENDATIONS

The purpose of this paper is to explore the significance and problems of the three education reform in Chinese universities, and to analyze the problems of teaching methods and put forward countermeasures. Based on the above, the following conclusions can be obtained:

- The essence of the TDER is how teachers can impart their professional knowledge to students in a reasonable and orderly way through textbooks and teaching methods, so as to achieve the teaching objectives of the course.
- In the aspect of teachers, teachers should not only enhance their abilities, update existing knowledge and add new knowledge categories, but also increase their technical ability to match the future industrial development. In terms of teaching materials, teachers should update the information and data of industrial development in real time, which may meet the needs of industrial development. In teaching method, teachers should focus on the cultivation of practical ability and teamwork ability.
- In the aspect of analysis and countermeasures of teaching methods, teachers can adopt gradually flipped classroom to cultivate students' performance and communication ability, and also increase the interest of class. In the analysis of teachers' learning situation, in addition to considering students' source background, learning foundation and willingness are also important. In teaching methods and means, we should not only maintain the advantages of traditional methods, but also take into account the trend of digital technology.

For future research, this study suggests the following:

- This study has preliminarily discussed the problem of the three education, and future studies can continue to discuss the problem of the three education in different school systems based on the research results. For example, the TDER's problems between undergraduate universities and applied universities, and the TDER's problems between undergraduate universities and junior colleges are discussed.
- This study has preliminarily analyzed teaching methods and proposed countermeasures. Future research can be followed by teaching methods improvement of different types of majors and courses. For example, the comparison of the same teaching method in marketing and accounting, the comparison of the same teaching method

in the course of marketing and consumer behavior.

- Future studies may try to compare the differences in the implementation of different teaching methods in the same curriculum, such as the comparison of teaching effectiveness between project-based teaching method and flipped classroom teaching method.

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## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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