Can the Reform of Research Reward System in Chinese Higher Vocational Colleges Eliminate the Phenomenon of "Thesis-Only" Research? —— A Case Study of College M

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Abstract. Starting from the abolition of thesis reward, China has carried out the reform of research reward system in colleges and universities to correct the phenomenon of "thesis-only" research. Exploring the governance effect of this system reform in Chinese higher vocational colleges is conducive to promoting the connotation construction and high-quality development of research in Chinese higher vocational colleges. Based on Skinner's reinforcement theory, this paper constructs a theoretical analysis framework of reinforcement stimulation of research reward system, transformation of teachers' research behaviors and achievement of institutional reform goals. Adopting the single-case study method, this paper analyzes the governance effect of the reform of the research reward system, which abolished the thesis award, in eliminating the phenomenon of "thesis-only" research in Chinese higher vocational colleges. The study finds that the integration of positive reinforcement, negative reinforcement, and natural regression can promote teachers to change their positive research behavior, natural fading research behavior and negative research behavior, and that the multidimensionality, high quality, and compliance of the change in teachers' research behaviors can weaken the "thesis-only" phenomenon in research. The study concludes that the reform of research reward system by abolishing the thesis award is an effective way to eliminate the "thesis-only" phenomenon of research in Chinese higher vocational colleges, and the substantial change of teachers' research behaviors from the explicit and implicit aspects is the key link of institutional governance reform.

Keywords: the reform of research reward system, teachers' research behaviors, the phenomenon of "thesis-only" research.

1   Introduction

The healthy development of research is related to the connotation construction of higher vocational colleges, which shows the value and responsibility of higher vocational colleges to serve the country, the local and the society. Influenced by the alienation of

research orientation for a long time, the research of Chinese higher vocational colleges has highlighted the problems of "GDP-ism", "Matthew effect" and "academic drift"[1](Hao et al., 2020), which are directly related to the phenomenon of "thesis-only" research. For this reason, China has started from the abolition of thesis reward, and carried out the reform of research reward system to correct the phenomenon of "only paper" research. At present, the research on scientific research in China's higher vocational colleges mainly focuses on the phenomena of regional research interaction, cluster research effect, research between colleges and teachers, but pays relatively little attention to the phenomenon of "thesis-only" research, and the relevant empirical research is even more limited. In view of this, this study chooses a typical higher vocational college in China as a case, and analyzes the governance effect of the research reward system that abolishes the thesis award from the internal perspective of the college, in order to explore an effective path for reforming the research system to eliminate the phenomenon of "thesis-only" research.

2   Theoretical Framework

Reinforcement theory was proposed by psychologist and behavioral scientist Skinner in the early 1950s. It was first used to study the incentive of animal behaviors and human learning behaviors, and then expanded to the organizational level and widely extended to many fields such as enterprise management, public management, educational management and knowledge management. According to Skinner's reinforcement theory, reinforcement is an event that accompanies the behavior and helps to increase the probability of the repetition of the behavior, changing the stimulus of reinforcement can change the individual behavior, and controlling reinforcement can control the behavior[2](Xie, 2003); Reinforcement can be classified into positive reinforcement, negative reinforcement and natural regression according to the different effects and results, in which positive reinforcement is the enhancement of stimulus given to the behavior to increase the likelihood of the behavior repetition, while negative reinforcement is the opposite stimulus to the behavior to stop the possibility of behavior repetition, and natural regression is the cancellation of positive reinforcement used to stimulate the behavior so that the previously reinforced behavior appears to be weakened or faded[3](Cao, 2017); The behaviors that is changed through the role of reinforcement can achieve the desired organizational goals[4](Long, 1992). The logical structure of Skinner's reinforcement theory fits the practical way of guiding teachers to change their research behaviors through the reform of research reward system in China's higher vocational colleges, so as to eliminate the phenomenon of "thesis-only" research.

Research behavior refers to a series of academic activities around research[5](Evans, 2011). There are a variety of existing studies on the division of research behavior of college teachers, especially some believe that college teachers have positive research behavior from the empirical research of specific specialties[6](Zhang et al., 2017). Drawing on the relevant research, this study classifies the research behaviors of teachers in higher vocational colleges into positive research behavior, negative research behavior and natural fading research behavior based on the different effects of reinforcement. In

addition, the research reward system in this study adopts the general understanding that it is the reward for research achievements[7](Fu, 2022); the phenomenon of "thesis-only" research is understood as the effect of thesis-oriented research activities, and the goal of its elimination is to change the research habit of excessively pursuing the number of theses and realize the overall improvement of the quality of research. Based on the above, this study uses Skinner's reinforcement theory to construct a theoretical framework, and analyzes the incentive stimulus formed by the reform of research reward system on the teachers' research behaviors from the three dimensions of positive reinforcement, negative reinforcement and natural regression, and then investigates the achieving goal of eliminating the phenomenon of "thesis-only" research in higher vocational colleges. The specific research framework is shown in Figure 1.
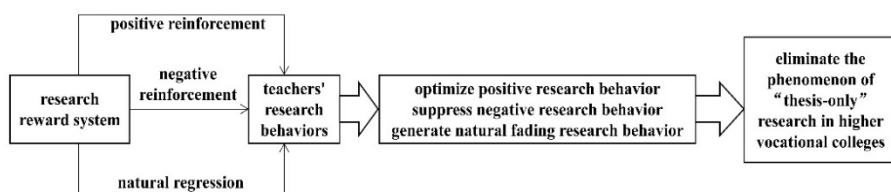

Fig. 1. research framework

3   Reform of the Research Reward System and Teachers' Research Behaviors Change in Higher Vocational Colleges: an Empirical Analysis Based on a Case Study

This study adopts the single-case study method, which has relative advantages in revealing new phenomena of management practice[8](Yin, 2003) and refining theories by analyzing complex phenomena[9](Siggelkow, 2007). Case studies require the conscious selection of unique, complementary or critical cases based on existing theories[10](Zheng et al., 2012). In this regard, the scope of case selection in this study focuses on high-level colleges in China's "Double-high Plan" and selects the reform of college M as a case sample. This is mainly due to two considerations: First, as a high-level higher vocational college supported by China, college M is in the "front-runner" position to lead the reform of higher vocational education in the country, and its reform is very thorough, with typical and representative compared with the wait-and-see and conservative reforms of many current higher vocational colleges; Second, college M is a higher vocational college that the author has conducted special research on, and the author has established a stable relationship with the personnel of the relevant departments promoting the reform of the research reward system in college M, so that it is more convenient to obtain and verify the relevant information for research.

    This study collects the documents of the research reward system issued by college M before and after the reform of eliminating the phenomenon of "thesis-only" research, as well as the annual reports on scientific innovation and service quality published in the past three years, and sorted out the practice and decision-making process of the

gradual deepening of the reform of the research reward system of college M. At the same time, it combines the information published on the official website of college M, the construction program and construction assignment of the national "Double-high Plan" published by college M, and the annual summaries of the science and technology department of college M in the recent three years, etc., to form the source of the study, which are official and credible.

3.1   Case Background

College M is a comprehensive vocational college located in the capital city of a province, and it is one of the first batch of national "demonstration schools" in China, recognized as a national "high-quality school", and is currently identified as a national "Double-high plan" high-level college construction units. Its research reward system reform is fully embodied in the implementation of scientific and technological achievements reward management measures in recent years. Since the national "Double-high plan" construction, College M has carried out three reforms of different degrees of scientific and technological achievements reward system in 2020, 2021 and 2022. In view of the great convergence of the first two reforms, this study mainly focuses on the content and role of the third reform and its impact on the change of teachers' research behaviors.

3.2   Reform of College M Research Reward System Based on Skinner's Reinforcement Theory

Constructing a Stimulating Environment to Promote the Natural Regression of "Thesis-Only" Research. College M has always taken thesis as an important component of research reward, and has adopted different reward methods to positively strengthen thesis to different degrees at different stages, forming a reward habit of continuous positive incentives for thesis. With the launching and promotion of the national "double-high" construction, the positive reinforcement of the long-term emphasis on thesis rewards has led to the phenomenon of "thesis-only" research in college M, exposing the accumulated disadvantages of the overall low quality of research achievements. The Annual Report on Science and Technology Innovation and Service Quality (2023) of college M pointed out that the number of scientific and technological achievements of the college is quite large, but the iconic high-level scientific and technological achievements are relatively poor, and the core competitiveness of research is weak. In order to reverse this research situation, college M has completely broken the tradition of positive reinforcement of thesis rewards, and directly canceled the positive reinforcement stimulus of rewarding theses over a long period of time, and no longer gives priority to and focuses on the rewards of international theses such as SCI, SSCI, etc., and no longer grants thesis rewards in accordance with the core of Nanda University, core of Peking University, core of CSCD, and thesis reprinting.

Enhance the Positive Reinforcement Environment Focusing on Research Quality, Contribution And Impact. Based on extensive research, college M has constructed a positive and reinforcing environment to enhance stimulus in four aspects: First, it has set up a special fund for rewarding scientific and technological achievements to ensure the source of funds for incentivizing the output of research achievements. Second, the positive reinforcement of direct incentive payments has added, focusing on incentivizing state-level science and technology projects focusing on national needs, state-level and ministerial-level research achievement awards and platform team building, as well as ministerial-level and above think-tank achievements. Third, the positive reinforcement of increasing reward points will continue to incentivize scientific and technological projects at the provincial and ministerial levels and below, as well as awards for research achievements, platform team building and think-tank achievements at the provincial level and below, etc., especially the implementation of major breakthroughs in research achievements to the positive reinforcement of significantly increasing reward points, so as to stimulate research to continuously improve its contribution and influence on the local development. Fourth, it maintains the point system of rewarding the social service research achievements of horizontal scientific and technological projects, achievement transformation, intellectual property rights, and technical standards and other social services.

Enhance the Negative Reinforcement Environment for Penalizing Research Misconduct. On the one hand, college M has fully implemented the commitment system of research integrity for all staff, explicitly prohibited 15 kinds of research misconduct such as intentional duplication, falsification of materials and illegal obtaining projects, and established disciplinary measures such as archival records, incident database, process traceability, full supervision and social disclosure of research misconduct, so as to comprehensively prevent and control research misconduct. On the other hand, college M has increased the penalties of research misconduct. On the basis of revoking the honor, recovering the prize money and holding accountable for the scientific and technological achievements rewarded by violating scientific research ethics, it also further specifies that the violators are not allowed to apply for any scientific research projects for as short as two years and as long as five years, and those who have misconducted records for more than two times will be subject to a "one-vote veto" on all the projects application, recommendation and selection of the current year, and according to the seriousness of the circumstances, it will not be allowed to assess excellent and advanced, promote professional title and position and recommend talent program within a certain number of years.

3.3   The Impact of the Reform of Research Reward System on Teachers' Research Behaviors Change in College M

For a long time, college M has insisted on improving the negative reinforcement environment of research rewards, so that the teachers have formed the research consciousness of abiding by the research ethics and norms in their research activities. With the

elimination of the original positive reinforcement of thesis, the tendency of "thesis-only" in the research of the teachers of college M has been weakened. According to the data of the annual report on scientific and technological innovation and service quality of college M, compared with 2020, the total number of papers published by teachers in 2022 has decreased by 4.6%, and the number of papers published in domestic and international high-level journals has increased by 13.6%. In addition, stimulated by the positive reinforcement of increased research rewards, teachers in college M have also made substantial breakthroughs in the output of high-level scientific and technological achievements. In 2022, college M has added 4 ministerial-level vertical science and technology projects and made a breakthrough in building 8 research and innovation platforms at the municipal and departmental levels or above; the amount of horizontal technical service arrivals for social services has reached more than 16 million yuan, a year-on-year increase of 36%.

4   Research Findings

4.1   The Integration of Positive Reinforcement, Negative Reinforcement and Natural Regression can Effectively Promote the Change of Teachers' Research Behaviors

In the new era, the reform of the research reward system strives to change the research behaviors of teachers, who are inclined to the necessity or even uniqueness of the thesis, by reforming the system framework that relies on the thesis, optimizing the direction of research reward, and reshaping the environment of research reward. In the practice of college M, it can be found that the radical change from positive reinforcement to negative reinforcement of thesis incentives has reconstructed the reinforced stimulating environment for the natural regression of "thesis-only" research, which makes the teachers' pursuit of the number of theses and the cult of thesis rewards fade, and causes the teachers' gradual emergence of the natural fading research behavior. The positive reinforcement stimulus, which is optimized and enhanced with the new focus on the quality, contribution and influence of research, has reversed the focus and bias of research awards, brought about a change in the phenomenon of reducing the quantity and improving the quality of thesis and highlighting a variety of high-quality research achievements, and contributed to the gradual formation and repetition of positive research behaviors by the teachers. The continuously enhanced negative reinforcement stimulus continuously creates a research atmosphere of observing scientific research ethics and alerting scientific research anomies, continuously enriches the scientific research quality of college, and promotes the formation of scientific research consciousness of teachers to resist and guard against negative scientific research behaviors in the negative stimulus atmosphere. Therefore, the integration reform of positive reinforcement, negative reinforcement and natural regression of research reward system in higher vocational colleges can effectively shape the substantive change of teachers' research behaviors.

4.2   The Multi-Dimensionality, High Quality and Compliance of Teachers' Research Behaviors Change can Effectively Weaken the Phenomenon of "Thesis-Only" Research

Under the reinforcement stimulation of the research reward system that abolishes the thesis reward, the teachers' research behaviors presents the characteristics of multi-dimensionality, high quality and compliance. Among them, the multi-dimensionality of teachers' research behavior originates from the emergence of natural fading research behavior and is highlighted along with the enhancement of positive research behavior, which can influence teachers to change the narrow pursuit of scientific research mainly based on thesis, and realize the diversification of teachers' pursuit of scientific research achievements. The high quality of teachers' research behavior points to the constant repetition of teachers' high-quality research behavior, which can influence teachers to maintain the tendency of pursuing high-level scientific research and innovation, and lead them to focus on repeating high-level achievements serving the important needs of the national and the local by promoting to be guided by quality, contribution and influence, and to generate a new cognition of and a new pursuit of high-level research achievements. The compliance of teachers' research behavior, through legal regulation and norms to follow, promotes teachers to pursue the spirit of scientists, consciously show their scientific research responsibility and sentiment, and builds a "regulatory barrier" for weakening the phenomenon of "thesis-only" research and ensures that the effect of governance is stable and long-term. Therefore, the multi-dimensionality, high quality and compliance of teachers' research behaviors change are the implicit mechanism to weaken the phenomenon of "thesis-only" research.

5   Conclusions and Recommendations

Based on the case study analysis, positive reinforcement, negative reinforcement and natural regression are a comprehensive whole of reinforcement, in which positive reinforcement and natural regression are the main factors affecting the change of teachers' research behaviors, and negative reinforcement promotes the role of positive reinforcement and natural regression and effectively regulates teachers' research behaviors, which in turn jointly stimulate teachers to continuously optimize positive research behavior, generate natural fading research behavior, consciously suppress negative research behavior, and form the behavioral characteristics of multi-dimensionality, high quality and compliance of weakening the phenomenon of "thesis-only" research from the implicit mechanism. In other words, the reform of research reward system by abolishing the thesis reward is an effective way for Chinese higher vocational colleges to eliminate the phenomenon of "thesis-only" research, and the transformation of teachers' research behaviors from the explicit and implicit aspects is the key point. Facing the current practice reform, Chinese higher vocational colleges should change the concept of research reward, realize that the pursuit of quality, contribution and influence is the turn of research reward in the new era, and establish confidence and courage to promote the reform of research reward system by abolishing thesis reward; focus on designing the reform of the research reward system to strengthen the stimulus for the change of

teachers' research behaviors, and strive to influence teachers to form multi-dimensional, high-quality, and compliant research behavior characteristics; implement small peer expert review and other evaluation of scientific research rewards, to ensure that the research achievements of teachers are effectively incentivized on the basis of high quality, high level and high contribution, so as to stabilize the substantial change in teachers' research behaviors.

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