

Practice and Exploration of the “Graded Training Model” in the Education and Development Center of Vocational Colleges

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Keywords: Vocational Colleges, Educational Development Centers, Graded Training Models, Practical Exploration, Student Feedback

Abstract: Currently, relying solely on traditional training methods is difficult to effectively solve the problems of funding and resource shortages, inadequate training systems, and inadequate management. This article provides a hierarchical training model to improve the teaching level and innovative ability of teachers, as well as the construction of a teacher development service system, and carries out the construction of a three-level training model. To improve the training level of young teachers, the Teacher Development Center uses materials such as classroom observation videos, teacher interviews, and student feedback. It compares and analyzes the teaching process of teachers before and after participating in graded training, and evaluates the role of graded training in improving and innovating teaching methods for teachers. The diversity of teaching methods experimental group has 3.5 points, and the diversity of teaching methods control group has 2.0 points. The frequency of classroom interaction is 4.2 points in the experimental group and 3.0 points in the control group. This article helps to promote the high-quality development of the Education Development Center in vocational colleges and the construction of the teaching staff.

1. Introduction

From the initial self-exploration of young teachers by various universities before their entry, to the self-restraint imposed by the national education administration, all contribute to the transformation of the role of young teachers. However, with the continuous expansion of university

scale and the continuous improvement and development of universities, the requirements for their personality and characteristics are becoming increasingly prominent. The shortcomings of the current national (or local) unified pre-employment training model for young teachers are also becoming increasingly apparent. In response to this situation, this article attempts to use a new "graded training model" to help young teachers in Chinese universities cultivate and improve their self-awareness, correct the shortcomings of the current training methods, and achieve good training results.

This article first provides the practical background of the "graded training model" of the Education Development Center in higher vocational colleges, points out the shortcomings of the graded training model, and then constructs a teacher development service system with "vocational education characteristics" as the core. In recent years, many higher vocational education colleges have established teacher development centers. However, in this process, the role of the Teacher Development Center has not been fully realized, and the characteristics of vocational education have not yet been reflected. Finally, the practical results of the "graded training model" of the Education Development Center in vocational colleges can be provided, along with specific analysis.

2. Related Work

In today's rapidly developing information technology, and in the education environment of the new century, the education industry is also constantly innovating and advancing. Teachers are the foundation of education, and building a high-quality teaching staff is starting point. How to improve the overall quality of the teaching staff on a large scale and promote the implementation of quality education is the key to the construction of the "graded training model" in the Education and Development Center. Nan Xie believed that vocational colleges are an important platform for the development of higher vocational education. Vocational colleges are driven by teachers, who are the institutional carriers for promoting their career development. He focused on the role positioning and development difficulties of teachers in vocational and technical colleges, taking the construction and play of the core role of teacher development as the starting point, and explored and reflected on this [1]. Wang Jin believed that cultivating talents is the most basic function of universities, and the teachers of universities are the main force for talent cultivation. Therefore, the professional development of university teachers has become very important, and it is necessary to strengthen the professional construction of the teacher development center itself as the key to reform [2]. Qi Jingyu used online text data analysis survey methods to conduct a survey on the teaching development centers of university teachers. He provided corresponding strategies and predictions, hoping to further strengthen China's teacher system construction, improve the quality of education and teaching, and provide resources and research materials for the construction of a teacher teaching development center [3]. Zhao Peng believed that based on the training data in recent years, the Yueyang Primary and Secondary School Teacher Development Center has explored the establishment of a "six in one" model of "management mechanism, team building, resource platform, project design, base construction, and post training tracking" through the approach of "research analysis organization design trial summary improvement", in order to improve training effectiveness [4]. Popova A believed that many teachers in low - and middle-income countries lack effective teaching skills, and teacher development center training programs are the main tool used by governments to enhance these skills. Most large-scale teachers have fewer opportunities to practice new skills, and once they return to the classroom, there are also fewer follow-up actions [5]. But their research has not been helpful for the development of the Education Development Center.

From the perspective of curriculum practice, the School Education Development Center is a type of curriculum created and implemented by school teachers through improving school education

practices [6]. In terms of the nature of the curriculum, the Education and Development Center can reflect the school's educational purpose, the special needs of students, and the characteristics of local resources, and can combine with national and local courses to provide diverse and selective courses. In terms of curriculum development, the Education and Development Center is guided by the national curriculum, and based on democratic decision-making, carries out distinctive curriculum development based on the "internship evaluation development" model and the school. In terms of curriculum management, the Education Development Center is the unity of national and local curricula, and is a component of China's three-level management system for basic education [7]. In terms of curriculum advantages, the Education Development Center emphasizes the active participation of teachers, combining the cognitive background and needs of students with the subjective and objective conditions of the community where the school is located, reflecting the characteristics of the school. The development of the "graded training model" by the Education Development Center is an effective supplement and improvement to the national and local curriculum.

3. Method

3.1 Graded Training Mode Improves Teachers' Teaching Level and Innovative Ability

When formulating vocational education teacher training plans, it is necessary to improve the training system that is demand oriented, task driven, diverse in form, and guided by post training tracking. A corresponding hierarchical training model should be established to improve the teaching ability of teachers [8]. For teachers of different types and professional development periods, their requirements for improving teaching abilities are also different. It must accurately analyze the professional development needs of teachers and develop specific work plans for their different stages of professional development. Teachers training and exchange in vocational colleges can be organized through centralized training, online training, visiting study and training, and school enterprise cooperation research [9-10]. The teacher training in higher vocational education includes four stages: cultivating high-end leading talents, cultivating renowned teachers and craftsmen, cultivating young backbone teachers, and cultivating new teachers [11]. The main contents of the training are as follows: mastery of basic theoretical knowledge of teacher education, preparation of lesson plans, teaching design, classroom organization and implementation, as well as cultivation of information technology teaching abilities. It can integrate scientific research achievements into teaching, participate in the application of technology and research and development of new products in enterprises, and integrate new processes and methods of enterprises into professional teaching. The focus of teacher training should vary according to their growth stage [12].

3.2 Construction of a Teacher Development Service System with "Vocational Education Characteristics" as the Core

In recent years, many higher vocational education colleges have established teacher development centers. However, in this process, the role of the Teacher Development Center has not been fully realized, and the characteristics of vocational education have not yet been reflected. In the view of scholars, the basic functions of teacher development centers include: cultivating teachers, providing various consulting services, conducting scientific research exchanges, promoting teaching reform, conducting teacher development evaluations, sharing resources, designing career plans, and evaluating teaching quality. The role of the Teacher Development Center can help teachers with their professional growth, but since it belongs to vocational education, in addition to the traditional functions mentioned above, a teacher development center community jointly built by schools and

enterprises can also be adopted. It can invite technical experts and experts from enterprises to enter the campus, combine with the actual production work of the enterprise, and jointly explore methods to solve problems. A platform for industry university cooperation can be established to provide teachers with internship opportunities. It can convey technical information and development trends of industrial enterprises, establish a research and development team based on cutting-edge technological issues and needs of the industry, and conduct research and development with the company's technical experts to improve the scientific research and development level of the teaching staff. Higher vocational education aims to cultivate applied talents and places higher demands on professional theoretical and practical teaching abilities. In addition to fully playing the core role of teacher development, vocational colleges should also serve the development of vocational teachers, and provide certain support and guarantee in curriculum and teaching reform, as well as research and development of applied technologies [13-14].

Training input t_r output c_s formula:

$$c_s = a_0 + \sum_{n=1}^{\infty} \left(t_r + b_n \sin \frac{n\pi x}{L} \right) \quad (1)$$

Training effectiveness evaluation model:

$$x_p = \sum_{k=0}^n \binom{n}{k} i^k a^{n-k} \quad (2)$$

Weight i : The weight of each evaluation indicator, used to measure its importance in the overall evaluation.

Regression analysis model:

$$y = ax^2 + bx + c \quad (3)$$

a , b , c : Regression coefficients, indicating the strength of the linear relationship between the independent variable x and the dependent variable y . In training practice, the learning outcomes or other indicators of trainees can be used as dependent variables, and training content, methods, etc., can be used as independent variables. Regression analysis models can be used to understand the relationship between them.

3.3 Establishment of a Three-Level Training Model

The Teacher Development Center promotes and serves the improvement of teachers' education, teaching, research abilities, and comprehensive literacy through various means, serving the development of the school's cause. Therefore, since its establishment, the Teacher Development Center has actively promoted the construction of self-improvement mechanisms for various departments and teachers. Firstly, in the New Year, each college is required to submit their training plans and plans to the Teacher Development Center, with a particular emphasis on planning the content of professional training. Secondly, it is necessary to establish a daily training management system for teachers, issue a "Teacher Training Registration Certificate", track and manage the daily training situation of full-time teachers, and strictly review training activities through daily registration, review of the "Teacher Training Registration Certificate", and special approval of special training plans. Finally, based on the three main bodies of "center", "department", and "individual", under the continuous exploration and promotion after the establishment of the Teacher Development Center, the training awareness of teachers is gradually improving. The most prominent feature is that teachers actively participate in various school-based training, and the professional training of the college is more targeted. The personalized development needs of teachers are also becoming stronger, and the demonstrative role of training is gradually emerging.

3.4 Implementation of the Three-Level Training Model

In order to improve the training level of young teachers, the Teacher Development Center adheres to the principle of promoting, helping, and attracting, and explicitly requires young teachers to complete a certain period of teacher training within 3 years of employment. It can be combined with annual assessment, professional title evaluation, etc. In terms of funding, it is necessary to ensure that the training funds allocated by each college to the school are coordinated and arranged, and more energy should be focused on young teachers with low academic qualifications and professional titles, so that they can develop faster. Teachers with higher education and professional titles should use their own project funds to cover the relevant training costs. By building multiple platforms, this article adopts various approaches to promote the growth of young teachers. Schools enhance the professional quality and educational level of young teachers through various functional departments.

(1) Assist in the cultivation of new teachers

This article follows the stages of "university teacher onboarding training - entrance education - general education research - classroom observation - teaching assistants - professional training" and adopts a training approach of "school collaboration, teacher initiative" to focus on new teacher onboarding training and help young teachers stand firm on the podium. The Teacher Development Center adopts the form of "New Teacher Training Camp", which provides key expansion training for new teachers through specialized salons, discussions and exchanges. In addition, it also requires schools to provide professional reinforcement training according to the characteristics of their own disciplines and majors, and to provide one-on-one tutoring to young teachers through the provision of mentors and mentoring. This can guide them to develop their own career development plans, impart their educational philosophy and experience to them, so that they can stand on the podium and improve their abilities.

(2) Emphasizing the Implementation of Continuing Education for Young Teachers

Firstly, the government allocates a special fund every year to encourage and support young teachers to pursue doctoral studies or continue their studies through paid continuing education, tuition reimbursement, and graduation rewards. Secondly, it is important to attach importance to the on-the-job training of young teachers, adopting various methods such as mentor guidance, assessment guidance, specialized training, on-the-job training, and short-term visits, so as to rapidly improve the education and research level of young teachers. The third is to support and encourage teachers to go abroad for exchanges, visits, and training, in order to improve their educational level and broaden their horizons. It can strengthen the recognition of "excellent teachers" and "teaching masters", and give priority rewards to young teachers who have achieved significant achievements in scientific research and teaching, in order to stimulate their intrinsic motivation for self-development and self-development.

(3) Encourage teacher competency transformation

In this regard, schools should develop targeted measures to reward teachers who meet the standards of "dual teachers" and "dual abilities", and set specific requirements and management methods for their on-the-job training in industrial enterprises, in order to strengthen their professional practical abilities with strict requirements. Each department should provide targeted training to teachers with high practical application levels according to the development needs of their respective majors, and participate in relevant academic exchanges, skill competitions, etc. It can broaden and deepen the cooperation with enterprises, allowing teachers to combine theory with practice and integrate them with teaching.

4. Results and Discussion

4.1 Classroom Observation

This article uses materials such as classroom observation videos, teacher interviews, and student feedback to compare and analyze the teaching process of teachers before and after participating in graded training, and evaluates the role of graded training in improving and innovating teaching methods for teachers.

The scores of different indicators between the experimental group and the control group are shown in Table 1. The diversity of teaching methods is 3.5 points in the experimental group and 2.0 points in the control group. The frequency of classroom interaction is 4.2 points in the experimental group and 3.0 points in the control group. The experimental group consists of teachers who participated in graded training, while the control group consists of teachers who did not participate in graded training.

Table 1: Different indicator scores of the experimental group and the control group

Index	Experimental group (score)	Control group (score)
The diversity of teaching methods	3.5	2.0
Classroom interaction frequency	4.2	3.0
Student engagement	3.8	2.5
Teacher's classroom management ability	4.0	3.2
Student feedback satisfaction	4.5	3.6

4.2 Changes in School Title Levels before and after Graded Training

The changes in school professional title levels before and after graded training are shown in Table 2. Before the graded training, 20% were full professors and 20% were associate professors. After the graded training, 40% were full professors and 30% were associate professors.

Table 2: Changes in school title levels before and after graded training

Title level	Before graded training (%)	After graded training (%)
Full Professor	20	40
Associate professor	20	30
Teaching assistant	30	15
Lecturer	30	15

4.3 Student Evaluation Survey

By conducting an anonymous questionnaire survey on students, the paper aims to understand their evaluation of the teaching ability and effectiveness of teachers. At the same time, it compares the student evaluations of two groups to understand the role of graded training in improving the quality of teaching for teachers.

The comparison of evaluation scale scores between the experimental group and the control group is shown in Figure 1. The average score of the evaluation scale was 8.92 points for the experimental group and 8.21 points for the control group. The highest score on the evaluation scale was 9.53 points for the experimental group and 9.01 points for the control group.

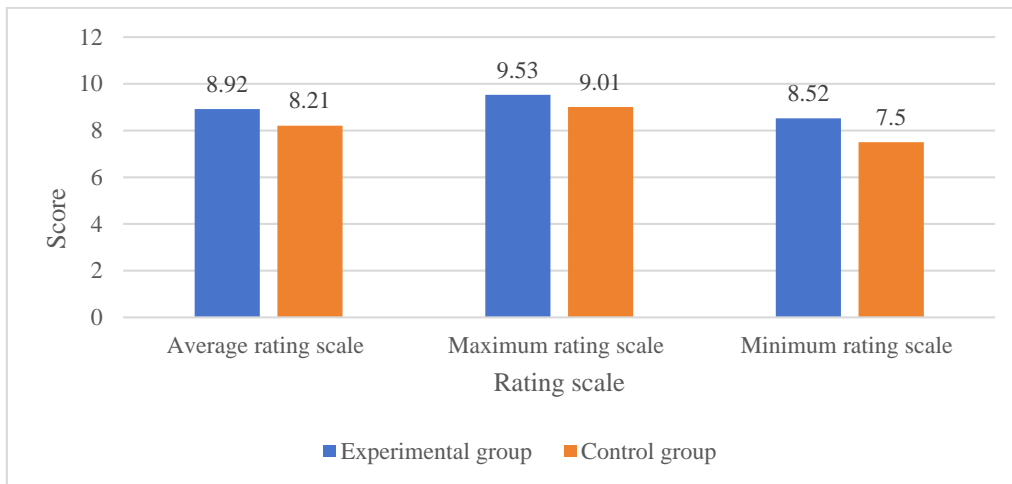


Figure 1: Comparison of evaluation scale scores between the experimental group and the control group

The comparison of satisfaction between the experimental group and the control group is shown in Figure 2. The experimental group was very satisfied with 75.3%, satisfied with 14.9%, and commonly accounted for 9.6%. The control group was very satisfied with 60.4%, satisfied with 19.6%, and commonly accounted for 14.7%.

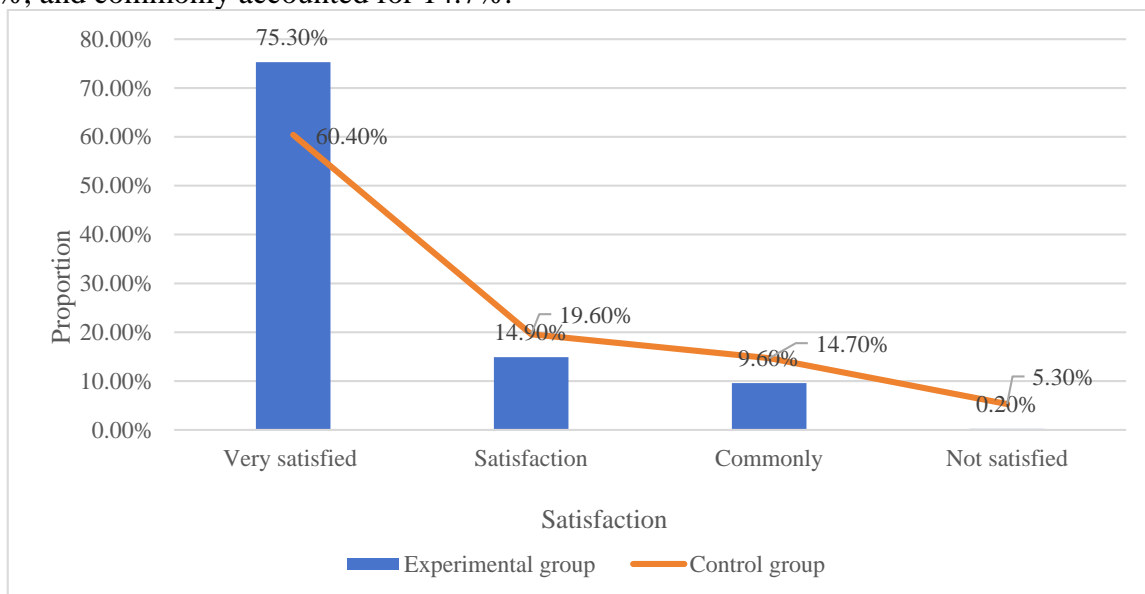


Figure 2: Comparison of satisfaction between the experimental group and the control group

4.4 Evaluation of Teaching Performance

Statistical methods are used to explore the influence of hierarchical training methods on teachers' teaching performance. 89.1 points in the experimental group and 80.9 points in the control group. The teaching results of the experimental group and the control group are shown in Figure 3.

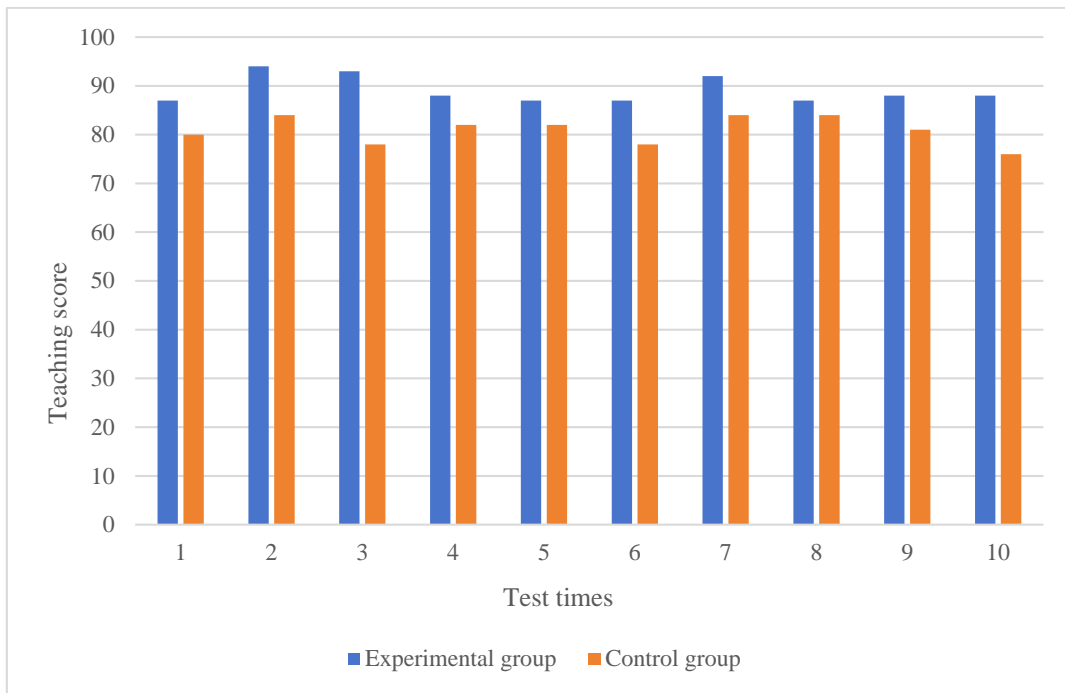


Figure 3: Teaching scores of the experimental group and the control group

5. Conclusions

Universities should combine their own reality, summarize their own experience, establish a "Teacher Development Center", and establish a sound teacher training mechanism, which is the key to improving the level of education and teaching. The focus of this article is on the development of teachers and the study of innovative training models, aiming to provide a communication platform for the improvement of teachers' teaching abilities. At the same time, it is also to solve the problems encountered by teachers in educational practice, and on this basis, explore an innovative "graded training model". This exploration also needs further improvement in future teacher training and teaching practice in order to achieve ideal educational results. There are many shortcomings and imperfections in the article, and there is currently no clear empirical research on some innovative models used. Further in-depth research can be conducted on related issues.

Acknowledgement

Project No.: JG21EB189

Research on the Construction of Competency Training Mode for Higher Vocational "Dual-Teacher and Dual-Capable" Teachers Based on Combination of Education and Training

Project No.: JG21EB191

Research on the Innovation of Cultivating Big Data Accounting Talents through the Integration of Post-Course, Race, Certificate and Creation

Project No.: LnzkB202324

Research on the Strategy of "Talent Revitalization" in Yingkou Rural Areas

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