Construction of a Service Platform for the Development of Teachers in Vocational Colleges from the Perspective of Digital Transformation: Value, Dilemma and Promotion Path

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Abstract: Under the background of the digital transformation of education, this paper deeply discusses the far-reaching value of the construction of the teacher development service platform in vocational colleges, the current challenges and dilemmas, and the effective path to promote the construction of the platform. Through the systematic analysis of the exploration and practice of the teacher development service platform of vocational colleges in the process of digital transformation, this article puts forward a series of targeted implementation strategies, aiming to help the platform better adapt to the development needs of the digital era, promote the professional growth of teachers in vocational colleges, and then improve the overall quality of education and teaching.

Keywords: Digital Transformation; Vocational Colleges and Universities; Teacher Development; Data Governance

1. Introduction

With the rapid development of digital technology, digital technologies represented by artificial intelligence, big data, blockchain, virtual reality, etc. are gradually permeating into all fields of human life, especially in the field of education. The wide application of digital technology has promoted the innovation of educational forms and changed the management mode, operation mechanism and mode knot. The structure provides strong support and driving force for education. At the same time, the progress of society and the change of people's concept of education have made the demand for education increasingly diversified. Education is no longer limited to a single, standard and traditional model, but transformed into a process of pluralism, difference and innovation. People's demand for education has also changed from consistent, fixed and passive to diverse, dynamic and active. In addition, educational resources are also becoming increasingly abundant, no longer limited by a scarce, closed and limited framework, but developing in a rich, open and infinite direction. The source, form, content, quality, distribution, acquisition and utilization of educational resources have undergone profound changes. In this context, it is of great practical significance and value of the times to explore the construction of a service platform for teacher development in vocational colleges and universities from the perspective of digital transformation, and analyze its value, dilemma and promotion path.

2. The Digital Transformation Value of the Teacher Development Service Platform of Vocational Colleges

2.1 Digital Transformation Value

Improve the quality of teacher training. The digital transformation of vocational education is conducive to accelerating the construction of a learning society. At present, digitalization, informatization and intelligence have become the main trends of rapid social development. The wide application of digital technology and information technology has changed people's learning methods and broken the time and geographical restrictions on people's acquisition of knowledge.[1] At the same time, digital technology can also provide teachers with a personalized learning and development path to meet the personalized needs of teachers, so as to improve the quality of teacher training.

Improve teachers' ability to apply information technology. The digital transformation of education requires teachers to have certain

information technology application capabilities, such as online curriculum design, use of digital teaching tools, data analysis and processing, etc. By improving the application ability of teachers' information technology, we can promote the deep integration of information technology and education and teaching, and improve the teaching effect of teachers and students' learning experience.

Promote the professional growth and development of teachers. Digital technology provides teachers with opportunities and environments for continuous learning. Teachers can use online learning platforms, digital libraries and other resources for independent learning and knowledge update. At the same time, digital technology can also strengthen the exchange and cooperation between teachers and promote the sharing of knowledge and experience among teachers, so as to improve teachers' professional quality and teaching ability.

2.2 Importance of Building a Teacher Development Service Platform in Vocational Colleges

Talent training with high-quality technical skills is one of the five functions of higher vocational colleges, and high-level professional construction is the key guarantee for talent training. [2] With teachers as the main body, build a teacher development service platform, realize the deep integration of teacher team informatization with teaching, scientific research, management, etc., optimize the allocation of teachers' resources, and meet the personalized development needs of teachers, so as to promote the strategy of strengthening schools with talents. There are the following specific points:

Take business as the starting point to realize the intelligence of teacher management. Support all kinds of business management and teacher team training and recognition of teachers' development in school, such as teacher business management, contract management, teacher training and development, "double-teacher" teacher recognition, teacher ethics management, professional title recognition, etc., and provide secondary management services for department departments, manage all kinds of teachers' on-campus development business online, and realize collaborative and process

office.

Take service as the goal to realize the humanization of teacher service. The teacher login platform can query all-round information such as personal basic information and salary information, and view the development trajectory of individuals in school. Through teachers' portraits, they can clearly understand the gap with standards and point out the direction for teachers' personal development, so as to promote the career development of teachers.

Based on data, establish a dynamic teacher behavior data center. Establish teacher information standards and norms, record the development of teachers in school, build a data center for teachers' behavior, and form a trajectory of teachers' personal career development. Through deep teacher data mining and analysis, a scientific decision analysis model is established to provide leadership-oriented decision support, and understand the development of the school's teacher team in real time, which is conducive to in-depth professional teacher development business innovation.

2.3 The Significance of the Digital Transformation of the Teacher Development Service Platform of Vocational Colleges

With the continuous development of the digital economy and the increasingly prominent status of basic and strategic resources of data elements, "education digitalization" has gradually become the general trend of China's education transformation. [3] Under this background, the construction of a teacher development service platform for vocational colleges will help promote the digital transformation of education in vocational colleges and improve the quality and efficiency of vocational education.

Secondly, studying the value of the construction of a teacher development service platform in vocational colleges and universities from the perspective of digital transformation of education can clarify the goal positioning and functional role of platform construction, and provide theoretical support and practical guidance for the planning and construction of the platform. The content recorded is true, detailed and specific. It can not only play the role of vouchers, basis,

reference and promotion, but also provide an opportunity for teachers to display their achievements. It can also describe the learning and development process of teachers in many ways to provide comprehensive, rich and vivid information for the evaluation of teachers' professional growth. It is an important source of educational intelligence. [4] At the same time, through the value analysis of platform construction, we can also promote the innovation and development of the teacher development service platform in vocational colleges and universities to meet the needs of teachers in education, teaching and professional development.

Thirdly, by studying the dilemma of the construction of the service platform for teacher development in vocational colleges and universities from the perspective of digital transformation of education, we can have an in-depth understanding of the problems and challenges existing in the construction of the current platform, and provide targeted measures and suggestions for solving problems. This will help promote the continuous improvement and optimization of the service platform for the development of teachers in vocational colleges and universities, and improve the service quality and effectiveness of the platform.

Finally, the study of the promotion path of the teacher development service platform of vocational colleges and universities from the perspective of digital transformation of education can provide specific implementation plans and operation steps for the implementation of the platform. It is conducive to ensuring the smooth construction of the platform, promoting the in-depth implementation of the digital transformation of education in vocational colleges, and promoting the professional development of teachers in vocational colleges and the improvement of service quality.

In summary, digital transformation drives systematic and holistic changes in vocational education to solve the practical difficulties faced by digital transformation. [5] The study of the value, dilemma and promotion path of the construction of the service platform for the development of teachers in vocational colleges under the perspective of digital transformation of education is important for promoting the implementation of the digital transformation of

education in vocational colleges, improving the quality and efficiency of vocational education, and promoting the professional development of teachers in vocational colleges and the improvement of service quality. The meaning and value.

3. The Dilemma of Digital Transformation in the Construction of a Teacher Development Service Platform in Vocational Colleges and Universities

3.1 Poor Data Quality

Data quality is a major challenge in the process of digital transformation. Most college personnel information is still a traditional decentralized management mode. When teachers' personnel information changes due to academic promotion, job level adjustment, etc., the staff of each department often fail to update the information in time due to their own work. In the long run, the same personnel information data between departments has become more and more accurate. The lower it is, the more it will affect the follow-up work. [6] Therefore, there are obvious quality problems in teacher data, such as inaccurate data, incomplete information, and untimely update. These problems seriously affect the validity and reliability of data, making it difficult for the platform to provide accurate data support for teachers, and also unable to provide a strong scientific basis for school decision-making. In addition, due to the lack of unified standards for data collection, storage and use, the system has great differences in data processing. This not only leads to a lack of comparability between data, hinders the interoperability and sharing of data, but also greatly increases the difficulty of data integration. This situation not only wastes valuable educational resources, but also limits the full play of the functions of the teacher development service platform.

3.2 The Management System Cannot be Implemented

The modernization of vocational education is an important aspect of educational modernization and an important foundation for building a new highland for the development of modern industries and achieving high-quality development. [7] In fact, the system is disconnected from implementation,

the relevant institutional design is too idealistic, fails to fully take into account its practicality and pertinence, and there is a large gap with the actual implementation environment, which makes it difficult for them to adapt to complex and changing business management needs in practice, which not only weakens the binding force of the system, but also increases the difficulty of implementation. First of all, there are "congenital" diseases in the shortcomings of this management concept, and the lack of scientific and practical standards in the top-level design of the system, resulting in many problems in the implementation process. [8] Secondly, the lack of business coordination leads to information island phenomenon. The fragmentation of various departments and the lack of information sharing and exchange lead to the timely transmission of key information, which affects the implementation effect of the system. If the information management structure cannot be effectively operated, it will cause the problem of loose overall information to establish a unified whole, and the fragmentation of data information will also restrict its application value and application efficiency. [9] For example, teaching, scientific research and other departments may not understand the actual needs of personnel departments, while teaching, scientific research and other departments may not be aware of the changes in personnel policies and cannot meet the business management needs of personnel on teacher development in a timely manner. This information asymmetry creates obstacles in the implementation of the system, which not only affects the efficiency of system implementation, but also increases management costs.

3.3 Insufficient Business Informatization Coverage

Under the background of the digital transformation of education, the informatization of teacher business is the key to improving the work efficiency of teachers and promoting the professional growth of teachers. At present, the teacher business has not been fully informed, and individual businesses still rely on traditional paper documents and manual operations. This management method is time-consuming, laborious and inefficient, and it is difficult to meet the needs of modern management of

colleges and universities. [10] The lack of information-based support makes it difficult to simplify and optimize management processes, affecting work efficiency and service quality. Secondly, insufficient business informatization coverage limits the sharing and use of data, so that it is difficult to communicate and share data between departments, and the phenomenon of data isolation is serious. This not only makes it impossible for data resources to give full play to their value, but also makes it more difficult for data integration and analysis.

3.4 Weak Intelligence of Business Statistics

The construction of teacher informatization in colleges and universities requires a strong technical team to build the informatization implementation of specific businesses of teacher management and work implementation in colleges and universities. [11] At present, many vocational colleges still rely on traditional data statistics and analysis methods, such as manual input and simple table summary, in the quantitative management of teacher performance data. These methods seem to be incomparable in dealing with complex computing rules and cannot meet the needs of modern teacher development and training. In addition, in the management process, it is often faced with problems such as data entry errors and untimely data update, which not only affects the accuracy of statistical results, but also weakens the timeliness and effectiveness of management decisions. For example, for teachers' performance appraisal, scientific research achievement evaluation, teaching quality evaluation, etc., it is necessary to comprehensively consider multiple indicators and factors and carry out complex calculation and analysis. Traditional statistical methods are difficult to perform such tasks, resulting in inefficient management and insufficient decision-making basis.

3.5 Insufficient Service Capacity

The scope of services of the existing system is limited, which can only meet the basic needs of teachers, and cannot provide personalized or high-end services, which weakens the attractiveness and competitiveness of the service. This phenomenon is relatively common in personnel file management in

colleges and universities, both related to digital technology and the weak sense of active service of some staff. [12] This limitation may stem from the lack of forward-looking innovation awareness in management or services, and the failure to capture the personalized and diversified development needs of schools or teachers in a timely manner, resulting in a single content and lack of characteristics of services. We should pay attention to the construction of teachers' career development and promotion mechanisms to provide teachers with more development opportunities and space. [13] At the same time, insufficient resource investment is also an important reason. Whether it is human resources, technical resources or financial resources, it may affect the richness and characteristics of service content.

4. Ideas for Digital Transformation of Teacher Development Platform

The core of the digital transformation of education is to promote the digital transformation of all elements, business, fields and processes. With the help of digital technology, build a digital teacher development service platform, activate the internal drive development of teachers, and lead the independent growth of teachers, so as to form an internal drive model for teacher development (Figure 1), provide a realistic basis for the effective construction of a teacher development service system, provide management support for standardize the business process of teacher development, realize the complexity and complexity of business, turn "single-alone fight" into "cooperative combat", unify the standardization of teachers' development business processes, improve the efficiency of teacher development services, and promote efficient business collaboration.
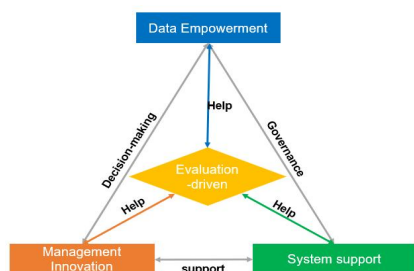
Figure 1. Internal Drive Model of Digital Transformation of Teacher Development Service

4.1 Let the Platform Help

The professional development of teachers directly determines the realization of the goal of talent training and the quality of education and teaching. Schools should build a professional development platform for teachers, so that teachers can feel professional happiness in their professional growth. [14] Building a teacher development service platform is not only a concrete embodiment of school management innovation, but also an important means to improve the quality of teachers and promote the connotation development of schools. Deeply intervene in the professional growth process of teachers, accurately guide and support the professional development of teachers, and help them continuously broaden the field of knowledge, improve teaching skills, and meet various challenges in the field of education. It can achieve comprehensive management and accurate guidance for the professional development of teachers, and ensure that every teacher can get learning opportunities and resource support that match their needs. At the same time, the system can also promote exchanges and cooperation among teachers, form a positive learning atmosphere, and further improve the overall education level of the school.

4.2 Empower the Data

Under the background of artificial intelligence to promote the construction of teachers, it is more and more important to achieve accurate evaluation of teachers' abilities and help their personalized development with the help of portrait technology. [15] By systematically collecting and analyzing teachers' development data in school, a comprehensive teacher behavior data center is built, and then a personalized data portrait is drawn for each teacher. It not only helps to deeply explore the big data of teachers' careers, accurately depict the trajectory and cycle of their growth, but also promote the all-round development of teachers in their careers. Through such data analysis, teachers can clearly recognize their strengths and weaknesses in career development, so as to get a clearer and more accurate direction of improvement. In addition, these data can also provide strong support for school decision-making, optimize teacher

management, and improve teacher service quality. In this way, it can not only help teachers fully understand their career development, but also lay a solid foundation for their professional growth and the overall development of the school.

4.3 Let Management Innovate

The synergy of "platform assistance + data empowerment" can effectively stimulate the innovative vitality of the management model and significantly improve the school's effectiveness in teacher training and development. 1 Establish a more scientific performance management system, stimulate teachers' enthusiasm and innovative spirit through clear goal setting, fair performance evaluation and incentive reward and punishment mechanism, and promote them to continuously improve their teaching level and professional quality. 2 Provide teachers with more sustainable professional development opportunities. For example, teachers are encouraged to participate in external training and further training courses, and mechanisms such as teaching rewards and scientific research achievements are set up to encourage teachers to continuously improve their personal teaching, scientific research and management capabilities. 3 Promote teamwork and knowledge sharing. Build a knowledge sharing platform, promote exchanges and cooperation among teachers, and jointly study and solve problems encountered in education, teaching and scientific research. At the same time, teachers are encouraged to share their teaching experience and teaching resources to form a positive learning atmosphere.

5. Propulsion Path

5.1 Standards and Health Data

Universities need to build professional teacher training institutions and platforms, provide resource support and exchange and cooperation platforms for teacher training, set up teacher training institutions or centers, and be responsible for the teacher training of innovation and entrepreneurship education. [16] Based on the construction of a teacher development service platform with the characteristics of higher vocational colleges, carrying out data governance, find out the existing data resources of the school, clarify

the structure, establish data standards and information system, standardize the talent structure system, and unify and standardize the whole process of teacher data collection, storage, processing, sharing and application., realize information interconnection with various sub-information systems such as finance, academic affairs, scientific research, student work, party affairs, etc., ensure the consistency and traceability of data, form a full life cycle data center for the development of teachers, and lay a digital foundation for teacher development services (Figure 2). At the same time, improve the efficiency of data use, give full play to the efficiency of data empowerment, and empower business and management.
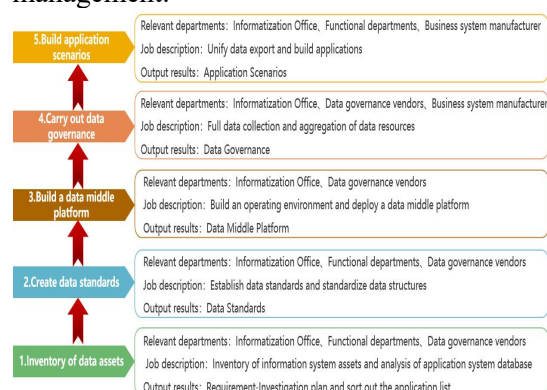

Figure 2. Data Governance Chart

5.2 Rules and Solidify the Process

Through informatization and digital management means, focus on the full life cycle of teachers' career development, establish visual, scenario-based and standardized business processes, clarify the standardization and hierarchical management of each business process, system process, process form, form informationization, information intelligence, and data-driven business and industry. Update the data to ensure the effective integration of business and data to achieve intelligent closed-loop management. Through scenario-based business process reengineering, integrate, optimize and even reshape teacher information collection and review, position/professional title appointment approval process (Figure 3), dual-teacher teacher identification approval process, high-skilled talent identification approval process and other business processes to achieve flexible business handling, efficient coordination, and improve management
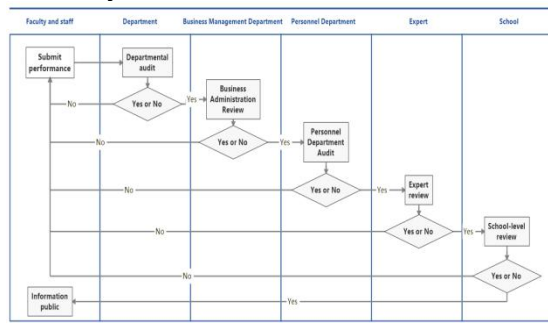
efficiency.

Figure 3. Job Title Appointment Flowchart

5.3 Setting up Scenarios and Promoting Applications

For daily or temporary business, the general scenario is highly targeted, the object-oriented is not fixed, and the timeliness requirements are high. The use of platform empowerment can support the business to be selected and carried out on demand. By promoting the business construction of typical talent management scenarios such as professional title evaluation, cadre management, democratic evaluation, democratic recommendation, and term assessment, we will innovate the management model of teachers and talents, promote the implementation of fine management of teachers and talents, and greatly improve work efficiency and management efficiency. Use label technology to unify the internal selection and use of people label language, form talent labels, enrich talent portraits, and quickly locate suitable talents. It can also carry out multi-dimensional analysis of human resources through the leadership evaluation model, accurately gain insight into the ability of managers, inventory talents, find outstanding talents, build a talent echelon, and assist leaders in scientific decision-making.

5.4 Algorithm and Cost Control

According to the Guiding Opinions on the Implementation of Performance Wages by Other Public Institutions in Shanghai (Shanghai People's Social Assets Development [2011] No. 62) and the Notice of the Shanghai Municipal Education Commission on Printing and Distributing the Guiding Opinions on the Implementation of Performance Wages by Other Institutions of the Shanghai Municipal Education Commission (Trial) (Shanghai Education [2014]8 The spirit of the documents,

in order to promote the development of education, carry out the implementation of performance wages, strengthen the standardized management of performance wages in public institutions, and encourage teachers to be positive and give full play to their talents. In the process of realizing intelligent salary management, the platform should clarify the algorithm rules and do a good job in complex businesses such as salary changes, salary payment, and total amount control, so as to implement the salary system, ensure accurate data and controllable costs, and take the performance salary of the teaching department as an example:

5.4.1 The Connotation of Performance Pay

The performance salary that can be distributed independently by each department (department) refers to the workload allowance and incentive allowance, performance reward salary and special reward salary in the basic allowance.

5.4.2 Performance Salary Amount Accounting

1) Accounting for the amount of workload allowance

Total amount of school workload allowance = 60% of the total amount of school performance pay - total amount of post allowance.

That is:

$$M2=60\%M-M \tag{1}$$

Workload allowance base

$$=\frac{\text{Total amount of school workload allowance}}{\text{Total job coefficient of the whole school}}$$

That is:

$$J=\frac{M2}{\sum Xi} \tag{2}$$

J: Base of workload allowance (yuan/unit coefficient)

Xi: Post coefficient.

According to the total performance salary issued by the superior, the base J of the workload allowance for the new year needs to be re-approfised every year.

Amount of workload allowance for each department (department):

$$m2=J*\sum Xi\text{(the sum of departmental post coefficients)} \tag{3}$$

m2: Total departmental workload allowance (yuan/year).

2) Calculation of incentive allowances

(Total incentive allowance for the whole school's teaching department)

$$M3=15\%M\times\frac{\text{Total number of teaching departments}}{\text{Total number of students in the school}} \tag{4}$$

After the total incentive allowance of all

teaching departments is determined, the incentive allowance amount of each department (department) shall determine the incentive allowance amount M3 allocated to the department according to the number of teachers and staff (including counselors), the number of students equivalent, etc.

Part of the incentive allowance amount of the department (department) is calculated according to the number of students as equivalent, and the other part is allocated according to the post coefficient of the faculty and staff:

$$m3=K*(L*\frac{\text{The equivalent number of students in this department}}{\text{The equivalent number of students in the whole school}}*M3$$

$$+(1-L)\frac{\sum xi(This\ department)}{\sum Xi(All\ teaching\ departments)}*M3\ )\quad(5)$$

m3: Total amount of incentive allowance for the department (yuan/year)

K: Reward coefficient, the department's annual assessment of excellence is 1.05, the qualification is 1, and the basic qualification is 0.97;

L: The weight coefficient of the equivalent student;

Xi: Post coefficient.

5.4.3 Performance Reward Salary Amount Accounting

It is determined according to the performance appraisal results of the department (department) in the previous year.

5.4.4 Special Reward Salary Amount Accounting

Special incentive salary is a part of incentive performance salary, which is paid according to the nature of the post work and the specific tasks undertaken by the department and staff.

5.5 Stand up for Service and Experience

Through the construction of the teacher development service platform, for all teachers and staff, the data can effectively reach each link, and enhance the platform's ability to serve the development of teachers, such as post evaluation, professional title evaluation, high-level talent identification and dual-teacher teacher identification, so as to improve the experience and satisfaction of employees at different levels and roles. The enthusiasm of teachers and officers in entrepreneurship. At the same time, improve the service experience, personnel business self-service processing, online approval, independent inquiry of employee information, such as on-the-job (retirement) certificate issuance, salary income certificate issuance, teaching workload inquiry printing, scientific research achievements inquiry printing, contract inquiry printing, etc. At the same time, the mobile platform is launched to make business processing more comfortable. The work efficiency is more efficient, and the leadership board helps scientific decision-making to improve the service experience in an all-round way.

6. Sum up

In promoting the digital transformation of education in vocational colleges, we are in a new era where opportunities and challenges coexist. Digital transformation not only provides new paths and tools for the development of teachers in vocational colleges, but also brings many difficulties and challenges, such as rapid technology update, uneven resource allocation, and insufficient digital literacy of teachers. However, it is these dilemmas and challenges that inspire our enthusiasm for continuous exploration and innovation.

Looking forward to the future, the digital transformation of education will continue to deepen, and the construction of a teacher development service platform for vocational colleges will also continue to improve. We expect that in this process, more educators can participate in this great cause, jointly promote the process of digital transformation of teachers' development services, and contribute to the training of more high-quality technical and skilled personnel.

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