Professional Development Strategy of Young Teachers Based on Big Data

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Abstract: Since the 21st century, the development speed and scale of higher education have been increasing rapidly, and the society and higher education itself are constantly putting forward higher requirements for it. As an important part of higher education organizations, young teachers' quality and development speed greatly influence the development scale of higher education. Therefore, based on the academic development status of young teachers in provincial colleges and universities, this paper makes research and discussion, in order to seek new ideas of professional development management of young teachers in local colleges and universities. Young teachers are the future of the development of colleges and universities. As the main force of teaching and scientific research, the professional development of young teachers is the focus of attention of colleges and educational management departments. Facing the impact of big data on traditional college education, young teachers at the initial stage of career development have many new problems in the process of professional development. On the basis of expounding the concept and connotation of the big data era and teachers' professional development, Chapter II analyzes the challenges faced by young teachers' development and proposes ways for young teachers in vocational schools to develop their professional skills in the big data era.

1. Introduction

Under the background of the high-speed development of today's society, higher education is constantly breaking through the challenges of development not only in speed but also in scale, in order to better meet the requirements of society[1]. Under the guidance of the theory of new public administration, higher education, as a public product, is constantly seeking its own better development. As an extremely precious human resource in colleges and universities, the quality and development level of teachers not only determines the competitiveness of colleges and universities, but also determines the quality level of higher education in China[2]. Education in colleges and universities is a kind of knowledge innovation and imparting education. With the development and application of big data technology, the impact of the Internet on teaching and learning in colleges and universities is increasingly significant. The trend is hard to change, so we can only follow the trend[3]. According to the statistics of the website of the Ministry of Education, as of 2013, the total number of full-time teachers in colleges and universities in China has reached 1.495 million, of which 658,000 are young teachers under the age of 35, accounting for 44.01% of the total number

of teachers. As an important part of colleges and universities in China, local colleges and universities have 2,442 general colleges and universities in China by 2013, of which 1,623 (excluding 704 private colleges and universities) are local colleges and universities, accounting for 71.1% of the total number of general colleges and universities[4]. The young teachers in local colleges and universities account for about 60% of the full-time teachers in local colleges and universities. Therefore, the training and development of young teachers is not only a realistic problem faced by the development of higher education in China, but also an important issue that colleges and universities should focus on[5].

The development level of young teachers not only directly affects the development of students, but also has a significant impact on the development level and quality of higher education in universities and even the whole country[6]. As an important part of educational activities, teachers' quality and level directly affect the quality of education and the smooth implementation of educational reform. Therefore, it is more and more important to improve teachers' professional quality through teachers' professional development. In the age of big data, a large number of virtual platforms and resources are provided for teachers with the help of the network, such as the integrated platform for teachers' online research and training, online learning space, famous teachers' studio, teachers' workshop, public service platform for educational resources and other open education platforms[7]. Through these network platforms, teachers can learn and study independently according to their own needs and the actual situation of teaching activities, constantly improve their professional quality and achieve professional development. In the era of big data, teachers' knowledge dissemination is no longer the focus. The focus is on how to cultivate students' ability to efficiently obtain the knowledge they need from massive resources. Students will actively acquire the knowledge they need from teachers and big data. Active learning will become the norm[8]. This research takes young teachers in local colleges and universities as the research object, analyzes the problems existing in the development of young teachers in local colleges and universities through the interpretation of the history of the development of college teachers and sorting out some relevant theories, further clarifies the development status and difficulties of young teachers in local colleges and universities through research, and thus proposes effective ways and strategies for the development of young teachers in local colleges and universities, It provides a good theoretical basis and practical reference for the rational development and utilization of young teacher resources in local colleges and universities.

2. Research on the Development Theory of Local Young Teachers in Colleges and Universities

2.1 Definition of Core Concepts

The American Internet Data Center defines "big data" as a new technology architecture that can capture, discover and analyze high-speed data to obtain value from large-capacity data[9]. It can be summarized as four English letters V, namely, larger Volume, higher Variety, faster generation speed, and the fourth factor driven by the combination of the first three V's-Value. The American Internet Data Center defines "big data" as a new technology architecture that can capture, discover and analyze high-speed data to obtain value from large-capacity data. It can be summarized as four English letters V, namely, larger Volume, higher Variety, faster generation speed, and the fourth factor driven by the combination of the first three "V's"-value[10]. The problems of teachers' academic management in higher education in China are emerging day by day, which gradually causes higher education scholars to think about the concept of academic management. Teachers' professional development is defined as the process and activity of improving educators' professional knowledge, skills and attitudes, and accordingly, educators can promote students' learning progress. Therefore, teachers' professional quality is directly related to teaching quality and teaching effect.

William H. Beirgquist and Steven R. Phillips model is the first model of university teacher development. In 1975, they first proposed in the article "Components of Effective University Teacher Development Program". This model is designed based on the case history study and the author's practical experience in participating in the university teacher development project, and integrates the views of many works. Young teachers in local colleges and universities may be dissatisfied with the current situation of life or have opinions on school policies, and such dissatisfaction and opinions cannot be reasonably released and resolved. They will show negative resistance to teaching, and will refuse to accept that even if they are in a good organizational atmosphere, teaching quality will still be affected. On the contrary, if all indicators can satisfy young teachers, their enthusiasm for teaching will increase, they will be willing to accept new knowledge and change, and the development effect will be better. However, if teachers have a good attitude towards development, a strong willingness to develop, and a positive attitude, but the school does not provide a good organizational environment, it will still not achieve good development results. Therefore, as with teaching development (process), personal development (attitude) and organizational development (structure) are equally important, or they depend on each other and interact with each other. See Table 1 for details.

Table 1: Theoretical Model of Burgevist and Phillips

	Attitude	Process	Structure
	Personal development	Teaching development	Organization development
A key	Individual teacher	Individual teacher, teaching progress, curriculum	Academic and Administrative Management Plan, Departments and Departments
Target	Clarify values, attitudes and educational philosophy to improve teachers' inner and interpersonal functions	Improve teaching efficiency	Improve organizational effectiveness
Activity	Life planning workshop, teacher interview, interpersonal function training, personal growth workshop	Classroom observation and diagnosis, micro teaching evaluation, teaching methods and technologies	Component team, conflict management, decision-making, management training

2.2 The Main Ways of Young Teachers' Development

Since 1996 and 1997, two policies and regulations on teacher training in colleges and universities (Working Rules for Teacher Training in Colleges and Universities and Provisional Rules for Pre-service Training of Teachers in Colleges and Universities) were issued, the training of teachers in colleges and universities in China has been established in the system. Colleges and universities have carried out pre-job training for newly introduced teachers. Young teachers who are new teachers do not divide disciplines, and conduct unified training in pedagogy, psychology and other teaching-related courses. Teacher training has become the main way for the development of young university teachers. Academic exchange and going out for further study can enable young teachers to concentrate their energy and time on using superior educational resources, improve their academic literacy and research ability in the shortest time, and integrate into the research team. It is also the most direct and effective development mode. The disadvantages are that it is easy to be restricted by the school environment and system, and it is not easy to popularize it in a large scale, and the practice of further study is not targeted and lacks timeliness. But at present, it is also one of the mainstream ways for the development of young teachers in colleges and universities in China. For example, in 1880, the academic leave system was first established in Harvard University. Eliot, then the president of Harvard College, approved that teachers who had worked for more than seven years could take a leave and enjoy half pay during the leave. In some ways, the academic leave

system not only alleviated the job burnout of American college teachers at that time, but also stimulated the teaching enthusiasm of college teachers, improved scientific research innovation, and also stimulated the vitality of the faculty. To sum up, the four aspects of young teachers' development are interrelated and mutually reinforcing. Personal development runs through the whole career of teachers, and even continues to the life after work. Therefore, personal development is the purpose. The most essential activity of teachers is teaching. It is true that teaching development is the foundation of teachers' development and the core of ensuring education quality, while organizational development is the guarantee, providing a good organizational environment for the development of teachers in other dimensions, and ensuring the good development of other dimensions. Try to map the internal relationship between the "four elements" as shown in Figure 1.
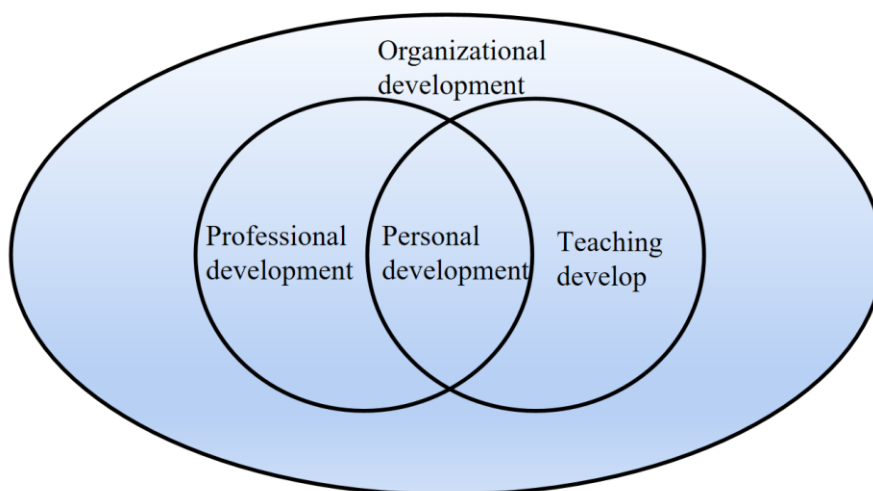

Figure 1: Relationship Diagram of Young Teachers' Development Dimensions

Generally speaking, the narrow sense of teacher development in colleges and universities refers to activities to improve teachers' teaching level and promote their scientific research ability, while the broad sense of teacher development in colleges and universities refers to the comprehensive development of teachers as a person. Its main contents include the development of teaching skills (improving college teachers' daily teaching skills, promoting students' learning ability and improving teaching results), the development of professional skills (the maturity and improvement of teachers' professional roles) The development of the organization (the improvement of the environment in which all personnel in the school live, and the creation of a more harmonious and positive campus culture) and the development of teachers themselves (activities to improve teachers' communication ability, improve health and promote professional development). With the advent of the network era, providing network technology equipment and tool platform has become an important way for teachers to develop. Compared with the domestic teacher development mode, the foreign development mode is diverse and highly targeted, and many aspects are worth learning from in our universities.

3. Discussion on Strategies for Academic Development Management of Young Teachers in Big Data Environment

3.1 From the Perspective of Young Teachers Themselves

As a career choice, you should have a brief understanding and familiarity with the career at the

beginning of choosing a career. Once you choose carefully, you should be responsible for your choice. As a highly cultivated profession, university teachers have already affirmed their academic ability and self-worth at the beginning of their employment. Academic ability is a distinctive feature that distinguishes college teachers from other primary and secondary school teachers. The training of young teachers in colleges and universities mainly includes the training organized by education management departments, colleges and universities, as well as other training actively participated by individual teachers. In order to ensure that young teachers can effectively improve their abilities through a series of diversified and professional training, teaching and scientific research, the two organizations must establish a systematic training system. Higher education higher management departments coordinate the teacher training management of subordinate colleges and universities, organize, coordinate and integrate the training networks of various colleges and universities, provide support for college teacher training centers, and play a supervisory role.

In the big data environment, traditional education is facing great changes. Thanks to the convenience of Internet communication, knowledge and information are exploding, and the update speed of knowledge and information is fast. On the whole, the speed at which people learn knowledge can hardly keep up with the speed at which new knowledge is produced and disseminated. At the same time, in the big data environment, the sources of college students' knowledge are diversified, and the learning resources are extremely rich. University teachers are no longer the only knowledge producers and disseminators. Young teachers should have keen insight into all kinds of complex data generated in the process of teaching and scientific research, attach importance to the role of data in promoting teaching and scientific research ability under the big data environment, and be good at objectively analyzing and evaluating the process of teaching and scientific research based on data. The second is to improve young teachers' big data analysis ability through professional learning. Big data analysis requires a high level of data processing ability. Based on big data technology, new technologies such as cloud computing and mobile platform are applied to improve the level of educational informatization. Therefore, young teachers can better adapt to the requirements of higher education under the big data environment on the premise of mastering big data analysis technology. Therefore, young teachers' informatization ability is not strong enough, and they are still in the exploratory stage.

The important position of teachers' profession in society and their high social status will bring physical and psychological satisfaction to teachers. Secondly, this characteristic of researchers determines that college teachers do not follow the book knowledge and indoctrinate students. In the process of knowledge transfer, the innovation of knowledge theory is the biggest feature that distinguishes college teachers from primary and secondary school teachers. For any professional, the most basic professional principle is to love your job and be dedicated to your work. No matter what kind of industry or position they are engaged in, professionals should adhere to the ethical code of conscientiousness, complete their work affairs better and more efficiently, shoulder their professional responsibilities, and give light to their work. College teachers are senior engineers of the human soul. Their primary task is to preach and impart knowledge to students, followed by their own scientific research practice. Teaching ability and academic ability are two indispensable pillars for college teachers in their career development. In addition, as young teachers have just left their student careers, they still maintain a high learning ability and enthusiasm. In the heavy daily work, maintaining good learning habits and attitudes is very important not only for young teachers in the "primitive accumulation period", but also for their own sustainable development.

3.2 In Terms of School Management Mechanism

In the teaching and scientific research management activities in colleges and universities,

personnel work is the most complicated and uncontrollable work. As the objects of personnel management are thousands of different people, there is no universal method of handling affairs. In addition, in the process of work, the ability and wisdom of personnel will greatly affect their work results and the efficiency of the department. Therefore, how to implement efficient and targeted personnel management activities is of great significance not only to the professional development of college teachers, but also to the high-quality development of colleges and universities. The human resources management work will be meticulous and professional, and there will be a supporting system supply. All staff engaged in human resources management have corresponding professional background requirements and professional qualification requirements, and at the initial stage of employment, provide new recruits with complete pre job training and assessment during internship. In contrast, the entry threshold for managers in the personnel department of colleges and universities in China is low, and there is no hard requirement for the professional background and qualifications of staff. A considerable number of personnel personnel are transferred to enter, so they do not know much about the knowledge system of human resource management and the work content and concept. Since China started its own school in the late Qing Dynasty, the principal has basically mastered the personnel rights of the school. The principal employs teachers in various ways, and indicates the employment conditions in relevant documents. Relevant personnel management organizations and full-time personnel are set up in schools of all levels and types to engage in the employment, training, distribution, performance appraisal, promotion, rewards and punishments of relevant teaching and administrative staff in schools under the command of school leaders. Personnel departments (departments) are set up in general colleges and secondary specialized schools. Among them, the personnel management department of colleges and universities is mainly responsible for the corresponding assistance work and the later finishing work, which does not have a decisive role in the selection and employment of personnel. In addition, in recent years, the admission mechanism of professional teachers and administrators in schools has become more and more strict, and the proportion of young and middle-aged personnel is unreasonable. Unreasonable allocation of various resources in human resources and unclear division of responsibilities among various jobs in colleges and universities are prominent, which are urging the reform of personnel system in various colleges and universities in China.

At present, the internal performance management system of Chinese universities is still relatively imperfect. In the development and improvement of the performance management system, the performance appraisal of employees' work is only a small part of it, but the system design and evaluation of the performance management at the beginning is a more important part. Among them, the evaluation of performance management system is an important link ignored by many implementers. The evaluation of the performance management system is essentially the debugging and improvement of the problems in the actual work of performance management, which is the constant reflection of the implementer in the implementation process. This is not only the process of adapting to the corresponding organizational characteristics when performance management is combined with different organizations, but also the process of continuously improving the effectiveness of performance management. The performance management system lacking this content is incomplete and unsound. Therefore, only by building a complete and scientific performance management system can we ensure that performance management plays a role in university governance. In view of the development of college teachers, the government and colleges and universities are in different positions. The starting point of the government's goal is more concentrated on the macro level of China's higher education development, while for each university, it is more from the university's own development. The development of university teachers is only the way to achieve their goals. Therefore, in actual management activities, the government and universities should strengthen cooperation and interaction to form a joint force to promote the

development of teachers' academic ability and academic self-restraint in quantity and quality.

4. Conclusions

There are many factors influencing the academic development of professional teachers in contemporary colleges and universities, including the internal governance factors of colleges and universities, as well as the internal factors of higher education system and the external factors of society and government. The development of college teachers not only plays an important role in teachers' personal career development, but also plays an important role in the development quality of the whole higher education. Young teachers' professional development is not only a process of individual development, but also a process of group development. The coordinated growth of teams can create an excellent team environment, reduce the pressure on young teachers, promote their professional development, and finally make individuals become the main body of professional development. This paper analyzes and studies the strategies for teachers' independent professional development in the big data era, aiming to promote the professional development of teachers in the big data era and improve their professional quality. The ultimate goal is to meet the needs of students, adapt to the development of society, and promote the realization of teachers' self-worth, which reflects the "people-oriented" idea and the trend of the times of the integration of technology and education.

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