A Review of Opportunities and Challenges of Chinese Teachers' Development in the Age of Intelligence

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ABSTRACT

The network era has gradually changed to the intelligent period, and all walks of life are undergoing profound changes. Education is closely related to the future and destiny of the country. In order to enable the government to lead the trend of the times, we must reform education promptly, on time. Teachers, as the implementers of education, play an irreplaceable role in education. Therefore, in the context of the intelligent age, they should and must re-examine themselves to make a new positioning of themselves. This paper analyzes the opportunities, problems and challenges of the intelligent period, and proposes the paths and strategies for teachers' development in the intelligent period.

Keywords: *Intelligent Era, Teachers' Development, Teachers' Ability, Opportunities And Challenges, Strategy Research*

1. INTRODUCTION

With the progress of technology and the development of artificial intelligence and 5G technology, society is undergoing radical changes, and all walks of life are experiencing profound changes. The education industry is also undergoing various changes due to the penetration of intelligent technology: the rapid development of teaching APPs such as Super Star and Rain Classroom, the rise of live streaming software such as Nail and Tencent Classroom, and the increase in blended teaching based on the flipped classroom model or SPOC model of blended education have become popular in various universities. [1]

Nowadays in China, as Yukun Chen, the director of East China Normal University's Institute of Examination and Evaluation and the director of the Catechism Center, says, " Entering a new period, technological revolutions such as big data, cloud computing, and mobile Internet are bringing education to the 4. 0 era of self-organization of teaching, socialization of learning, and visualization of thinking. " [2] Thus, it is clear that the trend of reform in education is inevitable, and we should learn to conform to it. Nowadays, intelligent devices have entered the campus, which has broken the traditional classroom teaching mode and impacted the traditional teaching concept. The learning model based on the idea of autonomy, cooperation and inquiry has become the

mainstream. Accordingly, teachers are required to make changes in the context of intelligence to promote the shift in education. We found that " teacher development" is a hot topic that has been discussed in the society, but " intelligent teacher development" is not as hot as the research, and we can find that the gap between the two is the gap between the two is very large, but the intelligent era is the inevitable trend of future development. In the context of the intelligent era, it is worth considering how teachers should learn to develop and use intelligent technology to improve their abilities.
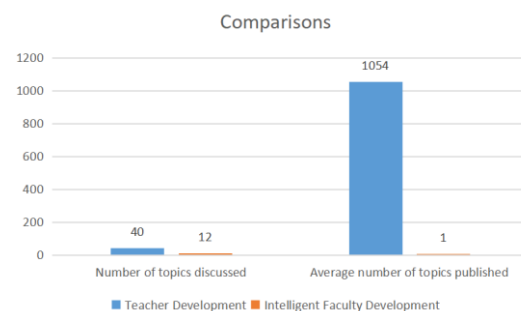

Figure 1 The comparisons of teacher's faculty development and teacher's intelligent faculty development in terms of discussion topics and average number of topic developments

2. OPPORTUNITIES FOR TEACHERS' DEVELOPMENT IN THE AGE OF INTELLIGENCE

In the age of intelligence, teachers' education and teaching have the following opportunities.

2. 1Increasingly Rich Teaching Resources

In the context of the intelligent era, teachers' teaching resources are no longer confined to traditional textbooks, educational books or libraries. Xiaolin Huang, an expert of the Technology Standards Committee of the China Educational Technology Association, says that teachers' acceptance of information technology products has increased like never before, and cloud teaching and research, cloud teaching, cloud collaboration, and cloud training tend to be the norm. [3] The development of these network technologies has enabled teachers to have a broader source of teaching resources, to realize networked teaching research and teaching, to facilitate mutual communication and training among remote education, etc. Excellent educational experiences can be delivered to the needed people through the network in a timely manner, which undoubtedly facilitates teachers' teaching in remote areas and provides more possibilities for them to keep up with modern education. Teachers who want to promote their professional development can use the intelligent network as a tool. The network synchronous training platform focuses on the balanced development of basic education, points to promoting teachers' professional development and enhancing the effectiveness of classroom teaching, and takes expert leadership, backbone demonstration, peer support, case study, and independent improvement as the essential features to realize the synchronous implementation of classroom teaching and subject teacher training for all teachers. [4]

2.2More Teaching Tools in Line with Modern Education are Born

In the background of the intelligent era, teachers no longer only use the traditional and single tool like a blackboard to teach. Many teaching aids and applications have been on the " stage" of teachers' teaching, which can make teaching more simple, convenient and interesting, and more likely to attract students' interest in class. With the development of new teaching aids such as MOOC, Study Talk, Rain Classroom, Nails, Tencent Classroom, etc. , the flexibility and interest of education is gradually increasing. These modern and intelligent teaching tools also promote the development of information-based teaching, providing teachers with cloud courseware, subject tools, teaching resources and other lesson preparation functions, helping teachers to do an excellent job of teaching interactive links, mastering the quality of teaching links and improving teaching standards.

Teachers who can master the relevant software and tools and make the coordination between human and machine can realize the development of teachers' teaching skills to a certain extent.

2.3The Intelligent Era makes It Possible for Teachers to Get Rid of Some Tedious Mechanical Operations

In the real educational work, many teaching tasks are still meaningless mechanical operations, actually. For example, in a mathematics classroom, the teacher has to quickly and accurately correct the oral arithmetic exercises for the class of more than forty students and explain the easy-to-error problems. It is a mechanical operation that consumes the teacher's energy and time to correct these forty-odd students' nearly repetitive assignments. Under the background of the intelligent era, teachers can use smart devices or intelligent APPs to correct homework with one click, which can save time for classroom teaching and provide more time for teachers to conduct targeted teaching. [1]

2.4The Teacher Education Model has Changed

Traditional teacher education activities have the following apparent disadvantages. First, traditional teacher education activities, which are often held offline, are mainly conducted using methods such as unified centralized training, thematic lectures, and social practice activities. The organizers of teacher education activities often need to plan the activities in advance, and the content of the courses is more uniform and standardized, with less consideration for the individual needs of teachers and their development needs at different stages, which leads to low motivation of the participating teachers. Secondly, traditional teacher education activities are often conducted regularly and at a fixed time, so that the problems teachers encounter in the actual teaching process cannot be solved in a timely manner. Finally, traditional teacher education activities often lack follow-up work for teachers who participate in teacher education, which leads to problems such as periodicity and discontinuity in teacher education. The actual needs of teachers arising from their current teaching work are naturally not met. All of these aforementioned shortcomings prove that the practical effects of traditional teacher education activities are not strong.

The advent of the age of intelligence has transformed the traditional model of teacher education. Based on an accurate understanding of their own development, teachers are able to break through the limitations of time and space and freely choose the relevant courses to study accordingly according to the characteristics of their subjects, interests and specialties, and work needs.

3. PROBLEMS OF TEACHER DEVELOPMENT IN THE CONTEXT OF THE INTELLIGENT ERA

In the context of the intelligent era, we also need to see the problems and challenges it brings at the same time.

3.1 The proliferation of teaching resources and the unevenness of teaching resources.

The technological support of the intelligent era allows teachers to share resources among themselves over long distances via the Internet. Each teacher can share their excellent education experience and teaching resources on the network for peers to learn from and discuss if necessary. However, there are still some problems, such as the inconvenience of instant communication among teachers and the lack of sufficient time for the teaching resource management platform to review all these contents. The teachers have different levels of screening educational content according to their abilities, and it is inevitable that some contents are not suitable for classroom teaching.

3.2 The problem of the popularity of intelligent teaching tools

As the development level of each region is different nationwide, the development level of the eastern region is higher than that of the western region, and the development level of the southern region is higher than that of the northern region, which will lead to a significant difference in the popularity of intelligence. In the eastern region, especially in the east of coastal region, the level of economic development is high, and the intelligent process of education and teaching is obviously faster than other regions, which will intensify the unevenness of education development between regions. In regions with lower or even ultra-low level of intelligence penetration, students' learning styles and means will also lag behind other regions. This adds an obstacle to their future entry into the first-tier cities in the east to compete with their peers for job positions. [5]

3.3 The convenience of the intelligent age may make teachers lose their creativity and their thinking about teaching

The age of intelligence has undoubtedly lightened the entire teaching process for teachers. In terms of lesson preparation, teachers are able to easily access online teaching resources without having to prepare them all by themselves; from the perspective of lessons, teachers can use the teaching tools that come with intelligent devices to assist in teaching. Under such convenient conditions, some teachers may become inert and obtain teaching resources from the Internet without thinking and creating, and apply them directly to the actual classroom, which is

not conducive to teachers' quality improvement and development. In addition, if teachers rely excessively on intelligent teaching tools, they will bury their strengths, stifle the vividness of the classroom, hinder teacher-student communication, and make it challenging to play the leading role of teachers and the main role of students. [6]

3.4 The rapid development of the intelligent era has prompted the professional competence of teachers to develop in a higher and better direction

At present, both in the field of basic education and higher education, the teacher community is still dominated by traditional teaching methods, which in turn are based on the lecture method, without any new ideas. This obviously deviates from the requirements and goals of cultivating new talents with innovative and international thinking in the new era of our country, and is not in line with the concept of free and comprehensive human development. And the sudden new crown epidemic in 2020 has forcibly changed the traditional lecture mode, and online lectures have been adopted all over the country for teaching. [5] But at the same time, we can find that many teachers have developed thinking inertia, lost the sense of independent innovation and have a low degree of acceptance of emerging things in the traditional teaching mode and teaching philosophy. Under the solidification of traditional education ideas, they are not willing to try to understand new teaching models and education methods, and the application of the Internet only stays at the stage of establishing class groups. Due to the pressure and constraints of life and work, many teachers naturally neglect the importance of refining information technology. They usually only have some basic knowledge of computer operation, and are still at the stage of vacancy in the role of emerging technologies and their ability to utilize them. Also, because they have less exposure to information technology in their daily work and life, they lack the awareness to integrate information technology into their daily teaching.

3.5 Due to the uncertainty of the new crown epidemic, teachers will need to have the ability to teach online for some time to come

Live teaching is both a convenience and an opportunity brought by the intelligent era, but also a new challenge for teachers.

According to Ruilin Hua's " Survey on the Current Situation of Online Chinese Teaching in Chinese International Education - Taking the Teaching Work Engaged in by Masters in Three Universities in Lanzhou as an Example" , 51. 85% of the survey respondents think they need to strengthen their online Chinese classroom

teaching ability; 48. 15% of the survey respondents think their multimedia technology needs to be improved More than 50% of the respondents said that language barriers exist in the process of online Chinese teaching, which makes it difficult to communicate with students and thus affects their learning outcomes. [7]

And Xiaowei Zhang, in her " Survey Research on the Current Situation of High School English Teachers' Classroom Teaching Behavior in Live Web Teaching", points out that teachers' narration methods are mainly based on direct teaching, and direct verbal influence accounts for 53. 74% of teachers' behavior in classroom teaching, which is a relatively large percentage. These data indicate that teacher narration behaviors occur more frequently in live teaching. [8]

From the above survey related to scholars, we can see that teachers' ability to use the Internet as well as multimedia is insufficient. Despite the lack of group discussion and cooperative learning among students in online teaching, teachers' teaching methods have to be based on the traditional lecture method, which is likely to be improved in the future with the innovation of technology.

In the context of the intelligent era, teachers should not only learn to use various smart teaching equipment and tools, but also update their teaching philosophy and teaching methods in a timely manner, and keep learning to improve their professional level to adapt to the intelligent era.

4. RESEARCH ON THE PATH AND STRATEGY

4.1Establish the importance of intelligent teaching in the classroom for teacher training and go ahead to improve the corresponding level.

The starting stage of the development of teachers in the age of intelligence should not be after joining the profession, but at the university level. It is true that teachers can learn to adapt to intelligent teaching after they enter the job, but the teachers needed for future education should be trained from the teacher-training stage. Teachers have ample time and conditions at the pre-service stage to adapt to the trend of intelligent teaching, master the basic knowledge of intelligent teaching, and practice intelligent teaching skills and techniques. Therefore, students should be made aware of the importance of enhancing intelligent technology and learning the appropriate technology in advance to lay the foundation for their future careers. [9]

4.2Applying the concept of intelligent teaching to the actual classroom and helping classroom change in the actual classroom

The intelligent teaching expertise and skills that teachers learn and master in the pre-service stage can really be put into practice after they join the profession. In this process, it is not only a process for teachers to apply their learned knowledge and skills to classroom teaching, but also a process for teachers to give timely feedback on the results of intelligent teaching and promote continuous improvement and enhancement of intelligent teaching. The interaction between these two promotes the rapid transformation of the classroom from the traditional mode to the intelligent mode. However, in this process, teachers should also pay attention to avoid relying too much on intelligent equipment, which is only a tool to assist teaching, and it cannot replace the role of teachers. Therefore, teachers should give full play to the leading role played by themselves in the teaching process. [9]The following figure shows the trend of the publication years of papers related to intelligent teaching concept in Cnki, which shows that intelligent teaching concept is gradually attached to everyone, but it is still relatively lack of attention.
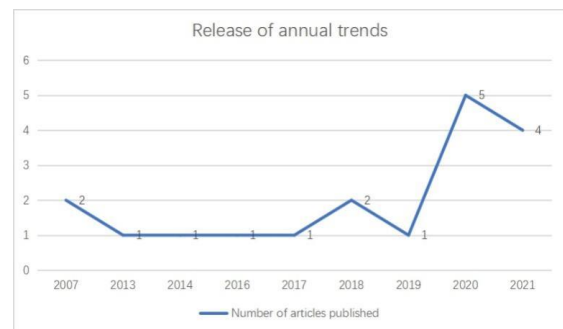

Figure 2 Trends in the number of years of publication for papers related to intelligent teaching concepts

4.3Teachers should pay more attention to the work of educating people

In the age of intelligence, teachers are able to reduce some teaching processes that are repetitive and mechanical, and can instead devote more time to nurturing work. Nurturing requires the education of students in many aspects such as moral education, academic education, physical education, aesthetic education, and labor technology education, so that students can eventually grow in all aspects. [10] Of course, in the context of the intelligent era, teachers should also focus on cultivating students' innovative thinking and abilities. At present, creating innovative talents is an important strategy for countries to face the future and improve their international competitiveness. Teachers should have to reserve enough knowledge related to innovative ability as well as cultivation, such as theories, methods and strategies of innovative ability cultivation,

to creatively carry out teaching and promote the development of students' innovative thinking and the progress of innovative ability. At the same time, teachers should pay attention to and encourage every bit of students' innovative sparks, so that their innovative sparks can be better integrated with classroom teaching.

4.4 Teachers should establish the concept of lifelong learning

In the wave of the intelligent era, the speed of updating intelligent devices is not too fast to be described. Teachers should establish the concept of " lifelong learning". On the one hand, teachers should adapt to these endless intelligent teaching devices, master and apply them to classroom teaching in a timely manner; on the other hand, while teachers are in contact with new things, adapt to intelligent devices and keep up with the trend of the times, they can also invariably close the distance with students, reduce the psychological generation gap, promote the development of a good relationship between teachers and students, and facilitate teachers' timely understanding of students' learning. [1]

5. CONCLUSIONS

In the context of the age of intelligence, the traditional education model is a thing of the past. Teachers, as knowledge transmitters, also need to make timely changes. Teachers need to truly integrate into the intelligent era and take advantage of its east wind to improve their educational abilities. In the intelligent era, teachers must develop their own profession, understand and master educational equipment and various online education platforms, and learn to use intelligent devices. In the process of exploring future education models, the requirements for teacher development are gradually rising, and one of the necessary tests to become a professional teacher is to improve educational vision. In the age of intelligence, teachers need to reposition themselves, and the author summarizes the following paths and strategies for teacher development through analysis.

First, establish the importance of intelligent teaching in the classroom of teacher training and go ahead to improve the corresponding level.

Second, to enhance the actual teaching ability of teacher-training students and give them more opportunities to help classroom changes in the real classroom.

Third, teachers' future teaching process should focus more on nurturing work.

Fourth, teachers need to establish the concept of lifelong learning.

Intelligent software devices and technologies in the age of intelligence bring teachers an unprecedented educational crisis, but also provide many opportunities for turnaround and technical support to crack the educational development dilemma. The several paths and strategies discussed above are the tip of the iceberg, and these are only partially summarized on the basis of our predecessors. The intelligent era is developing rapidly, and there are more ways to be explored by our teachers for the future development of education. After following the development of the times and making educational initiatives that are in line with the intelligent era, the development of the educational path and the path of the times will be mutually stimulating, thus better promoting the ambitious development of education in the whole country.

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