Teachers' Professional Development with Smart Learning—A Case Study of Huangling Middle School

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Keywords: Smart learning, Smart class, Teachers’ professional development.

Abstract. Smart learning can effectively solve the contradiction between teachers' work and study, meet the diversified and multilevel needs and achieve the sustainability of teachers' professional development. Teachers’ smart learning is achieved by a flexible change of roles from "educator" to "learner", ability improvement in smart learning, and establishment of teachers' individual learning spaces and smart learning communities. At the same time, teachers' professional development is promoted jointly by such approaches as training, smart classes, teaching research. In practice, the problem exists in the unscientific planning of teachers' individual professional development, and thus teachers cannot improve themselves step by step.

Introduction

Located in Wuhan Economic and Technological Development Zone, Huangling Middle School is a junior middle school transforming from a rural school to a city school. In 2016 the school only had 309 students but 55 registered teachers with an average age of 46, which means a great overstaffing. No new teachers had been brought in the school for 13 years. To meet the local needs of receiving good education, the quality improvement of existing teachers and the promotion of their professional development are imperative. Therefore, Huangling Middle School has spent three years to do this fundamental work.

Process

Creation of an Atmosphere

Capability Panic. On March 1, 2013, the Celebration of the 80th Anniversary of the Founding of Party School of the Central Committee of C.P.C and the Opening Ceremony of the Spring Semester of 2013 were held in Beijing. Xi Jinping, General Secretary of the CPC Central Committee and Chairman of the CPC Central Military Commission, attended and delivered an important speech. Xi Jinping quoted Mao Zedong's famous exposition during the Yan'an period: "There is a panic in our troops, not an economic panic, nor a political panic, but a capability panic." The "capability panic" illustrates the high attention of the party's first generation of leaders to the party's self-building. Now that the new leaders have again reiterated the "capability panic", this term is still a strong warning to the young cadres today. The times are changing and the environment is changing. Especially with the rapid development of economy and society as well as with the deepening of system reform, the possibility of capability panic and the sense of oppression and crisis caused therefrom will become greater. The only way against capability panic is learning. Only through learning can we improve our knowledge and skills.

Since 2016 there has been a panic among the teachers of Huangling Middle School, not an economic panic, nor a political panic, but a capability panic over creating a modern school, launching smart classes and smart school, relocating the whole school…

Two Keys

Smart Learning. Smart learning is a new learning form in which learners enhance their learning ability by taking themselves as the main body, relying on a smart learning environment, and collecting and integrating information resources with intelligent information technology. Smart
learning breaks through the restrictions of both learning space and time, and effectively integrates high-quality learning resources, so that the transmission and exchange of information become faster. Smart learning can effectively solve the contradiction between teachers' work and study, meet the diversified and multilevel needs and achieve the sustainability of teachers' professional development. Teachers' smart learning is achieved by a flexible change of roles from "educator" to "learner", ability improvement in smart learning, and establishment of teachers' individual learning spaces and smart learning communities.

**Smart Classes.** The future classes of schools will be endowed with a concept of intelligence, and there are different developmental orientations in smart classes. We consider that smart classes are a product of the deep integration of intelligent technology system and teaching in the era of "Internet+", representing the direction of development and reform of future classes. Relying on the development of education big data of the era of "Internet+", we have built a key path framework for the development of smart classes, where based on the teaching intelligence generated from teaching data, the development of smart classes is promoted from four aspects, namely the upgrading of class environment, the reconstruction of class teaching, the smart optimization of learning process, and the smart development of teaching evaluation.

**Three Ways**

**Formulation of Plans.** A mobilization meeting was held to discuss the formulation of three-year plan and annual implementation plan for the "teachers' professional development of Huangling Middle School". A leading team and several operations teams were set up for this purpose, where the project members and their specific responsibilities were defined. An initial platform for teachers' professional development was built. An expert advisory board was formed with the technical support of our cooperative partners—the School of Education of Jianghan University and other renowned schools. All teachers were organized to learn the theoretical knowledge about teachers' professional development, and encouraged to change their concepts and renew their thinking. Various rules and procedures were established and improved. Teachers were also organized to formulate their three-year plans and annual plans for personal professional development. Archives for the teachers’ professional growth were established. Teachers were organized to study modern educational and teaching concepts, management theories, teaching modes, and information technology beyond the school, to receive relevant training, and to carry out class practices and teaching research, so as to form a "study-practice-research" model for the promotion of teachers' professional development.

It was aimed to accomplish the annual goal of teachers' professional development and the development goal of teachers’ team under the concept of "enlightening potential education". The improvement of teachers' professional attitude and their professional level was required so that teachers could basically keep up with the pace of the times and that a transition from "rural teachers" to "urban teachers" could be initially realized.

**Implementation.** With consideration of the exploration and practices of the school in the early stage, as well as the study beyond the school and the expert opinions, the operations teams worked out the preliminary systematic strategies, rules, schemes and procedures as required for the 'teachers' professional development of Huangling Middle School", and perfected the archives of teachers' professional growth.

Experts were invited to exercise tracking and guidance in the school and to find the way of "high-level and rapid development of the teachers’ team of Huangling Middle School". It was expected to further improve the teachers' professional level, so that the teachers could keep pace with the times and fully adapt themselves to the education and teaching work of the new Huangling School, and to train a number of subject teaching experts and even subject education experts.

Exchanges with schools in advanced areas of education were enhanced. Inter-regional on-site demonstration classes and other forms were applied to improve the teachers' professional level and form a training model for the "teachers’ professional development of Huangling Middle School". A complete, formed and mature theoretical system for the "teachers’ professional development of
Huangling Middle School” was required through the further improvement of the archives of teachers’ professional growth.

For the purpose of creating a high-quality brand of school, the activities like “open days for parents” were held to further expand the influence of the school.

Guidance of Teaching Research. The teaching research focused on two basic disciplines, namely Chinese and mathematics. Both of the two experts Pan Jiaming and Wu Xiujun have the teaching experience in key middle schools and respectively study and teach in Jianghan University the Teaching Methodology of Middle School Chinese and the Teaching Methodology of Middle School Mathematics. They brought freshness to the teaching research of Huangling Middle School. The team of Jianghan University also led the teachers of Huangling Middle School to participate in the teaching research activities of Cuiwei Middle School, Qiyi Middle School, and the junior section of Foreign Languages School, where everyone benefited a lot. With regard to the scientific research, Prof. Deng Zhixiang and Dr. Xu Qiu popularized the knowledge of educational research. Teacher Ai Di was then responsible for the project of "the Exploration and Practice of the Teaching Model of Small Smart Classes".

The development of research projects was energetically supported to promote the teaching quality. Jianghan University helped Huangling Middle School successfully declare a municipal project of "the Exploration and Practice of the Teaching Model of Small Smart Classes". Before determining the ideas of cooperation, the expert team came to the school many times to communicate face to face with the project team of the school on "Small Smart Classes" and the specific demands during project implementation. Teacher Ai Di worked out the specific plan and the implementation schedule. Dr. Li Xing guided the teaching design and implementation of smart classes, specifying the procedures and rules thereof. According to the implementation plan, from April to June 2017, eight teachers of Chinese, Mathematics, English and Physics took the lead in piloting smart classes, where the team of Jianghan University provided group and individual guidance to the teaching design and class videos. A series of practical training in smart classes raised the teachers' enthusiasm for teaching reform and also improved their level of information technology. Teachers Li Xing, Ai Di, Deng Zhixiang, Pan Jiaming and Wu Xiujun participated many times in the preparation of smart classes. Teachers Pan Jiaming, Liu Pingxiu, Chen Huijun, Ai Di, and Deng Zhixiang commented on all the videos of open classes in the open smart class month. In Wuhan’s joint demonstration activity of small classes in 2017, the classes demonstrated by the two teachers of Huangling Middle School won the unanimous praise from the leaders and teachers of the city and districts.

Four Achievements

Excellent Team. By overcoming numerous difficulties, a teachers’ team has been gradually created, which has a strong desire for lifelong learning and independent development, good professional ethics, healthy psychological quality, harmonious interpersonal relations, exquisite professional level, high capability for teaching research, lasting sense of cooperation, innovative thinking, and Internet thinking, and which meets the needs of a modern new brand school with no lack of "scholars” and "experts” and dares to challenge the future.

Numerous Prizes. The school was awarded a "Model School of Mental Health Education". Teacher Zhou Guohong was elected an Excellent Teacher of Hubei Province. Teacher Zhou Min was awarded the honorary title of "Top Ten Teachers with Professional Ethics". Teacher Zhu Lingzhi was awarded the honorary title of "Best New Teachers of Chedu". Teachers Zhou Litao, Liu Yongliang and Dai Xiaobo led the students to participate in the 2016 National Engineering Robot Contest and won the Champion of the Youth Group in the “Photoelectronic Vehicle Type for Conveyance Projects”, including two first prizes and one second prize. In July 2017 the school participated in the 2017 World Robot Contest and won two second prizes and third prizes.

Excellent Theses. The thesis “Preliminary Study on the Teachers’ Role in the Interactive Learning in Chinese Smart Classes of Junior Middle Schools” written by Li Lianglin and the thesis “Using Modern Information Technology to Activate the Interest in English Learning - Exploration..."
and Practices in Developing Efficient Small Smart Classes” by Jiang Taiheng were published respectively in Issues 8 and 9 of "New Curriculum Research" of 2018. The thesis “Significance of Establishing Positive Psychological Archives for Junior Middle School Students” written by Cheng Ling won the second prize at the “Psychological Summit Forum of Six Provinces in Central China”. Li Xujun’s thesis “Creating A Model of Autonomous Moral Education And Highlighting the School Feature of Moral Education - the 1357 Program of Autonomous Moral Education of Huangling Middle School” won the first prize of theses of Hubei Provincial Academy of Moral Education in 2017. Zhu Lingzhi's thesis “Analysis on the Implementation of Students’ Autonomous Management in Classes” won the second prize of theses of Hubei Provincial Academy of Moral Education.

High Quality. Huangling Middle School has achieved a steady improvement in its educational and teaching quality by focusing on the teachers’ professional development. For example, in the entrance examination of 2016 for senior middle schools, the school obtained 100% in the pass of all subjects and ranked the first in the district; its enrollment rate of ordinary senior middle schools was 50.59%, ranking the second in the district; and its enrollment rate of provincial and municipal exemplary senior middle schools was 40%, ranking the second in the district. In June 2018 it successfully passed the acceptance for modern schools.

Problem and Introspection

Existing Problem

The problem exists in the unscientific planning of teachers’ professional development, and thus teachers cannot improve themselves step by step.

The teachers’ growth is an incremental and accumulative process integrated with leaping and breakthrough development. However, the current situation is that, though young teachers have the desire to become experts, they are not good at planning their own career development, or the plans that they have made are mostly for a short term, which is why they cannot develop themselves step by step; and for aged teachers, they work by following the prescribed procedures and are satisfied with the stability of their work without seeking breakthroughs.

Introspection

1. A reasonable and effective evaluation system shall be established. The traditional evaluation of teachers is mainly linked with rewards and punishments, where the examination, evaluation and scoring of teachers are carried out generally according to the predetermined provisions, and then teachers are divided into the superior and the inferior or into different levels based on the scores. Such evaluation is usually taken as a means of reward, praise or punishment of teachers. It is oriented to the past and only emphasizes the achievement of the school's current goals as well as teachers’ partial personal performances in the past. Therefore, a bottom-up evaluation system that is conducive to the teachers’ professional development shall be established, which not only comprehensively and dynamically evaluates all teachers, but also highlights teachers’ internal motivation of self-creation and development.

2. Teachers shall improve their awareness of professionalism and independent spirit.

The driving force of teachers' professional and independent development comes from their understanding and pursuit of their own professional value, from their sense of crisis and pursuit while they are facing the challenges of educational and curriculum reforms, and from their internal needs of self-development. To stimulate the driving force of teachers means that teachers must have a strong sense and motivation of professional development and consciously assume the main responsibilities for professional development. The core of stimulation is to emphasize that teachers should truly become the masters of professional development, and that they “are not forced to develop” but “desire to develop themselves”. The school shall constantly strengthen the teachers' sense of responsibility and mission and activate their internal motivation of professional development.
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