

From Mutual Creation to Mutual Benefit: China's National Teacher Training Program between Higher Teacher Education and K-12 Teachers

Fangyi Zhao^{1*}, Xu Liu²

¹College of Mathematics and Computer Science, Zhejiang Normal University, Jinhua 321004, Zhejiang Province, China

²School of Politics and Public Administration, South China Normal University, Guangzhou 510006, Guangdong Province, China

*Corresponding author: Fangyi Zhao, zhaofy@zjnu.cn

Copyright: © 2022 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

Abstract: Sustainable Development Goal (SDG 4) lays solid theoretical foundation for the development of higher teacher education in improving the quality of teaching faculty nationwide. Sustainable teacher training paves a way for teacher professional development in the long run. China's "National Teacher Training Program" serves a connection between higher teacher education and K-12 teachers in multiple perspectives when exploring K-12 teachers' improvement of the essence by upgrading the initiative of the program with the assistance of educational technology and modern educational philosophy from mutual creation to mutual benefit. Direction orientation strategic design based on demand for teaching faculty, curriculum setting in modules, and characteristics creation have been carried out to upgrade the training of teacher colleges and National Teacher Training Program in the future for achieving a win-win situation between higher teacher education and K-12 education.

Keywords: Sustainable Development Goal (SDG 4); China's National Teacher Training Program; Higher teacher education; Teacher development; K-12 teachers

Online publication: September 22, 2022

1. Introduction

Sustainable Development Goal 4 (SDG 4) advocates that all children, youngsters, and adults have access to an educational opportunity characterized by inclusiveness, equitable, caliber quality, and lifelong learning. Teacher education has been universally identified as one of the key factors ^[1,2] in the development of educational course. Research shows that teacher education plays an important role in achieving SDG4. Accomplishing inclusive, equitable, quality, and lifelong learning for all learners depends on sustainable teacher training in both developed and developing countries ^[3,4].

Teacher training is a significant way of promoting teachers' professional development. In-service teacher education and training was proposed by United Nations Educational, Scientific and Cultural Organization (UNESCO) and the International Labor Organization (ILO). In 1966, these two organizations collaboratively proposed the Recommendation Concerning the Status of Teachers, which formally proposed the concept of "in-service teacher training" ^[5]. This concept has set off an upsurge of research on teacher training worldwide. Based on data access, the four characteristics of teacher training are as follows: (1) The government places teacher training as an important position; (2) The active exploration and creation of new

teaching models that integrate forefront educational theories with teaching practice; (3) It emphasizes the practicability of teacher training contents, which conveys certain practical significance; and (4) It is the application of various multimedia teaching tools in the information-based teaching environment that is valued.

This paper is organized as follows: Section 2 narrates the history of China's National Teacher Training Program which is divided into three stages including compensatory training stage, exploratory stage of continuing education, and advocacy of lifelong education; Section 3 clears the theme, strengthens the exploration of K-12 teachers' improvement of the essence, and analyzes the psychological activities of teachers, principals, and students participating in China's National Teacher Training Program; Section 4 discusses the measures of upgrading the training programs of teacher colleges and National Teacher Training Program in the future from different perspectives; and Section 5 explains how teacher colleges and K-12 education achieve a win-win situation.

2. Literature review of China's national teacher training program

Based on the existing research, the correlated issue of China's National Teacher Training Program has been discussed from the perspectives of philosophy and management.

Firstly, it is of significance to perceive the functions of China's National Teacher Training Program from the value perspective of philosophy. From the macro perspective, Zhu ^[6] illustrated the value of China's National Teacher Training Program from the levels of public administration, society, and teacher professional development, proposing that the value of the National Teacher Training Program should be supported by an effective and grand teacher training system. In 2019, based on the reality and future demand, Zhu re-evaluated the value of China's National Teacher Training Program from the bottom level of teacher education, highlighting its functions in the quality of teacher education and the teaching faculty ^[7]. Meanwhile, other scholars discussed the training objectives and contents of the National Teacher Training Program from the knowledge theory of philosophy.

Secondly, from the perspective of management, the training management system has been discussed on the National Teacher Training System. Yu ^[8] illustrated how to construct effective teacher training programs based on the questions including "why is teacher training is conducted", "who receive teacher training", "what are the objectives of teacher training", "what are the training contents of teacher training", "who dominates teacher training", and "what are the effects of teacher training". Guan and Yu ^[9] integrated the intrinsic nature and interconnection of various internal and external factors of the National Teacher Training Program with further elaboration of its interconnection to promote the sustainable development of the National Teacher Training Program. In 2017, Li and Wang ^[10] discussed the ten greatest innovative contributions of teacher training based on the National Teacher Training Program as an "entire system consisting of multiple types, levels, and factors".

Additionally, the effect of National Teacher Training Program on teacher professional development and education equality has been widely discussed. A small number of scholars have logically elaborated how corresponding profits are gained from the vast investment of National Teacher Training Program, meaning concerns, including the appropriate proportion of training investment and output as well as maximized training profit.

3. History of China's national teacher training program

China's teacher training program was initiated in the late 1970s, and has undergone three stages in total. The first stage is the compensatory training stage in the late 1970s after the beginning of reform and opening-up policy, which was characterized by a face-to-face teaching mode. The program was designed for in-service teachers who are working in the primary and secondary schools, who had failed to receive

teacher education or meet the corresponding academic standards due to various reasons. The second stage is the stage of exploratory continuing education from the early to the late 1990s. For further improvement, the utilization of a face-to-face instruction is the primary method of remote training supplemented by satellite, TV, radio, and Internet with the rapid development of information science and technology. The third stage is to gradually to promote the concept of lifelong learning since 1999, which has evolved into an institutionalized and systematized system of contemporary education that emphasizing key competencies.

3.1. Compensatory training stage of teacher education (1978–1989)

Before the reform and opening-up of China in 1978, China's educational cause had been severely devastated owing to sequential turbulence since the founding of the People's Republic of China in 1949. At that stage, all levels of schools in China were deficient in the teaching faculty, additionally the teaching faculty of basic education is lacking in the teaching capability, further some teachers are failed to reach the required academic standard of the corresponding schooling system. Since the Third Plenary Session of the 11th Central Committee, the Chinese government has emphasis on the development of educational cause by launching a series of policies as well as laws and regulations, consolidated teaching faculty construction, and reinforced investment on the training of primary and secondary school teachers for promotion of teacher training. According to "Suggestions on Further Enhancement of In-service Training of Primary and Secondary School Teachers issued in 1978", a number of teacher colleges and teacher training schools were restored and established. At that time, definite requirements had been posed on the academic level of primary and secondary school teachers, in which primary school teachers shall reach the academic level of secondary teacher school, while secondary school teachers shall reach the academic level of teacher college (associate degree in teacher education). Additionally, teachers without corresponding academic levels shall reach the required academic level as compensation ^[11]. This has transformed the process of experience emphasis to professional competence in teaching skills of primary and secondary school teachers in the early 1980s. Embraced with the background of teacher training restoration throughout China, numerous teacher training schools and teacher colleges have been established and sprung up to conducting training on subject knowledge among the primary and secondary school teachers who were not compatible with teaching tasks.

August 1980 witnessed the implementation of "Suggestions on Further Enhancement of In-service Training of Primary and Secondary School Teachers" ^[12] by the Ministry of Education of People's Republic of China, which highlighted the position of teacher training schools in teacher training and in-service teacher education. In 1982, "Provisional Regulations on Enhancement of Teacher College Construction" launched by the State Council of the Central Committee of the Communist Party of China ^[13] officially clarified the nature, tasks, and orientation of teacher training schools. In 1985, "Decision of Central Committee of the Communist Party of China on the Reform of Educational System" ^[14] was issued by the Ministry of Education of People's Republic of China, that teacher training schools should be operated well, and teacher training of primary and secondary school should be carried out via correspondence and radio broadcast by making use of the existing resources. Based on the teachers' mastery of subject knowledge, textbook compilation and teaching pedagogy, and academic compensatory education has been implemented. In 1986, "Suggestions on In-service Primary and Secondary School Teacher Training" was issued by State Education Commission of the People's Republic of China, having regulated that teacher training schools should cooperate with teacher colleges and secondary schools in teacher education by passing on teaching theories and teaching experience for caliber-quality basic education with regular supervision of teaching quality and educational research ^[15]. Later on, qualified tests for in-service teachers were performed to

promote the professional level and elevate the academic qualification of primary and secondary school teachers in China.

3.2. Exploratory stage of continuing education (1990–1999)

By the end of 1980s, the compensatory stage of teacher education came to an end, when teachers of basic education had reached the corresponding academic levels nationwide with constant improvement in their teaching ability and realization of transformation to professional competence from experience emphasis. In 1990, a conference on the continuing education of primary and secondary schools was held, focusing on how to promote the sound and orderly development of continuing education, requesting that teachers of all levels, including newly-recruited teachers and backbone teachers to participate in continuing education training after obtaining certificates of professional qualification to elevate the educational and teaching abilities. In 1991, “Suggestions on Promotion of Continuing Education among Primary School Teachers”^[16] was issued, which had placed continuing education on a critical position as the primary goal of teaching training of primary and secondary school teachers in the next 10 years. In 1993, “Outline of Educational Reform and Development in China”^[17] was launched, symbolizing that the development of education should be ranked as the top priority by enhancing the investment on the training of primary and secondary school teachers for elevating the overall quality of the teaching faculty. In 1998, “Action Plan for the 21st Century Education Revitalization”^[18] came into force, which had advocated the elevation of teachers’ professional capability through implementation of national teacher training programs to reinforce the cultivation of backbone teachers, pilot the regional development of teacher education, and realize the rejuvenation of China through science and education.

The early 1990s witnessed the initial stage of continuing teacher education. At this stage, the academic education of teachers evolved from compensation to elevation. There is still a shortage of teaching faculty nationwide due to the severe destruction of teacher education system after the mid-1960s, drainage of temporary teachers for low salaries, inferior social welfare and local policies, as well as a rising number of school-aged children in the 1990s. In addition, there was a deficient teaching faculty in music, art, and physical education owing to excessive emphasis on the curriculum in relation to admission to high school or university. In-service non-academic professional training had been carried out since early 1990s, emphasizing elevation of teachers’ teaching competence and overall quality. The need of continuing education among teachers was driven by quality education in the late 1990s for the revolutionary reform of basic education and essence of key competence. By the end of 1990s, a number of teacher universities or colleges in China had started to enroll high school students into the undergraduate program of primary school education embraced with the decline and cancellation of secondary teacher education, following the trend of global teacher education in academic level. Meanwhile, various teaching training programs cultivating leading backbone teachers in subject teachers by concentrated training, implementation of teaching research, tutoring guidance pattern dominated by backbone teachers, professional competitions, high-level academic training, and nourishment of rural teachers to elevate the overall competence of the teaching faculty and promote high-quality basic education.

3.3. Advocacy of lifelong education (1999–present)

In 2010, the Ministry of Education and the Ministry of Finance of the People’s Republic of China collaboratively conducted new experiments and reforms in teacher training, and began to implement the “National Teacher Training Program for Primary and Secondary School Teachers” (referred to as the National Teacher Training Program). Various policies were issued to support the implementation and development of this initiative. “National Teacher Training Program” has been gradually on track with systematic management and regulation since 2010. Meanwhile, provincial education administrative

departments responded actively, and organized correlated derivative training projects such as “Provincial Teacher Training Program” and “City Teacher Training Program” according to the local conditions in reality. Teacher universities and colleges undertake the main training tasks in each of the sub-projects. The training programs for K-12 teachers was performed by teacher universities and colleges in various provinces of China: (1) Advanced teacher training and research team; (2) Training for backbone teachers and principals; (3) New textbooks and new curriculum standard training for backbone teachers and researchers; (4) Comprehensive Reform of Teacher Training; and (5) Pilot training for famous teachers and principals. The projects in Western China include three types of projects, which are Professional Capacity Building of Rural Primary and Secondary School Teachers, Information Technology Application Ability Training for Primary and Secondary School Teachers, and Leadership Training for Rural Primary and Secondary School Principals that are focusing on the training of K-12 teachers in western China. The national teacher training program for kindergarten teachers involves training on the professional code of conduct for kindergarten teachers, standardized training for new kindergarten teachers, professional compensation training for teachers of non-preschool education professional, training for capacity improvement of rural kindergarten teachers, education, and training on the rule of law and safety of kindergarten principals as well as rural kindergarten principals training to improve the ability of kindergarten running and training for private kindergarten principals to standardize kindergarten management. The project orientates at improving the professional capabilities of kindergarten teachers and principals.

It has been 10 years since China’s “National Teacher Training Program” is implemented. How has it been carried out? What are the highlights? The authors investigated the teacher training programs and K-12 teachers, and summarized the highlights of the teacher training to conduct the training activities of “National Teacher Training Program” with the help of a teacher university.

In April 2022, the Ministry of Education of People’s Republic of China launched “Program to Build a Stronger Teacher Force for China’s Basic Education System” ^[19], symbolizing the new epoch of basic education development with more desperate demand of teachers’ continuing education. Cooperation between teacher universities and schools of basic education has been intensified. High-level teacher universities are encouraged to establish an innovation platform of teacher education, including mutual sharing of caliber-quality curriculum resources, discipline construction experience, educational research projects for elevating education, and teaching level as a whole. Regional cooperation in education science research, teaching faculty cultivation, and basic education service by teacher universities and colleges has been supported. The strategy of New Era Famous Teacher and Principal Pilot Program will be implemented for cultivating a group of education leading educational reform and development as well as elevation of teachers’ quality and ability. The “T-conjunction” connecting teacher training and academic education has been established to encourage in-service teacher education with degree elevation. Curriculum reform of basic education will be carried out with new concepts, requirements, and teaching pedagogy by invigorating the leading role of famous teachers and principals based on the focus of teaching management training in the less developed regions of the central and western China. The five-year “National Teacher Training Program” is launched to guide and lead the teacher training nationwide. The leading role of National Coordination and Innovative Experimental Base of Teacher Development has been given full play through criteria establishment, program promotion, transformation, and system alteration by improving the provincial institutional system of teacher development as well as establishing county teacher development organizations with the team of trainers and educational researchers ^[20]. The training contents are to be optimized, caliber-quality curriculum resources are to be created, and individual curriculum selection mechanism and precise support systems are to be improved with creation of online and offline blended training pattern for elevating primary and secondary school teachers’ application of science and technology as well as scientific quality.

4. Clear the theme and strengthen the exploration of K-12 teachers' improvement of the essence

According to the training objectives, teacher universities and colleges select the training contents, set up small themes, and arrange training courses based on trivial items. Most courses are explored based on the essence of the content. No matter in theory or practice, teachers start from the essence, and theories and cases serve as the essential content. The practice course is an in-depth analysis of the teaching content and course arrangement. Under the guidance of the teacher universities and colleges, K-12 teachers will further discuss the essential content of the course. It does not only explain the concept in depth, but also explores how to design the teaching plan and highlight the essence of the content. K-12 teachers have been very productive. For example, T1 teacher mentioned in the interview, "The most important thing for me is that no matter how you do or design it, you still have to grasp the essential content." T2 teacher also said, "A lot of professors are said to fundamentally, in essence, because what we usually speak of are relatively one-sided, we don't know why a child is wrong, we usually maintain that he or she is very careless or mindless. Actually, it is not a children's deficient ability that leads to the above situation. In other words, we are expected to carry out further exploration on studying to understand the fundamental issues with thorough settlement. From my perspective, I have come to know numerous fundamental things from the training," verifying that education is the consolidation and reorganization ^[21] by John Dewey.

4.1. Transform K-12 teachers' teaching philosophy by integrating Chinese and foreign educational thoughts

Idea is the guide of action. A good teaching idea can bring positive influence on students, promote the common development of teachers and students, and make teaching activities simpler and more effective. The training contents not only include lectures by Chinese professors, but also lectures delivered by foreign teachers. Chinese teachers teach theories from the shallow to the deepest extent, transfer theories based on cases, and they have designed relevant lectures on how to grasp the students' logical thinking in the teaching process, highlighting the dominant position of the students, and determine how the students can make progress in the learning process. Foreign experts mainly explain the main process of case implementation based on cases, and K-12 teachers have been invited to ponder about the problems in the case with active participation. In the process of participation, K-12 teachers have realized the difference between the answers given by students and the direction of teachers' guidance from a profound insight. These practices have greatly changed the concept of K-12 teachers. For example, T3 teacher said in an interview, "This training actually broadened our visions with profound enlightenment. Usually, just like the teacher mentioned, "we teach textbook contents by adopting teaching materials to teacher training." Therefore, how to integrate teaching materials and how to think more profoundly is relatively deficient, but each of these teachers captures our attention to students' thinking and needs when they are speaking. In other words, we are anticipated to reflect what we should give to students rather than what we want to give to them. Therefore, I think the change of concept verifies quite rewarding."

4.2. Standardize classroom teaching management and provide considerate service

Due to the vast number of K-12 teachers, all K-12 teachers are divided into different classes. Each class is equipped with a head teacher and an assistant head teacher, who are primarily responsible for the teaching management of K-12 teachers during the training. In addition, the head teacher that in charge of academic affairs is arranged to deal with K-12 teachers' living expenses during the training. Before the training starts, the management team made the training manual and notified each K-12 teacher via email, WeChat, and telephone. In the email, the distance from the station to the school and the transportation available were informed. During the training, the daily curriculum arrangement and changes is timely reminded in the WeChat group. The K-12 teachers who involved are satisfied with the arrangement of the training. T4 wrote

in his reflection, “The thoughtful arrangement and meticulous care of the training team, made us to feel like home. We agglomerated around the head teacher and became a close team. When it approached the departure time, there was a friendly reminder in the group, always paying attention on the information of our students’ registration journey with reasonable suggestions and guidance timely. After registration, from accommodation to meals, from the course setting to the choice of each teacher, shows the careful preparation of the teacher university”.

4.3. From theory to practice, teachers participate enthusiastically

The training is not only guided by the theories of experts, but also practice courses are included to ensure the in-depth participation of K-12 teachers. Practice courses are not only taught by K-12 teachers, but also organized collectively for lesson preparation before class and evaluation after class. Experts and K-12 teachers prepare and evaluate lessons together, presenting lessons for participating teachers which were prepared on the last day of training. K-12 teachers could take an active part in learning with enthusiasm. For example, Teacher T5 mentioned in the interview, “It took one and a half days to prepare, grind, teach, and evaluate lessons together. In this way, it was an unforgettable and rewarding experience.” Teacher T6 also said in the interview, “I think it is very good to prepare the lesson together and collect everyone’s wisdom. In fact, when everyone speaks, it also touches my thinking. When we have a viewpoint or a suggestion, or when I cast a suggestion that is different from the teachers, or when she gives her controversy on my opinion, the interaction between us is a spark of thinking.” In addition, online courses are also prepared in this training. The design of elective courses has been carried out through a cooperative application. K-12 teachers can also reflect and evaluate themselves through the similar application. Online resources provide K-12 teachers with a broader learning space and guarantee their follow-up learning.

5. How to upgrade the training of teacher colleges and National Teacher Training Program in the future? To create an excellent team of trainers

An excellent team of trainers is the key to effective training. Teacher universities and colleges are expected to take comprehensive measures to encourage teachers to participate in teacher training, including teachers’ participation in teaching, guidance, and management into the scope of workload assessment, employing excellent experts as chief experts of projects, and selecting teachers with strong professional ability as the head teachers. K-12 teacher training is vibrant with the characteristics of adult learning and practice tendency. The trainer should not only have professional knowledge and ability, but is also in possession of special training knowledge and skills. Teacher universities and colleges select the “National Teacher Training Program” expert bank, which gathers training expert teams consisting of teacher universities and colleges, teaching and research institutions, K-12 backbone teachers, etc., which have established the training expert resource bank on this basis. In this way, a training teacher team, which is mainly composed of experts from teacher universities, colleges, and K-12 backbone teachers could be created.

State Council of the Central Committee of the Communist Party of China has attached great significance to teachers’ professional development, focusing on the orientation of new-era quality requirement, and the national curriculum standard with enhancement and reform of teacher education as well as quality elevation in teaching training. New curriculum, new textbooks, new teaching methods, and new technical training are implemented through the training. Teachers’ moral education has been reinforced to improve teachers’ abilities of moral cultivation, assignment and exam design, experimental operation, and family education guidance ^[22]. “National Teacher Training Program” has been conducted to increase the training opportunities of rural teachers and reinforce the teacher training of scarce disciplines.

5.1. Direction orientation

In the recent years, the Ministry of Education of People's Republic of China has successively issued the curriculum criterion of teacher education as well as professional standards of primary and secondary school teachers and principals as the important evidence of cultivation, admission, training, and qualification test of teachers and principals. In 2017, the Ministry of Education of People's Republic of China issued "Guidance Criterion of Training Curriculum of Primary, Secondary School, and Kindergarten Teachers" [20] in Chinese, mathematics, and chemistry as a compulsory education. In 2020, the curriculum criterion on 19 subjects of primary, secondary school, and kindergarten teacher training had been launched, standardized, and guide institutions of basic education when setting up orientated and systematic training courses. Spontaneously, it is high time to study the policies, and measures enhancing teacher development institutions, the consolidation and collaboration of teaching research, and scientific research and audio-visual education departments. All departments are expected to further invigorate the leading and regulatory role of criterion with the guarantee of basic concerns, fairness promotion, directional guidance, and quality improvement.

5.2. Strategic design based on demand for teaching faculty

Teaching has been universally acknowledged as professional, practical, exploratory, and innovative work. Diversified and individualized demands are needed based on teachers' different regions, professional background, stages of professional development as well as educational ecology of the school that they are working for. Therefore, the development pattern of new teachers, experienced teachers, and expert teachers should be emphasized in "National Teacher Training Program" to provide training contents and patterns in conformity with the characteristics of professional development stage. Investigation has been conducted to study on teachers' demand. The design of training programs has transformed from "supply orientation" to "demand orientation." When it comes to teacher training implementation, it evolves from "unchanging status" to "dynamic adjustment." As for training tracking and guidance, it varies from "short-term concentration" to "long-term support." Question as orientation, examples as carrier and tasks as motivation should be persisted to enhance teachers' active participate in "National Teacher Training Program" and cater to their demand for individualized learning.

5.3. Curriculum setting in modules

The Spirit of the 19th CPC National Congress and National Conference on Education have been listed as the primary contents of the national teacher training programs for teachers and principals. Setting the topic of training courses witnesses the whole procedure of teacher and principal training. Teacher morality, psychological health, information technology, and tender care for the left-behind children as the compulsory part of teacher training have been set together with the training programs of excellent traditional Chinese culture and application of information technology to improve teachers' moral quality and legal consciousness, value cognition, and information refinement. Teachers' multi-level training objectives are clearly defined, diagnosis on teachers' abilities has been carried out, teaching training contents have been optimized, and orientated training has been implemented to elevate the sense of accomplishment among the teachers participating in teacher training. Concentrating on the practical problems that rural teachers and principals are encountered with teaching and in school management, therefore, the contents of training modules are prepared according to their level, category, and discipline. The structure of training courses has been optimized, task-driven teaching has been implemented, teachers' participation has been highlighted and teachers' practice has been reinforced, ensuring that the percentage of training course hours account for no less than one thirds of teaching internship hours. Ability Elevation Project 2.0 of Information

Technology Application of Primary and Secondary School Teachers has been implemented to facilitate the effective application of modern information technology in teaching and school management.

5.4. Characteristics creation

Caliber-quality training institutions with obvious advantages in disciplines, abundant training experience, and relatively high training and research level will be selected to undertake the leading role of “National Teacher Training Program” by creating a group of leading training bases and brand training specialties, enabling it to become the grand base and essence of the training programs. A number of pilot county teacher development institutions have been established with the formation of a perfect teacher development system constituting teacher universities and colleges, city and county teacher development centers, teacher professional development schools, and integrated school-based teaching research projects. The pilot project construction has been under construction by China’s National Teacher Training Program from quantitative expansion to qualitative improvement, followed by the reduction of hosting institutions in number. “Pilot District (School) of National Teacher Training Program” and “Specialty (Curriculum) Construction of National Teacher Training Program” have been initiated by proposing training reform, setting up excellent cases of teaching and school management as well as promoting the mutual construction and sharing of caliber-quality training resources.

6. Teacher colleges and K-12 education achieve a win-win situation

There exists a “symbolic” relationship between teacher colleges and K-12 schools, and it is the responsibility of teacher colleges to serve K-12 schools. Teacher universities and colleges provide K-12 schools with educational teaching concepts, and support the development of K-12 schools. Simultaneously, K-12 education is the soil for teaching and scientific research in teacher universities and colleges, including educational internship for students of teacher universities and colleges. While undertaking “National Teacher Training Program,” teacher universities and colleges deepen their understanding of the problems that need to be solved in the development of K-12 schools. “National Teacher Training Program” promotes the connection between teacher colleges and K-12 schools. We are advised to strengthen in-depth cooperation between teacher universities and K-12 teachers, while helping K-12 schools, especially schools of weak foundation to realize practical problems in running the schools, and figure out breakthroughs and innovation for the development of K-12 schools, as well proposing suggestions for the improvement of school management. Institutions of higher teacher education and K-12 schools have collaboratively established an intimate “partnership” with the achievement of a win-win situation for both parties.

7. Conclusion

From what have been mentioned above, it is easy to conclude that China’s teacher education system has undergone constant improvement since the start of reform and opening-up in the late 1970s. China’s teacher education has evolved from academic compensatory training, continuing education, elevation of overall teaching competence, and advocacy of lifelong education. At present, an excellent team of trainers of China’s National Teacher Training Program requires upgrade in the training of teacher colleges, involving direction orientation, strategic design based on demand for teaching faculty, curriculum setting in modules, and characteristic creation. A win-win situation will be achieved by teacher colleges and K-12 education by helping K-12 schools of the weak foundation to realize critical problems in running schools and determine breakthroughs and innovation for the sustainable development of K-12 schools. However, suggestions on the improvement of teacher education and K-12 school management have not discussed in this paper, which will be included in our future study, especially on how to achieve a win-win situation for teacher colleges and K-12 schools in teacher education.

Disclosure statement

The authors declare no conflict of interest.

Acknowledgments

The authors extend their heartfelt gratitude to Doctor Zilun Zhi, who have provided timely guidance and valuable suggestions in the paper composition, logic order, and revision of this manuscript. The authors also thank Mr. Guofeng Zhu, a science teacher at Jinhua No. 14 Middle School for his abundant information on K-12 education and teacher training.

References

- [1] Nketsia W, Opoku MP, Saloviita T, et al., 2020, Teacher Educators' and Teacher Trainees' Perspective on Teacher Training for Sustainable Development. *Journal of Teacher Education for Sustainability*, 22(1): 49–65.
- [2] Huberman M, 1988, Teacher Careers and School Improvement. *Journal of Curriculum Studies*, 20(2): 119–132.
- [3] Jetly M, Singh N, 2019, Analytical Study Based on Perspectives of Teacher Educators in India with Respect to Education for Sustainable Development. *Journal of Teacher Education for Sustainability*, 21(2), 38–55.
- [4] Fuller FF, 1969, Concerns of Teachers: A Developmental Conceptualization. *American Educational Research Journal*, 6(2): 207–226.
- [5] Recommendation Concerning the Status of Teachers: Report by the Director-General: Summary, UNESCO Report, 1966.
- [6] Zhu X, 2010, On the Value of the National Training Plan. *Teacher Education Research*, 22(6): 3–8.
- [7] Zhu X, 2019, Reevaluation of the National Training Plan in the Process of Constructing a New System of Teacher Education in Administrative Districts and Counties. *Journal of Yunnan Normal University*, 51(3): 93–99.
- [8] Yu X, 2010, On the Seven Key Links in Effective Teachers' Training: Taking the "National Training Plan Trainers' Research and Studies Program as an Example". *Educational Research*, 361(2): 77–83.
- [9] Guan Y, Yu Y, 2013, Research on the Relationship Between Internal and External Factors in the System Structure of "National Training Program". *China Educational Technology*, 313(2): 48–51.
- [10] Li J, Wang J, 2017, On the Creative Contribution of "National Teacher Training Project to the Teacher Training in China". *Teacher Development Research*, 1(2): 1–9.
- [11] Ministry of Education of People's Republic of China, 1980, Suggestions on Further Enhancement of In-service Training of Primary and Secondary School Teachers.
- [12] State Council of the Central Committee of the Communist Party of China, 1982, Provisional Regulations on Enhancement of Teacher College Construction.
- [13] Ministry of Education of People's Republic of China, 1985, Decision of Central Committee of the Communist Party of China on the Reform of Educational System.
- [14] State Education Commission of the People's Republic of China, 1986, Suggestions on In-service Primary and Secondary School Teacher Training.
- [15] Ministry of Education of People's Republic of China, 1991, Suggestions on Promotion of Continuing Education among Primary School Teachers.

- [16] Ministry of Education of People's Republic of China, 1993, Outline of Educational Reform and Development in China.
- [17] Ministry of Education of People's Republic of China, 1998, Action Plan for the 21st Century Education Revitalization.
- [18] Ministry of Education of People's Republic of China, 2022, Program to Build a Stronger Teacher Force for China's Basic Education System. State Council of the Central Committee of the Communist Party of China, 2019, Guideline on Advancing Education Reform and Improving the Quality of Compulsory Education.
- [19] Wang D, 2020, The Progress and Strategy of National Training for Primary and Secondary School Teachers in China in the New Era. *Global Education*, 49(1): 54–61.
- [20] John D, 1916, *Democracy and Education*, Springer, New York.
- [21] Ministry of Education of People's Republic of China, 2017, Guidance Criterion of Training Curriculum of Primary, Secondary School and Kindergarten Teachers.

Publisher's note

Bio-Byword Scientific Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.