

Professional Educational Researchers in China's Five-Level Education and Teaching Research System: Their Promotive Roles in Chinese Basic Education Development

Yong Huang

Yangzhong Teacher Development and Management Center, Yangzhong
212299, Jiangsu, China

Abstract: Professional Educational Researchers (PER) are a crucial component of China's Five-Level Education and Teaching Research System (ETRS), which has been of fundamental importance to Chinese basic education development. PERs play a significant role in directing teachers' professional development, advancing basic education curriculum reform, and supporting educational decision-making. This article explains the concept of the PER in the context of the ETRS, describes the professional criteria for being a PER, and expounds on their significance for basic education advancement.

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About the Author: Yong Huang, Yangzhong Teacher Development and Management Center, Yangzhong 212299, Jiangsu, China, E-mail: 113325248@qq.com

Correspondence to: Yong Huang at Yangzhong Teacher Development and Management Center of China.

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DUE TO THE importance of educational research for a nation's education development, every major country in the world has its own educational research system pertinent to its special situations. Educational research workers in Germany place a chief focus on applied and experiential research (Liu, 2023). Their counterparts in the US put more value on theoretical research and development in education (Jiang, 2021). Those in the UK are more concerned about the practical application of educational theories (Wang, 2022). Typically, there are professional educational supervisors or instructional advisors deployed in a country's educational research system (Zeng et al., 2023). In China, the five-level education and teaching research system (ETRS) has been instrumental in advancing Chinese basic education. A group of specialized professionals employed by this system, known as "professional educational researchers" (PER), have made substantial contributions to its functioning (Tan, 2023). This article aims to explain the roles of PERs in the ETRS and their significance for promoting basic education development in China.

Who are the PERs in the Five-level ETRS?

China's ETRS consists of five levels of institutions: the central-, provincial-, municipal-, and county-level education and teaching research (ETR) institutions and school-based teaching research offices (Yang, 2023). PERs are professionals staffed by provincial-, municipal-, and county-level ETR institutions under the jurisdiction of the three levels of educational administrative departments, specializing in education science studies and teaching research at the basic education level (Li & Shen, 2011). PERs' work spans a wide range of responsibilities, including conducting instructional research, serving teacher professional development, integrating educational resources, providing educational counseling, and more.

PERs have close connections with basic education institutions and teachers, serving as a bridge between theoretical research and teaching practice and between educational administrative departments and frontline teachers (Lu & Wang, 2019). They provide interpretations of governmental education policies, assist teachers in reaching a right understanding of the national curriculum program and course standards, and initiate regional education and teaching reform (Liu, 2008). Also, PERs are responsible for monitoring the quality of education in their respective regions and formulating improvement strategies accordingly. In the meantime, they need to follow domestic and international ETR dynamics closely and translate existing research outcomes into teaching practice. In addition, they are accountable for organizing all kinds of ETR projects and activities to support younger teachers' professional growth (Ministry of Education of China, 2019).

Professional Criteria for Being a PER

Practical Expertise

Practical expertise of the PER includes practical knowledge and experiences, as well as concern with practical issues and awareness of innovation (Wang, 2021). Their practical knowledge, represented by their understanding of practical issues in education and proficiency in disciplinary instruction, is fundamental to their ETR work. It derives from their practice of teaching, as the majority of them had years of instructional experience before becoming professional researchers. As the reform in basic education intensifies, PERs' work demands more diverse practical experiences, including observations, analyses, and generalizations of frontline teachers' educational and instructional practices, alongside their own on-site experiments (Lu et al., 2018). Despite the fact that PERs do not need to deal with students directly on a daily basis, all ETR work is primarily aimed at boosting student development. Therefore, it is important for the PER to pay attention to actual teaching issues and base their research on concrete teaching situations. The practice-focused research paradigm enables the PER's work to suit the needs of teachers and be professionally supportive of their classroom instruction (Wang, 2021). Additionally, a PER must have the consciousness of reform and the practical ability to innovate pedagogical notions and methods to continuously enhance the quality of teaching (Shen, 2021).

Research Capacities

Research capacity is central to a PER's competence. A proficient PER must first be a good observer, sensitive to issues arising in education and teaching. Moreover, PERs must be academically competent in approaching research questions analytically, leveraging their prior educational experiences and disciplinary expertise (Wan & Zhu, 2024). Furthermore, they should have the ability to develop a proper research design and implement it in collaboration with teachers. Based on experimental findings, they need to conduct theoretical generalizations for extensive application of their research results (Fan, 2008).

Multi-Tasking Ability

Multi-tasking ability is a necessary qualification for PERs because they have multiple roles to play, plural responsibilities to fulfill, and an onerous workload to complete (Li & Shen, 2011). To the teacher's eye, PERs are curriculum and subject experts, acting as directors for their professional development; in the mind of educational administrators, they are disseminators of

education policies, safeguarding the quality of basic education in their respective regions (Sun, 2022). According to the Ministry of Education's 2019 "Opinions on Strengthening and Improving Educational Research for the New Era's Basic Education," PERs in the new era should provide four categories of services: services for schools, teachers, students, and educational administrators (Ministry of Education of China, 2019). That means a PER's responsibilities include supporting the school's education and teaching, guiding teachers' professional growth, promoting student holistic development, and providing evidence for scientific educational decision-making. What's more, a PER's day-to-day work contents are of varied descriptions, including both professional research duties and miscellaneous administrative tasks (Tang & Tang, 2022). It requires comprehensive qualities and abilities to do their job well.

Mentoring Capability

The PER is typically seen as the "teacher of teachers." As mentioned earlier in this article, most of the PERs were anchor teachers in their respective disciplines, which place them in an advantageous position in directing research and training among ordinary teachers (Zhang, 2014). Moreover, PERs have the responsibility to guide the basic education curriculum reform. The curriculum and teaching modifications are a chief part of their work. PERs need to continuously study cutting-edge instructional notions and methods and guide teachers to apply them to classroom practices (Mou, 2022). In recent decades, Chinese basic education curricula have undergone three major rounds of reform, from "double foundations-focused" teaching to "three objectives-oriented" curricula and "key competences-centered" education. Each of them posed new requirements on PERs' directive ability in curriculum reform (Xu, 2022).

Promotive Roles of PERs in Basic Education Development in China

The five-level ETRS is a distinctively Chinese educational research system that has been instrumental in China's basic education development. PERs in this system have played critical roles in teacher professional growth, curricular development, the monitoring of the quality of regional education, and the transmission of education policies (Pan, 2019).

Advancing Curriculum and Teaching Development

Curriculum and teaching studies are a core area of educational research, focusing on theoretical and practical questions associated with school curricula

and instruction. Included in this area are studies of teaching objectives, contents, models, and assessment, as well as solutions to specific challenges emerging in the teaching process (Zeng, 2014). Curriculum and teaching research are central parts of PERs' work.

Improving the Quality of Curriculum Design

Curriculum design is a creative endeavor concerning the systematic organization of knowledge delivery, seeking to give students a structured learning experience (Liang & Zhang, 2023). PERs are engaged in formulating and revising curricular schemes for schools in the region based on national education policies, curriculum programs, and course standards. For example, in designing the curricular scheme for secondary geography education, PERs need to consider that the courses under the scheme cover all necessary geographical knowledge at this level, and in the meantime, pay attention to the connection between content knowledge and students' life experiences to ensure the practical purpose of the curriculum (Fu, 2014). In the process of curriculum research, PERs develop teaching resources, such as teaching materials, learning protocols, and courseware, in collaboration with teachers to make sure that they suit the needs of students. In addition, PERs must stay current with disciplinary developments and revise course contents in a timely manner to guarantee that the curricular scheme is in sync with the advancement of information. For instance, in the context of environmental science becoming a mainstream discipline because of the exacerbating effects of global climate change, PERs need to follow the research advances in this field in order to incorporate relevant content into the curriculum (Li, 2018).

Innovating Teaching Strategies

Teaching strategies are methods that teachers use to deliver teaching materials in ways that keep students engaged and optimize instructional outcomes. They may adopt different teaching strategies according to expected teaching objectives, student cognitive levels, teaching settings, and classroom resources (Zhao, 2014). To realize successful implementation of prescribed curricula, PERs need to explore effective teaching strategies to support teachers' classroom organization. They must pay attention to the recent developments in pedagogical theories and practices and help teachers innovate their teaching strategies (Li, 2012). A core job responsibility of the PER is to provide directions and training to teachers on teaching strategies and techniques to heighten their instructional levels. For example, in training novice English teachers, they may demonstrate how to apply the immersive teaching method to create an authentic English context for students (Yu, 2013). In addition, PERs conduct supervision and evaluation of the classroom imple-

mentation of specific teaching strategies. Through regular lesson observations, examination of teaching protocols, and interviews with students, they check on teachers' execution of the teaching strategy in exploration and evaluate its effectiveness (Ling, 2019).

Promoting Teacher Professional Development

Organizing High-quality Training Programs for In-service Teachers

Educational development necessitates systematic in-service teacher training to increase educators' teaching capacities and professional competences continuously and comprehensively. PERs work to develop a wide range of teacher training programs and events according to teachers' individual needs and the needs of disciplinary development. These training programs could take a variety of forms, including courses, lectures, seminars, and practical projects, among other activities, with the purpose of helping teachers raise their levels of education and teaching by upgrading educational ideas and taking in fresh teaching techniques and methods (Cheng, 2019). Also, PERs conduct follow-up evaluations on training participants to assess the effects of these training programs on their instruction. In Chen's and Deng's study, for instance, PERs developed a one-month training program named "Teaching Practice and Reflection" for novice secondary English teachers. The program entailed training on teaching protocol design, observations of leading teachers' lessons, reflections on their own teaching practices, and other processes. Following the training sessions, the PERs tracked and evaluated the novice teachers' performance through a questionnaire survey to measure the effectiveness of the training program (Chen & Deng, 2018).

Formulating Teacher Evaluation Frameworks

Teacher evaluation is an integral part of the educational system, meant to evaluate the outcomes of the educational behavior of the teacher and provide a framework of reference for future improvement (Ou, 2009). PERs are held responsible for formulating valid and reliable teacher evaluation frameworks based on scientific criteria. They typically develop an evaluation scale incorporating comprehensive indicators such as the teaching level, teaching research engagement, moral commitment, etc. In addition, they regularly gather comments on the teacher from their students, colleagues, and superiors. Teachers are given the evaluation results as feedback in order to form a right understanding of their strengths and weaknesses (Xu, 2012). As a result, PERs establish a multi-dimensional teacher evaluation framework that is im-

partial and objective, including measurements of the teacher's performance in instruction and teaching research as well as comments from chief stakeholders.

Developing Teacher Incentive Schemes

Teacher incentives are initiatives introduced to encourage teachers to improve the quality of their teaching, enhance their teaching qualifications, and retain the teaching profession (Zhang, 2022). PERs are delegated by the education department to develop teacher incentive schemes for schools under its jurisdiction. These incentive schemes, such as "excellent teacher selection" and "exemplary teaching paradigm award," are manipulated to support teacher job satisfaction and career development. Furthermore, PERs are responsible for providing high-performing teachers with more opportunities for professional development, such as participating in core research projects and academic exchanges, with a view to building the talent pool for regional education development. PERs also help local schools foster a positive campus culture to increase teachers' senses of belonging to the school and identification with their profession (Xu, 2023).

Developing and Popularizing Educational Resources

Selecting and Developing Optimal Teaching Materials

The adoption of the right teaching materials is crucial to the successful implementation of curricula. Teaching materials are an essential source of knowledge for students; high-quality instructional materials facilitate students' comprehension and mastery of knowledge, thus enhancing their learning outcomes (Li, 2021). PERs must pay substantial attention to the selection of textbooks and the development of necessary supplementary teaching materials to ensure the quality of student learning. First, they screen all sorts of textbooks published and select the right ones according to the national curriculum programs and course standards. Often, they need to work with teachers to develop supporting supplementary teaching materials, such as exercise books and instructional PPTs, based on the actual needs of classroom teaching (Yang, 2024). In Li's study of primary science education, for instance, PERs made every effort to ensure that the teaching materials included covered all necessary strands of scientific knowledge suitable for this educational level while also providing students with abundant experimental materials and teaching aids (Li, 2024). Also, PERs review the teaching materials from time to time and update them in a timely manner to keep them consistent with disciplinary development and educational reform (Li, 2024).

Promoting the Application of Educational Technology

The use of educational technology can significantly expand the range of educational devices and resources. In the context of the digital transformation of education, PERs have the responsibility to promote the exploitation of digital resources and encourage the application of educational technology by teachers (Zheng, 2024). To do so, they need to develop ample knowledge of state-of-the-art educational technology, such as online education platforms and intelligent instruction applications, and disseminate it among teachers. In the meantime, PERs organize the digital literacy training programs to help teachers cope with the challenges of educational technology. Additionally, they focus on searching for as well as developing digital teaching resources, such as instructional videos and online courses, to enrich teachers' instructional devices. In Shen's study of junior secondary English education, PERs introduced an intelligent speech recognition application to help students modify their pronunciation and improve their proficiency in spoken English. In this process, they maintained intimate communication with the instructors to discern the effects of this application and help them solve technical issues to ensure its smooth operation (Shen, 2012).

Monitoring and Improving the Quality of Regional Education

Assessing the Quality of Education in the Region

Monitoring the quality of education concerns assessing periodically how well the educational system works and making improvements accordingly (Liu, 2021). It is a primary component of PERs' work. PERs need to develop a scientific and workable assessment indicator framework, which is used in the large-scale survey of education quality to determine the progress and challenges in regional schooling (Wu, 2017). A main feature of the assessment framework is to assess teachers' instructional quality, including teaching content, methods, attitudes, outcomes, and other dimensions. Based on the systematic assessment, they can clarify the existing level of instruction as well as spot issues and inadequacies (Jiang, 2021).

Analyzing Educational Data

PERs have the responsibility to gather and analyze educational data to support evidence-based decision-making in education (Shen, 2018). In conducting educational research, PERs pay a lot of attention to collecting all sorts of information and undertaking in-depth analysis using data analytic tools.

Based on the analysis results, they can identify the underlying regularities and development trends in education and write reports to present a relatively comprehensive picture of the issue in discussion. For instance, student academic results, a fundamental component of educational data, are regularly gathered by PERs, who will subsequently apply learning analytics to them and formulate the report on student academic quality in the region (Liu & Wu, 2019).

Instigating Reform and Innovation in Regional Education

Educational reform is a critical driving force for educational advancement, concerning changes in educational ideas, organization, contents, methods, and more. Education can better meet the needs of social and individual development by introducing reform and innovation (Wang, 2003). PERs need to keep a close eye on ongoing developments in domestic and global education and instigate reform and innovation in regional education. Often, PERs are deeply involved in the formulation of the regional plan for educational reform and are responsible for developing targeted strategies and implementing programs. They also encourage schools and teachers to innovate teaching practices by exploring new instructional methods and patterns. Furthermore, they try to generalize successful innovative experiences by propagating them in the regional community of education (Pang, 2019). In Song's study of the secondary education curriculum reform, PERs played an active role in propelling teachers to change their old notions of education and experiment with new teaching models. For example, they encouraged secondary physics teachers to adopt the experiential teaching model to increase students' hands-on experiences, which significantly enhanced the latter's grasp of knowledge of this subject. Successful cases arising in the experimentation of the said teaching model were widely spread in the region to promote the overall enhancement of physics education (Song, 2022).

Propagating Education Policies

Appropriate interpretation and thoughtful execution of education policies are of vital importance to education development, ensuring that it is on the right track. PERs have the duty to promptly transmit education policies to schools and teachers and provide them with implementation directions (Xia, 2020). To do so, they need to keep themselves informed of the publication of and changes in the central and regional governments' education policies and give reliable interpretations of them. Furthermore, they help schools develop concrete execution plans based on their specific situations and monitor the enacting process of these policies to make sure that they are seriously carried out with expected outcomes (Xia, 2020). For example, following the issu-

ance of the “Double Reduction Policy” by the central government, PERs developed a series of measures to ease the academic burden of students, such as reducing the amount of homework, optimizing test and assessment methods, etc. In the process of advancing the new curriculum reform, PERs sponsored a variety of training activities to ensure that teachers had the right conception of the new curriculum standards and educational notions (Du, 2014).

Conclusion

The five-level ETRS is critical to China's endeavor to build a high-quality education system with distinctively Chinese characteristics. PERs have played an impactful role in the ETRS by advancing the quality of basic education, promoting teacher professional development, and driving instructional reform. They act as the bridge between educational theory and practice and the intermediate link between educational departments and frontline teachers. Amid the intensifying reform of education in China, it is imperative that PERs continue to enhance their professionalism to better serve the long-term development of Chinese basic education.

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