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China's National Survey on Teaching-Research Officers and Institutions

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Highlights

- A national survey of basic education teaching-research institutions was conducted as the first nationwide comprehensive survey that involved teaching-research officers and institutions in China.
- The structures and functions of the provincial, prefectural, and county teaching-research institutions, as well as their role differentiation, were analyzed.
- The future position and development of teaching-research institutions remain important for teachers' professional development, as well as the development of teaching and research.

Keywords

National survey, system-based instructional leadership, teaching-research institution, teaching-research officer

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Introduction

Content-focused training and professional activities are welcomed by Shanghai teachers as important methods that contribute to their professional development (OECD, 2020). In general, in-service teachers' professional interaction and development in China are structured into the educational system in the form of teaching and research activities organized at the national, provincial, county, district, and school levels (Sargent & Hannum, 2009). Compared to the new international research trends of instructional coaches (Gallucci et al., 2010; Haneda, 2019) and systemic leadership (Hashim, 2020), Chinese scholars have paid attention to instructional quality assurance and system-based teacher leaders earlier, especially with the rise of curriculum reform at the end of the 20th century. However, system-based teacher leaders, known as teaching-research officers (*jiaoyanyuan*) in China, were still facing structural tensions and role duality (Shen, 2012) similar to American instructional coaches (Mangin, 2009; Kane & Rosenquist, 2019). Facilitating teaching-research officers to provide professional support for teachers and teaching has become a policy priority in China.

In 2017, the General Office of the Communist Party of China (CPC) Central Committee and General Office of the State Council jointly issued *Opinions on Deepening the Reform of the Education System and Supporting Mechanisms*, demanding the improvement of Chinese mainland education systems and supporting mechanisms to ensure the balanced and high-quality development of compulsory education. In this respect, the teaching-research system, as an important mechanism ensuring the balanced and high-quality development of regional instructional quality, needs to make changes to better serve the development of basic education.

Background and design of the national survey

To meet this broader objective, the National Center for School Curriculum and Textbook Development under the Ministry of Education in China commissioned our research team to conduct a nationwide survey "investigating the status quo of basic education teaching-research work in China." This is the first nationwide comprehensive survey of teaching-research officers and institutions in China, to the best of our knowledge. Conducted in June 2017, the survey integrated various resources and research methods including document collection, questionnaire surveys, interviews, on-site visits, online tests, and commissioned surveys. A stratified sampling method was used to select 32 provincial (including the Xinjiang Production and Construction Corps), 70 prefectural (city), and 144 county-level (district) teaching-research institutions *(jiaoyanjigou*), as well as 246 elementary, 110 junior high, and 110 senior high schools. All educational officers and teachers at the aforementioned organizations were required to participate. Moreover, the leaders of the teaching-research institutions and staff from the relevant administrative departments participated in the focus groups and individual interviews. The informed consent was obtained from all the participants.

This report presents the three main findings of this nationwide survey: (1) The affiliative structure of China's teaching-research sector is complex, and names vary by regional context; (2) institution foci and responsibilities vary according to levels; and (3) teaching-research officers are highly qualified compared to ordinary teachers. This study explored these findings in greater detail.

Findings

The affiliative structure of China's teaching-research sector is complex and names vary

In the 1950s, in an effort to improve the quality of primary and secondary school education and strengthen the leadership of local education administrative departments across primary and secondary schools, China's Ministry of Education directed education bureaus at the provincial, prefectural, and county levels to begin the process of establishing teaching-research institutions and groups. Consequently, an initial three-level teaching-research system was formed. Known as teaching-research officers, the staff of teaching-research institutions was primarily outstanding teachers with high professional competencies. Their responsibilities included conducting research on textbook development and teaching methods, as well as providing professional guidance to teachers by organizing demonstrative lessons and brainstorming sessions among teaching-research groups in primary and secondary schools. Teaching-research institutions were initially affiliated with various organizations, with some belonging to teacher-training colleges, while others served as administrative departments directly under the local education bureau. However, the affiliations of teaching-research officers were unaligned. While some officers were considered members of the educational administrative departments, others were considered professional teachers. This complex array of affiliative structures remained.

The nationwide survey revealed that 23 different names were used for the 32 provincial teaching-research institutions. These institutions can be divided into the following three categories based on their affiliation: those affiliated to academies/institutes of the educational sciences (18 institutions, 56.25%); education administrative departments, such as the education department and the education commission (11 institutions, 34.38%); and teacher colleges (3 institutions, 9.37%).

The prefectural-level structure was similar to the provincial. However, it was found that in Lhasa, one such institution was affiliated with the teaching-research office of the No. 2 senior high school. While names of prefectural-level institutions were more diverse than those at the provincial level, they were similar insofar as the majority were affiliated with academies/institutes of educational sciences, followed by those affiliated with educational administrative departments, and a smaller proportion affiliated with teacher colleges. For reasons such as the convenience of vertical cooperation and coordination, the affiliations and names of prefectural-level institutions tended to be consistent with those of corresponding provincial-level institutions. For example, the provincial

institution in Henan was called the, and prefectural-level institutions were also called Basic Education Teaching-Research Offices. As another example, the provincial institution in Guizhou was called the Guizhou Academy of Education Sciences, and prefectural-level institutions were named Institutes of Educational Sciences.

The names, affiliations, and scope of responsibilities of these institutions at the county level appear to be much more diverse. At the county level, more institutions were affiliated with their relative educational administrative departments, followed by those affiliated with teacher colleges and a minority affiliated with centers of educational sciences.

The focus and responsibilities of teaching-research institutions vary according to level

Teaching-research institutions were established with clearly identified functions, including teaching-research, guiding, and managing the teaching practice of local schools. Accordingly, the research team divided the functions of teaching-research officers into the following three dimensions: research, guidance, and management and service. Specifically, teaching-research refers to research on curriculum design, teaching materials and methods, and student learning, including corresponding research projects and the evaluation and promotion of research results. Guidance refers to the direct guidance of in-class teaching, development of corresponding academic subjects, and development of teachers, including organizing discussions addressing common problems encountered by teachers, discussions surrounding specific teaching topics, and basic teaching skills training. Finally, management and service refer to the arrangement of training, evaluations, inspections, and competitions targeting schools and teachers, including the analysis of examinations, academic quality, and other professional evaluations.

As shown in Table 1, the mean values for research, guidance, and management and services were 3.02, 3.59, and 3.48, respectively. The guidance dimension had the highest rating, indicating that the function was adequately executed. The ratings of the management and service dimensions were comparatively lower, while the research dimension had the lowest rating.

County-level teaching-research institutions reflected the highest performance in the guidance function, followed by prefectural-level institutions. Provincial-level institutions exhibited the

Table 1. Key functions and activities of teaching-research institutions at different levels.

	Research (m)	Guidance (m)	Management and service (m)
Provincial level	3.12	3.38	3.22
Prefectural (city) level	3.08	3.61	3.45
County (district) level	2.97	3.64	3.56
Total	3.02	3.59	3.48

worst performance. These findings suggest that guidance was better executed at the county level, whereas research was better executed at the provincial level.

The results also revealed that the proficiency of the execution of functions varies by region. Specifically, East China appeared to have the highest overall performance in all three functions, followed by North China. Southwest China had the lowest performance in terms of research, whereas Northwest China performed the poorest in terms of guidance, management, and service functions. These findings indicate that East China's teaching-research system is the most comprehensive and well developed.

Teaching-research officers are subject experts possessing higher academic qualifications and professional titles

According to the survey results, the average numbers of teaching-research officers at the provincial, prefectural, and county levels were 68, 50, and 36, respectively. The numbers of teaching-research institutions at the provincial, prefectural, and county levels were 32, 332, and 2,854, respectively.

The approximate number of teaching-research officers in the nation was calculated using the following formula: the average number of teaching-research officers by institution × the number of administrative divisions. The results suggest that there are approximately 120,000 full-time teaching-research officers nationwide. Table 2 presents the estimated number of teaching-research officers in Chinese mainland.

However, the number of full- and part-time teaching-research officers was approximately 76,600 and 14,900, respectively. The results revealed 141,400 fully authorized positions for teaching-research officers, and approximately 64,700 authorized positions were not directly dedicated to teaching research. This discrepancy directly affects the effectiveness of teaching quality in some regions. Based on the total number of basic education schools, full-time teachers, and students across the nation, the estimated ratio of teaching-research officers (including part time) to basic education schools (including preschools) was 1:5.5, while the ratio to teachers (including

Table 2. Estimated number of teaching-research officers in China.

Level	Number of research institutions	Average number of teaching-research officers	Number of administrative divisions	Estimated number of teaching-research officers
Provincial level	27	68	32	2176
Prefectural (city) level	51	50	332	16600
County (district) level	114	36	2854	102744
National total	192	/	/	121520

those in preschools) was 1:153.9, and the ratio to students (including those in preschools) was 1:2481.2. Assuming that one teaching-research officer was in charge of only one subject, the results suggest that they have to serve 5.5 schools, 154 teachers, and 2,481 students on average to meet demands, structurally hindering the provision of personalized guidance.

Furthermore, the results show that teaching-research officers tend to have higher academic qualifications and professional titles than ordinary teachers. More specifically, over 80% of teaching-research officers held the title of senior or first-level (advanced) teachers. In terms of educational background, 80.7% were undergraduates, 12.5% were postgraduates, and 1.2% were doctoral graduates; the remainder received a vocational college degree or a lower level of education. As such, the overall qualifications of the teaching-research team were satisfactory, and teaching-research institutions gradually attracted high-level talent. Table 3 presents basic information on teaching-research officers.

Table 3. Basic information of teaching-research officers.

Attribute	Category	Number	Agreement
Gender	Male	2,422	44.1%
	Female	3,067	55.9%
Position	Leader of teaching-research institutes	490	8.9%
	Teaching-research officers	4,177	76.1%
	Staff of scientific research institutes	116	2.1%
	Others	706	12.9%
Teaching-research institutes	Provincial level	766	14.0%
	Prefectural (city) level	1,523	27.7%
	County (district) level	3,200	58.3%
Responsibilities per phase of education	1 phase	3,823	69.6%
	2 phases	1,019	18.6%
	3 phases	488	8.9%
	>3 phases	159	2.9%
Educational background	Lower than senior high/vocational school	5	0.1%
	Vocational college	302	5.5%
	Undergraduate	4,427	80.7%
	Postgraduate	689	12.5%
	Doctoral graduate	66	1.2%
Affiliation	Teaching-research institutes	4,581	83.5%
	Other institutes	908	16.5%
Years of teaching-research experience	0–10	2,937	53.5%
	11–20	1,766	32.2%
	21–30	597	10.9%
	>30	189	3.4%

According to the survey results, the educational background of the county- and prefectural-level teaching-research officers—more than 90% of whom were undergraduates and postgraduates—was similar to the national average. However, 35.2% of provincial-level teaching-researcher officers were postgraduates and 5.6% were doctoral graduates, a significantly higher proportion than the national average. The results show that provincial-level teaching-research institutions had the highest educated talent pool, followed by prefectural-level institutions. Meanwhile, only 0.7% of the teaching-research officers at the county level were doctoral graduates; more than half of these doctoral graduates worked in a certain district of Beijing, while the remaining worked in provincial capitals or counties (districts) of large cities.

According to the results, teachers' self-reported top three competencies were pedagogical content knowledge (PCK) (16.7%), knowledge and competency in teaching research (14.5%), and content-specific knowledge (CK) (14.1%). However, according to the interviewed teachers, the top three competencies of the teaching-research officers were PCK (44.28%), knowledge of and ability to promote teaching quality (37.26%), and CK (37.09%). As such, in terms of top competencies, the teaching-research officers and teachers shared similar views overall. This finding corresponds to the expectations of the education system, with teaching-research officers expected to be experts in academic subjects. This finding also echoes the composition of the teaching-research team and its pace of work.

Conclusion

In summary, during the 70-year development of basic education in Chinese mainland, the teaching-research system has effectively ensured the quality of regional education. The positive impact of the teaching-research system on teacher quality was revealed following the success of students from Shanghai in the Program for the International Student Assessment test, the experience becoming an effective trigger for improving the quality of education (Gu, 2014; Liang et al., 2016). With the rapid development of education, the unclear positioning and increasing role ambiguity of teaching-research institutions and the lack of standardized professional requirements for teaching-research officers have become unavoidable issues in the development of basic education in China.

In 2019, the Central Committee of the CPC and the State Council jointly issued a document titled *Opinions on Deepening Education and Teaching Reforms and Improving the Quality of Compulsory Education*, specifically pointing to the teaching-research management system as a key area of education reform. The document also clarified the supporting role played by teaching-research institutions in improving the quality of education. It also proposed that corresponding departments clarify their responsibilities and the professional standards of their relative teaching-research officers to improve the mechanisms for admission, exit, assessment, incentives, and professional development. In the same year, the Ministry of Education issued a new document titled *Opinions on Strengthening*

and Improving Teaching-Research Work of Basic Education in the New Era emphasizing the professional orientation of teaching-research officer's work. According to the findings, the diversity of institution names and affiliations obscures the essential work of teaching-research officers; provincial-level teaching-research officers are good at research, while county-level teaching-research officers are good at teaching guidance; and the quality and number of teaching-research officers in counties is insufficient to provide systematic support for teacher and instructional improvement. The survey suggested the need to highlight the independent position of teaching-research institutions, improve the management of their affiliation, and establish teaching-research officers as system-based teacher leaders to enable their capability. The teaching-research institution will inevitably be involved in a lot of managerial work if it is a subordinate department of the education bureau, hindering its professional influence. A professional learning community composed of teachers and teaching-research officers at all levels is not only conducive to promoting teachers' professional development but also to the development of teaching and research.

Contributorship

Huimin Hu was responsible for the overall design and implementation of the study, including data collection, management, and writing. Wei Shen was responsible for analyzing the data, finalizing the report, and responding to the reviewers' comments.

Declaration of conflicting interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethical statement

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