



Research on the Enhancement of Teachers' Work Engagement in Township Primary Schools in Northeast China

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Abstract. Work engagement among township primary school teachers is a critical determinant of grassroots educational quality and a foundational element in advancing educational equity. However, township schools in Northeast China continue to face systemic challenges, including resource scarcity, structural workforce imbalances, and increasing non-instructional demands. This study takes all primary school teachers in Langxiang Township, Heilongjiang Province, Northeast China, as the research subjects. Currently, they are confronted with three core challenges: role overload, digital anxiety, and insufficient impetus for innovation. In response, a tripartite intervention framework is proposed: establishing a cooperative mechanism between normal universities and township schools to alleviate structural burdens; implementing tiered digital literacy training to enhance pedagogical efficiency; and optimizing the evaluation system to recognize holistic educational outcomes and activate innovative vitality. These findings enrich the research on township teacher development and offer actionable pathways for policymakers seeking to fortify the cornerstone of township education.

Keywords: Work engagement; Township primary school; Primary school teachers; Compulsory education

1 Introduction

Kahn in his seminal work, defined work engagement as the harnessing of organization members selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during role performances.^[1] Subsequently, Schaufeli et al. defined work engagement as a positive, fulfilling, work-related state of mind characterized by vigor, dedication, and absorption in 2002.^[2] A high level of work engagement indicates that employees are willing to invest substantial time, resources, and energy into their work tasks. Work engagement is a key determinant of various attitudinal and behavioral outcomes in the workplace.^[3] The

significance of work engagement among township teachers is multifaceted: it serves as a cornerstone for realizing national educational strength and rural revitalization by translating macro-level policies into quality instruction at the grassroots level; it acts as a pivotal fulcrum for upholding educational equity, facilitating the qualitative shift from mere access to quality education through the creative optimization of limited resources; it functions as a trust nexus within local communities, whereby teachers' dedication transforms familial skepticism into a shared conviction in the transformative power of education; and it constitutes an endogenous driver for invigorating school vitality, fostering a self-sustaining, positive feedback loop of pedagogical innovation and student growth that safeguards against institutional stagnation even amidst resource constraints.

Northeast China faces unique educational challenges. Demographically, Heilongjiang recorded China's lowest birth rate at 3.35‰ in the 2025 Statistical Yearbook, with Jilin and Liaoning at just 4.17‰ and 4.32‰—the three lowest nationwide. Persistent low fertility and labor outflows have caused a sharp decline in student enrollment, trapping many northeastern township primary schools in a contraction cycle of fewer students, weaker teaching staff, and lower quality. Regarding resource allocation, limited local fiscal capacity combined with harsh, prolonged winters creates difficulties in attracting young graduates and retaining talent—factors that collectively constrain the improvement of teachers' work engagement.

As teachers constitute the core driving force of education, enhancing their work engagement can directly improve teaching quality, elevate educational standards, and narrow the comprehensive competency gap between urban and township students. Consequently, as many nations emphasize the importance of foundational education, increasing attention is being directed toward the construction of a high-quality professional teaching force, thereby further underscoring the significance of teacher work engagement. Teachers' work engagement serves as a core metric for evaluating the efficacy of their professional practice; it directly determines whether teachers are willing and able to translate policy mandates into high-quality pedagogical actions. Therefore, driven by the imperatives of township educational development, exploring effective pathways to enhance the work engagement of township teachers has emerged as a central concern within the field of education.

2 Method

2.1 Scale

Utrecht Work Engagement Scale (UWES). This study employed the Utrecht Work Engagement Scale (UWES-9) developed by Schaufeli et al. to measure teachers' work engagement.^[4] Work engagement is conceptualized as comprising three dimensions: possessing high levels of energy and mental resilience, a willingness to invest effort, and persistence in the face of challenges; being deeply involved in one's work and experiencing a sense of significance, enthusiasm, inspiration, pride, and fulfillment; and being fully concentrated and happily engrossed in one's work. Two representative

items from this scale are: "At my work, I feel bursting with energy" and "I am immersed in my work."

2.2 Data Collection

By adopting the method of case study, all primary school teachers in Langxiang Town, Heilongjiang Province in northeastern China were taken as samples. Langxiang Town, as a typical town in northeastern China, has excellent sample value. A combination of questionnaire surveys and interviews was utilized to identify the present situation and underlying issues concerning township primary school teachers' work engagement. A total of 83 paper-based questionnaires were distributed on-site and all were successfully retrieved. The sample size exceeded the requirement of ten times the number of scale items, thereby satisfying the criteria for survey analysis. Subsequently, six teachers were interviewed. The demographic characteristics of the sample are presented in **Table 1** and **Table 2**.

Table 1. Demographic Information Form

Category		Number	Percentage
Gender	Male	13	15.66%
	Female	70	84.34%
Age	< 30	3	3.61%
	30-39	9	10.84%
	40-49	39	46.99%
	> 50	32	38.55%
Teaching years	< 10	2	2.41%
	11-20	14	16.87%
	> 20	67	80.72%
Monthly income(RMB)	4000-5000	4	4.82%
	5000-6000	17	20.48%
	6000-7000	26	31.33%
	> 7000	36	43.37%

Table 2. Interview Population Demographic Information

Interviewee	Basic Information	Discipline
T1	Academic year director	Chinese
T2	Academic year director	Politics
T3	Head teacher	Chinese
T4	Head teacher	Mathematics
T5	Subject teachers	English
T6	Subject teachers	Science

3 Results

In the present investigation, Cronbach's α exceeded 0.8, indicating high reliability and strong internal consistency with minimal measurement error. Furthermore, the Kai-

ser-Meyer-Olkin measure was greater than 0.6, signifying that the data were suitable for factor analysis. The uniqueness values ranged between 0.0950 and 0.3639, suggesting that only a small proportion of the variance in each variable could not be explained by the common factors. The descriptive statistics are presented in **Table 3**.

The teacher workforce in the township primary schools of this region exhibits typical characteristics of feminization, middle-aging, an overall income level at the upper-middle range, rich experience, yet a notable insufficiency of new entrants. Overall, the scale results were less than satisfactory. Item Q6 yielded the highest score, while Q4 and Q5 scored above the mean, indicating that teachers, on the whole, take pride in their profession and are willing to dedicate themselves to the educational endeavor. However, scores for items within the vigor and dedication dimensions fell below the overall mean of 3.29, suggesting that township primary school teachers lack vigor and concentration in their work.

Table 3. Descriptive Statistics

Dimension	Items	Obs	Mean	SD
Vitality	Q1 At my work, I feel bursting with energy.	83	3.01	0.65
	Q2 At my job, I feel strong and vigorous.	83	2.77	0.69
	Q3 When I get up in the morning, I feel like going to work.	83	2.23	0.89
Dedication	Q4 I am enthusiastic about my job.	83	3.82	0.61
	Q5 My job inspires me.	83	3.72	0.63
	Q6 I am proud of the work that I do.	83	4.47	0.55
Focus	Q7 I feel happy when I am working intensely.	83	3.13	0.71
	Q8 I am immersed in my work.	83	3.72	0.48
	Q9 I get carried away when I am working.	83	2.73	0.75

4 Challenges

4.1 Role Overload Encroaching upon Instructional Space

Administrative tasks increasingly encroach upon teaching responsibilities, depleting teachers' mental energy. Interviews revealed that due to remote locations and deficiencies in infrastructure and staffing, teachers must function simultaneously as knowledge transmitters, psychological counselors, and life managers. Moreover, an aging workforce and severe shortage of young teachers exacerbate this burden. Lacking specialized mental health training and adequate counseling facilities—and facing a high proportion of left-behind children with limited self-care abilities—homeroom teachers frequently experience mental and physical exhaustion. As professional autonomy is eroded by non-instructional labor, work engagement is inevitably diluted. In addition, as the population in counties moves to towns, the number of students in rural primary schools continues to shrink. Many schools need to reduce their staff and merge classes. Some overstaffed teachers are facing job adjustments. This uncertain career outlook further amplifies the collective anxiety of teachers and directly affects their work commitment.

4.2 Digital Anxiety Diminishing Self-Identity

The waves of digital transformation and educational modernization have swept into township education without the corresponding infrastructure support or capacity-building systems. For township teachers situated at the resource periphery, a series of technological symbols—smart classrooms, online teaching research, data profiling—have not become tools that empower instruction; rather, they have been alienated into oppressive instruments. Forced into circumstances characterized by unstable network terminals and a lack of regular technology training, these teachers experience digital anxiety.^[5] A teacher with over twenty years of experience remarked during an interview: "In the past, without the concepts of artificial intelligence and digitalization, a blackboard and a projector were enough to effectively convey knowledge to students. Nowadays, achieving technological innovation in the classroom is truly difficult, and I feel it has actually reduced teaching efficiency. At the very beginning, even basic online homework grading required a long time to figure out. I constantly feel I cannot keep up with the requirements and am becoming increasingly less confident." Meanwhile, as high-quality curriculum resources are disseminated worldwide via the cloud—while promoting educational balance and equity—they inevitably diminish township teachers' sense of self-worth, thereby reducing their work vitality and focus.

4.3 Insufficient Impetus for Innovation and Development

Beneath the surface of an aging staff and outflow of young talent lies a deeper predicament: structural workforce imbalance and institutional stagnation. The few young teachers recruited often view township posts merely as temporary career springboards. Attributing low engagement solely to laziness is a superficial moral judgment; from an organizational sociology perspective, this passivity is a strategic self-diminishment for self-preservation within a resource-scarce, change-resistant environment. As one grade-level director noted, within closed, acquaintance-based circles, any investment in pedagogical innovation is perceived as destabilizing the status quo. Consequently, lacking platforms and resources, even motivated teachers abandon innovation. Under the dual pressure of talent attrition and suppressed dynamism, the township school system succumbs to developmental stagnation.

5 Discussion

5.1 Recommendations

Establishing Normal Universities—Township Schools Cooperative Mechanism.

Establishing a cooperative mechanism between universities and township schools constitutes a sustainable pathway for addressing teacher role overload, mental exhaustion, and structural workforce imbalance. Normal universities should integrate voluntary township school service into pre-service teachers' practical credit systems,

scholarship evaluations, and graduate recommendation assessments.^[6] Online and offline teaching assistant positions should be created. Online assistants would manage data entry forms and social media operations assigned by township schools; resident assistants would aid with grading assignments, supplementary instruction, and after-class Q&A sessions. It is recommended to adopt the principle of "household-registration matching" by selecting normal university students from their places of origin to return to their hometowns for assistance. This approach can reduce adaptation costs, solve accommodation problems, and lay a foundation for retaining teachers through geographical and emotional ties.

A closed-loop psychological supervision system should be established to mitigate professional burnout. Remote case supervision teams comprising psychology graduate students could provide weekly video consultations or sandplay therapy for referred students, alleviating teacher anxiety while generating research outputs. Concurrently, professors could convene online Balint groups and workshops^[7] focused on occupational stress, offering township teachers a secure professional space for emotional articulation and group support.

Meanwhile long-term collaborative field research sites are recommended. Graduate students in education and psychology, embedded as teaching assistants conducting site-based research, would simultaneously ease teacher role overload pressures and contribute case-study data to academic scholarship. Outstanding township teachers could be dispatched to normal universities to deliver lectures and participate in pre-service training. These educators bring vivid teaching cases and localized wisdom into university classrooms, enriching teacher preparation programs while reinforcing township teachers' professional identity and sense of accomplishment.

Enhancing the Digital Literacy of Township Teachers.

Addressing significant age disparities requires tiered training paired with robust incentive mechanisms. For older teachers with limited digital skills, practical coaching in Word, Excel, and PowerPoint should adopt a hands-on, one-on-one tutoring approach to ensure independent mastery of electronic lesson preparation and grade entry. For early- and mid-career teachers, training should prioritize generative AI applications—including AI-assisted lesson planning using Doubao or Kimi for instructional frameworks, AI-assisted grading, and digital human micro-lecture creation. For proficient key teachers, advanced training should cultivate capacity in AI-driven learning analytics, classroom diagnostics, and data-evidenced teaching research.

Scholars caution that mandatory, poorly targeted training exacerbates workload burdens.^{[8][9]} Therefore, digital training content must align with authentic rural teaching needs rather than imposing urban smart-education models. Technology should address concrete challenges in lesson preparation, instruction, and after-school services, thereby enhancing efficiency rather than compounding stress. Schools should formally recognize digital literacy and innovative technology application as criteria for awards, excellence designations, and promotions—positively motivating genuine pedagogical improvement.

Furthermore, the successful implementation of tiered digital literacy training hinges on establishing a sustainable support ecosystem rather than offering isolated workshops. Township schools should collaborate with local normal universities or educational technology companies to develop on-site technical support teams, where digitally proficient teachers serve as peer coaches, providing just-in-time assistance during daily instruction. Meanwhile, a shared digital resource library tailored to rural teaching contexts, including localized lesson plan templates, multimedia materials aligned with township curricula, and AI tool operation video tutorials, should be created and continuously updated through crowd-sourcing among participating teachers. To mitigate the risk of technology-induced anxiety, school leaders should foster a psychologically safe climate that encourages experimentation and tolerates initial failures, emphasizing that digital tools are meant to augment rather than replace teachers' pedagogical expertise. Regular digital sharing sessions where teachers demonstrate successful technology integration practices can cultivate a culture of peer learning and collective efficacy. Only when digital literacy training is embedded within a holistic framework of ongoing support, collaborative knowledge building, and positive reinforcement can it genuinely empower township teachers, transforming potential technostress into a driver of professional growth and instructional innovation.

Optimizing the Evaluation System and Activating Innovative Vitality.

Reinvigorating township teachers' engagement requires optimizing the teaching quality evaluation system and expanding innovation platforms. Innovation vitality refers to the willingness, capability, and sustained action of individuals or organizations to proactively seek new methods and pathways when confronting problems. For township teachers, it does not mean novelty for its own sake, but rather an active state of optimizing teaching methods, energizing the classroom, and solving concrete educational challenges under conditions of resource constraints.

First, the fixation on test scores and promotion rates must be dismantled in favor of a multifaceted assessment framework.^[9] Implicit educational outcomes—student habit formation, psychological well-being, moral development, and physical fitness—should be integrated into evaluation criteria, rendering teachers' holistic contributions visible and acknowledged. For instance, improvements in student behavior, mental health status, and home-school communication efficacy could serve as reference indicators thereby motivating teachers to prioritize students' holistic development over mere test scores.

Second, township schools must transcend closed, acquaintance-based mentalities and embrace innovation-driven development. Urban-rural pedagogical exchange platforms—including online teaching and research, offline demonstration lessons, and collaborative planning—should expose teachers to advanced methodologies. Educational authorities should provide resources for instructional innovation, such as subsidies for digital infrastructure and support for teaching competitions. While simultaneously establishing inter-school teaching research communities to facilitate experience sharing and collaborative innovation among teachers from different schools.

Third, retaining young teachers necessitates long-term incentive structures beyond rural subsidies. Clear career pathways, young teacher cultivation programs, and key-teacher mentorship mechanisms should be established. Supporting young teachers' participation in pedagogical reforms and research projects ensures equitable developmental opportunities. Simultaneously, improving working and living conditions fosters a sense of belonging, thereby enhancing overall work engagement. Only then can a virtuous cycle of "attracting, retaining, and teaching well" be formed, thereby solidifying the teaching workforce foundation of township education.

5.2 Limitations

This study is based on a single sample from Langxiang Township in Northeast China; therefore, the findings cannot be directly generalized to all townships across China. Significant heterogeneity exists among Chinese townships in terms of economic conditions, geographical isolation, ethnic composition, and local policy implementation. As a typical resource-constrained township in Northeast China, Langxiang's findings are primarily applicable to township contexts characterized by similar patterns of population outflows, an aging teaching workforce, and high fiscal dependence. Future research should extend the investigation to diverse township types, including those in the developed eastern coastal regions, underdeveloped western areas, and ethnic minority regions.

6 Conclusion

Against the backdrop of China's strategic push for rural revitalization and high-quality development of compulsory education, enhancing the work engagement of township teachers has transcended traditional concerns of individual job satisfaction and assumed profound systemic and epochal significance. In an era marked by rapid demographic shifts—including declining birth rates and continued outmigration of rural populations—township schools face the dual pressure of shrinking student numbers and a restructuring of the teaching force, making teacher engagement a critical lever for institutional survival and developmental vitality.

Meanwhile, the ongoing digital transformation of education, accelerated by generative AI and smart technologies, presents both opportunities and risks: engaged teachers are more likely to embrace these tools as pedagogical enhancers, whereas disengaged educators may experience heightened technostress and professional obsolescence anxiety. Furthermore, as educational equity policies shift from guaranteeing basic access to promoting quality and holistic outcomes, township teachers are no longer mere knowledge transmitters but serve as frontline agents of social mobility, psychological support providers for left-behind children, and cultural anchors within their communities. Their sustained work engagement directly determines whether policy intentions translate into tangible improvements in student learning, well-being, and long-term life chances. Therefore, in the current era, fostering township teachers' work engagement is not merely a matter of human resource management but consti-

tutes a fundamental strategy for safeguarding grassroots educational quality, narrowing urban-rural competency gaps, and ultimately achieving the transformative promise of education as an engine of equitable and sustainable rural development.

Based on the survey findings and the proposed countermeasures, this study concludes that although township primary school teachers in northeastern China exhibit commendable professional pride and dedication, their work engagement is significantly undermined by low scores in the vigor and concentration dimensions, manifesting as a state of emotional exhaustion and cognitive distraction. The underlying root causes can be systematically summarized as follows: role overload induced by work overload, professional anxiety accelerated by digital transformation, and insufficient impetus for innovation resulting from structural workforce imbalances and institutional rigidity. To address these challenges, a tripartite intervention framework should be established: a cooperative mechanism between normal universities and township schools to alleviate structural burdens, tiered digital literacy training to enhance teaching efficiency, and an optimized evaluation system to recognize teachers' educational outcomes. Collectively, these measures offer a sustainable pathway to transform township teachers' work engagement from passive endurance to active empowerment, thereby reinforcing the cornerstone of grassroots educational quality and equity.

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Data Availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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Conflicts of Interest

The authors declare no conflict of interest.

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