Leading for Whom? Teaching-Research Officers’ Role Perception and Work Engagement in Chinese Mainland

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Abstract

Purpose: The purpose of this article is to analyze both teaching-research officers’ (TROs) role perceptions and work engagement, figuring out how their competing roles are balanced to ensure continued work engagement and which roles have greater benefits to the community and educational reform.

Design/Approach/Methods: The study employs a questionnaire, which is composed of an inventory of work role requirements and the Utrecht Work Engagement Scale, to investigate TROs’ role perception, work engagement, and their relationship.

Findings: TROs’ work experience had a complicated relationship with their work engagement. The two strands of the TROs’ role orientation co-existed within their daily work and strengthened each other through exerting effects on the dedication and absorption aspects of work engagement. However, TROs concerned with teacher development displayed higher work engagement than those who put a greater emphasis on policy implementation.

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Originality/Value: The study contributes to current research in three respects. First, it bridges the macro-level trend of education reform with micro-level role internalization of individuals. Second, it broadens our understanding of work engagement by linking it with the subjective perceptions of one’s work role. Finally, this Chinese case is expected to enrich international perspectives on teacher leaders in the context of top-down districtwide instructional reform.

Keywords
Role perception, teacher leader, work engagement

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Introduction
The rise of the fourth wave of school improvement (Muijs, 2010) has shifted the focus of school improvement from single institute or organization to the district or even regional level. With the tide, there has also been a growing body of research on the role and function of district-level teacher leaders. For instance, aligning the curriculum, assessment, and policy; designing organizational architecture; allocating and distributing resources; ensuring evidence-based improvement; and sensemaking sharing were found to be effective strategies by which district or middle leaders can launch curriculum reform and support the professional development of teachers (Gallucci et al., 2010; LaPointe-McEwan et al., 2017; Rorrer et al., 2008; Soini et al., 2018).

However, previous work on the traits, styles, and strategies of teacher leaders underlined the need to expand leadership theory to encompass the full range of human well-being and agency (Chingara & Heystek, 2019; Yamamoto et al., 2014). Teacher leaders’ emotion, self-efficacy, agency, and so on play an important role in the instructional reform. That is to say, the actual effect of the district instructional coaching depends not only on complicated contextual factors, such as the state and national reform agenda, financial resources, availability of student performance data, and the degree of congruence between leaders’ existing roles and program requirements (Mangin, 2009), but also on teacher leaders’ sensemaking of their roles and their mental state.

Teaching-research officer (TRO) is a kind of teacher leader in Chinese mainland. Distinguished from the school-based teacher educator who mentors student teachers and the education inspector who has formal supervisory power over schools, TROs provide professional support for in-service teachers. The emergence of TROs can be traced back to the 1950s when local government selected a group of outstanding school teachers to study teaching materials and methods and to disseminate best practice among school teachers. The three-tier hierarchy model of teaching-research institutes (TRIs) was established in the latter half of the 20th century. TROs were no longer school teachers after the establishment of TRIs. They move to district, city, or provincial TRIs, some of which
belong to teacher-training colleges, while others serve as functional departments directly under the local education bureau. “Several opinions on improving and strengthening the work of teaching-research offices” promulgated by the State Education Commission in 1990 firstly defined TROs’ working requirements, pointing out that TROs should provide evidence basis for local educational authority’s decision-making, and be responsible for teacher mentoring, teaching inspection, teaching materials compiling, instructional quality evaluation, and promotion of best practice. TROs took a dual role for a long time even though some educational policy downplayed their administrative role and emphasized the professional role. Until 2019, a new policy document titled “Opinions on strengthening and improving teaching-research work of basic education in the new era” was released from the Ministry of Education, changing the framework of teaching-research system. Replaced with a five-tier structure of TRIs, which added a national level and school level, the new system regarded TROs as teachers and researchers. However, how TROs fulfilled their work requirement and their working status remains unexplored.

In contrast, there is a large body of research on TROs’ role expectation. Instructional leader (Liu, 2014), instructional researcher (Wei, 2010), curriculum leader (Cui, 2012), and broker (Luo & Meng, 2017) were used alternately to describe TROs’ new image. And some research took the teaching-research system as one of the keys to Shanghai’s success in the Programme for International Student Assessment (Ji, 2016; Liang et al., 2016). Nonetheless, there is a lack of research on TROs’ perceptions of their working roles and occupational well-being, which has constrained our understanding of their precise function in education reform. The purpose of this study is therefore to understand TROs’ role perceptions and work engagement, figuring out how their competing roles are balanced to ensure continued work engagement and which roles have greater benefits to the community and educational reform.

**Literature review and hypotheses**

*Districtwide instructional reform and the role of the teacher leader*

Ogawa and Bossert (1995) expanded our understanding of the teacher leader by shedding light on the connection between leadership and organization quality, which was confirmed in later research (Durand et al., 2016; Louis et al., 2010; Silva et al., 2000). Durand et al. (2016) found that proactive and adaptive district leaders used a contingency-based fusion of bridging, buffering, and brokering strategies, which bred organizational learning orientation and policy implementation innovation. These new developments, in turn, gave new rise to the theories of “teacher leadership” (Lovett, 2018) and system-based instructional coach (Gallucci et al., 2010). However, researchers frequently use the word “teacher leader” somewhat loosely to fit a variety of institutional contexts. In addition, the rise of district and subject leaders has extended the research scope of teacher leaders. To distinguish school-level teacher leaders from district-level instructional leaders,
Spillane and Thompson (1997) identified members of “local education agencies” who helped to develop district instructional policies as part of their formal or informal role responsibilities. District leaders pay more attention to systemic change and performance alignment, and motivate school principals to participate in instructional reform (Honig & Lydia, 2015; Leithwood & McCullough, 2015), whereas subject leaders are “responsible for the efficient and effective performance of the subject department” (Friedman, 2011, p. 291). In this study, we defined “teacher leader” based on the working characteristics of TROs—that is, individuals who promote systemic instructional change as well as change in the subject-specific teaching of school teachers. TROs, to a certain extent, are similar to American district-employed instructional coaches who emerged with the educational accountability policy and subject teaching reform in the early 21st century. Reading First, Striving Readers, and No Child Left Behind Act have encouraged the expansion of coaching across the U.S. (Marsh et al., 2010). Extant research examined an instructional coach’s role in teacher development and policy implementation, revealing that coaches use a continuum of stances from directive to facilitative (Collet, 2012; Ippolito, 2010), which is related to their underlying values and assumptions about teaching and learning (Haneda et al., 2019). And scholars in this area made the call for more empirical studies of system-wide teacher leader’s long-term professional development (Gallucci et al., 2010; Haneda et al., 2019).

In practice, experienced TROs are welcomed by school principals and classroom teachers. However, there is little research on the relationship between these cross-boundary teacher leaders’ experience and their work engagement. This is in contrast to the finance industries, wherein the relationship between leaders’ experience and work engagement is well covered (Kotzé et al., 2014).

Work experience can be defined as experience in a specific job category or simply as years of working in general. In this study, we employed profession title (TITLE) as one indicator of teacher leaders’ professional experience. In the Chinese context, teachers can be categorized as proficient teachers, accomplished teachers, highly accomplished teachers, senior teachers, and expert teachers according to their seniority. Among these five types, expert teachers are at the top of the professional ladder. The importance of expertise has been stressed in previous studies partly because it is a precondition for being a teacher leader (Odell, 1997), and it establishes credibility. However, teaching and leading require two different frames of mind (Ovando, 1996), so years of working for the current position (EXP) serves as another indicator of TROs’ experience. Based on the past arguments and findings, we proposed that TROs’ work experience is positively related to their work engagement (Becker, 1964; Mincer, 1974). This idea was formulated into the following hypotheses:

H1: TITLE is positively associated with TROs’ work engagement.

H2: EXP is positively associated with TROs’ work engagement.
Work engagement and role perception

Work engagement consists of three dimensions—vigor, dedication, and absorption—and it is a strictly positive and relatively stable indicator of occupational well-being (Schaufeli et al., 2002). Rather than a momentary, specific state, engagement is a persistent and pervasive affective-cognitive state that is not focused on any particular object, event, individual, or behavior (Schaufeli et al., 2006). This perspective on work engagement as a key dimension of occupational health and job quality underlies the Utrecht Work Engagement Scale (UWES), which is used for measuring work engagement. This instrument has been translated into many languages and applied to diverse occupational groups across the world.

In the teaching profession, work engagement has been found to be positively related to teacher efficacy (Høigaard et al., 2012). Moreover, work engagement mediated the effect of job resources on organizational commitment (Hakanen et al., 2006) as well as the effect of social support on teacher efficacy (Lu et al., 2018). These studies together suggest that work engagement is an affective variable that is primarily influenced by job and personal resources (Bakker, 2011). In this study, we used perceived work role requirements (WRRs) as an indicator of external job demands to investigate how WRRs are related to TROs’ work engagement in the Chinese context. WRRs, as a job characteristic, encompass the expectations concerning the perceived responsibilities or external requirements associated with enacting specific jobs (Dierdorff & Rubin, 2007).

Perceived WRRs are a basic yet fundamental component of effective organization and leadership, especially nowadays when work requirements are becoming increasingly complex and lacking in clear boundaries (Sanchez & Levine, 2001; Tubre & Collins, 2000). How teacher leaders perceive their complex WRRs is crucial for education reform. District leaders typically experience tension between their ambitious goals and the limited resources to achieve such goals, new directions and old structures and routines, a singular reform focus and several competing agendas, and grand plans and incomplete theories of action (Knapp, 2008). Burch and Spillane (2004) found that mid-level staff in district central offices take on four brokering roles: tool designers, data managers, trainers and support providers, and network builders. However, the authoritative orientation outweighed the collaborative orientation among these roles. Therefore, it would be necessary to explore if a similar weighting occurs among Chinese TROs, who are expected to act as knowledge brokers and policy translators to satisfy both teacher development (RT) and policy implementation (RP).

A wide range of factors have been examined in relation to WRRs identification and performance. For example, role ambiguity has been found to be negatively associated with job performance (Tubre & Collins, 2000). More importantly, job analysis ratings of task frequency and weight of priority, which represent one of the approaches used for measuring WRRs, were found to be significantly associated with work attitudes (as reflected by job satisfaction, organizational
commitment, and job involvement [Conte et al., 2005]). Therefore, perceived WRRs seem important for both organizational functioning and individual well-being. Furthermore, “teacher development orientation” and “policy implementation orientation” represent two different styles of working, with the former being driven by external forces (i.e., policy) and the latter being driven by internal motivations (i.e., community vision), which are positively correlated with work engagement by nature (Donovan, 2001; Locke & Henne, 1986). Thus, we propose that TROs with strong perceptions of their roles as teacher facilitators would also have higher levels of vigor, dedication, and concentration. In line with these observations, we propose the following hypotheses.

H3: TROs’ perceived WRRs (“teacher development orientation” and “policy implementation orientation”) are positively correlated with their work engagement (i.e., vigor, dedication, concentration).

H4: TROs with more teacher development orientation display a higher level of work engagement than do those with policy implementation orientation.

Materials and methods

Participants

The data were collected as part of a national survey on TROs. This research has been reviewed and approved by the Committee on Human Research Protection (Research Ethics Committee) of our Universities. We selected participants through multistage stratified sampling along with cluster sampling. The project was commissioned by the Ministry of Education, with whose generous support and coordination data collection was much easier. We randomly targeted half of 275 municipalities at the first stage of sampling and then two to three counties within each prefecture depending on its economic performance and education expenditure per student in 2016. A digital questionnaire was delivered to the local Bureau of Education of 322 counties across 31 provinces and then forwarded to TROs that were reachable.

Of the 5,600 surveys distributed to TROs, 5,497 were returned, among which 4,177 are valid for final analysis with 42.5% female and 57.5% male respondents. Mean years of working (EXP) was 11.4 years, and the vast majority of respondents held a bachelor’s degree (81.1%), while 12.9% held a master’s degree and 1.2% had completed doctoral education.

Table 1 presents the key variables and some additional qualifications included as controls. Notably, TROs are selected from excellent teachers in most areas of China, thus, we present TROs’ professional titles as follows, to clarify the hierarchy of these titles in a Chinese context: beginning teacher (TITLE0), proficient teacher (TITLE1), accomplished teacher (TITLE2), highly accomplished teacher (TITLE3), senior teacher (TITLE4), and expert teacher (TITLE5).
Instruments

UWES. The UWES developed by Schaufeli and his team was used to measure work engagement of TROs. The UWES decomposes work engagement into three dimensions: vigor, dedication, and absorption. Vigor is characterized by high levels of energy and mental resilience while working, the willingness to invest effort in one’s work, and persistence in the face of difficulties. Dedication is defined as being strongly involved in one’s work and experiencing a sense of significance, enthusiasm, inspiration, pride, and challenge in that work. Absorption is characterized by being fully concentrated and happily engrossed in one’s work, whereby time passes quickly, and one has difficulty in detaching oneself from work (Schaufeli et al., 2006). While there is a full version of the UWES, which encompasses 17 items, a 9-item short version is also available (called the UWES-9). These 9 items still form the Vigor (VIGOR), Dedication (DEDICATION), and Absorption (ABSORPTION) subscales. Schaufeli et al. (2006) concluded that the “UWES-9 scores has [sic] acceptable psychometric properties and that the instrument can be used in studies on positive organizational behavior,” and thus, we opted to use this concise version, just as most authors in this field do (Seppälä et al., 2009). Each item was rated on a 5-point Likert-type scale ranging from 0 (never) to 4 (always).

Confirmatory factor analysis was performed to extract the three-factor structure of UWES-9. The internal consistency of the UWES-9 is satisfactory; Cronbach’s α for VIGOR, DEDICATION, and ABSORPTION are .8476, .8636, and .8931, respectively. For more details, see Appendix Table A1.

Table 1. Descriptive statistics for key variables in use.

| Variable | Definition | Mean | SD |
|----------|------------|------|----|
| VIGOR    | Vigor factor score extracted from UWES-9 | 0.000 | 1.000 |
| DEDICATION | Dedication factor score extracted from UWES-9 | 0.000 | 1.000 |
| ABSORPTION | Absorption factor score extracted from UWES-9 | 0.000 | 1.000 |
| EDU      | Years of schooling | 16.400 | 1.213 |
| TITLE0   | Beginning teacher | 0.018 | 0.135 |
| TITLE1   | Proficient teacher | 0.003 | 0.051 |
| TITLE2   | Accomplished teacher | 0.060 | 0.238 |
| TITLE3   | Highly accomplished teacher | 0.281 | 0.450 |
| TITLE4   | Senior teacher | 0.620 | 0.485 |
| TITLE5   | Expert teacher | 0.018 | 0.131 |
| EXP      | Years of working at the current job category | 11.390 | 8.048 |
| EXP2     | Quadratic term of EXP | 194.600 | 247.900 |
| RP       | Policy implementation orientation | 0.000 | 1.000 |
| RT       | Teacher development orientation | 0.000 | 1.000 |

Note. $N = 4,177$. Only a few independent variables are presented here for space considerations; a table of full control variables is available upon request. UWES = Utrecht Work Engagement Scale.
WRRs. According to Sackett and Laczo (2003), employees’ daily activities and attributes can be used to examine their perceived WRRs. We used activity descriptors in this study since tasks and work activities are observable and considerably more discernible than attributes are, thus, we derived more accurate ratings from them (Morgeson et al., 2004).

TROs’ work was divided into two categories based on their job requirements, which were broadly driven by a policy implementation orientation (RP) and teacher development orientation (RT). Teacher development involves observations and discussion on classroom teaching, demonstrations of model practices, and evaluations and analyses of teaching quality with teaching-research groups. TROs also conduct research on subject-specific pedagogy to provide better advice for teachers. As for policy implementation, TROs organize activities for teaching evaluation and competition, engage in instructional supervision, promote best practices, assist the local education authority in controlling teaching quality, and provide suggestions for the local education authority on educational policy decision-making.

We used a 5-point Likert-type scale measuring frequency of each activity (i.e., “how often do you perform...,” 0 = never, 4 = always), as this was considered more indicative of the reality of job activities (Lindell et al., 1998). Both confirmatory and exploratory factor analyses were used to check the construct validity, the items loaded onto two factors (as expected), demonstrating good factorial validity. Policy implementation orientation was measured using 5 items, with a Cronbach’s α of .74. Teacher development orientation was comprised of 8 items, and Cronbach’s α was .89; for more details, see Appendix Table A2. The factors obtained from this procedure generate two external contextual variables that can further predict the three dimensions of work engagement.

Model specification

All the factors defined above were entered into a multiple regression model. We employed a rich set of controls to partial out confounding variables. Control variables for all models included demographic variables (e.g., gender, city of employment), human capital (years of schooling [EDU], level of honor awarded), and schooling years. Individual fixed effects were introduced to rule out teacher-level unobservables. Statistical controls also differentiate our study from other previous studies delving into this field using structural equation modeling and help offer more convincing results for the net effects of the determinants of work engagement.

The main idea to be tested can be mathematically expressed with the following equation.

\[ Y_{ji} = \alpha + \phi H + \beta_1 RP_i + \beta_2 RT_i + \beta_3 RP_i \times RT_i + \gamma X + \delta W + \varepsilon_{ji}. \]  

(1)

Here, \( Y \) is the work engagement factorial scores extracted from the UWES for \( i \)th individual TRO, with \( j = 1, 2, \) and \( 3 \) for \( VIGOR, DEDICATION, \) and \( ABSORPTION, \) respectively. \( RP \) and \( RT \) are two dimensions of TROs’ WRRs, videlicet, teacher development orientation and policy implementation.
orientation, and we tested their interactions as captured by $\beta_3$. $X$ is a vector of demographic variables and job attributes to be controlled. $H$ is a vector of human capital. For space considerations, we do not report control variables below (but available upon reader’s request); $\alpha$ is the constant.

Before testing the effect of WRRs on work engagement, we investigated the associations between working experience ($\text{EXP}$) and professional stage ($\text{TITLE}$) with work engagement. The sign and magnitude of $\alpha$ imply the nature and strength of the effects of TROs’ profession-related personal characteristics on work engagement. In addition, we enter the quadratic term of work experience ($\text{EXP}^2$) into the model to determine whether a nonlinear relationship exists.

As existing research shows that $\text{VIGOR}$, $\text{DEDICATION}$, and $\text{ABSORPTION}$ are highly correlated to each other, we tested this by forcing each dimension not being considered as the outcome variable into the model (Seppälä et al., 2009). The term $W$ is a vector used to denote these remaining dimensions (e.g., if $\text{VIGOR}$ was set as the outcome $Y$, then $\text{DEDICATION}$ and $\text{ABSORPTION}$ were entered into the determinant function, and vice versa). Therefore, $\delta$ contains two coefficients with different meanings depending on which dimension of work engagement is treated as the outcome variable.

$\varepsilon$ denotes stochastic disturbance that cannot be captured by the model, the square of which carries statistical meaning of residual variance not explained by the selected independent variables.

To examine the unique impact of individual working experience, perceived WRRs, and the dimensional interactions of the work engagement construct, we added variables in a stepwise fashion, and the marginal increment in $R^2$ for each step can be regarded as the proportion of variance explained by the newly added explanatory variables.

**Results and discussion**

The results are presented in Table 2, with the first three columns in Panel A explaining how vigor (nested within work engagement) is affected. Each column differs slightly from the others due to the addition or removal of certain contextual or job-related variables. Panels B and C show the same specifications for $\text{DEDICATION}$ and $\text{ABSORPTION}$, respectively.

Coefficients presented in Table 2 align with the research hypotheses and are in accord with common sense in the Chinese context. We can safely arrive at the following conclusions:

First, professional title is a strong indicator of all the dimensions of work engagement. Compared to those who are at the bottom of the profession ladder, a higher professional title is associated with higher levels of $\text{VIGOR}$, $\text{DEDICATION}$, and $\text{ABSORPTION}$. This partly explains why TROs with higher professional titles are more welcomed by schools in practice. Just like Odell (1997, p. 122) stated, “one cannot be an effective teacher leader if one is not an accomplished teacher.”

Years of working at the current job ($\text{EXP}$) exerted a U-shaped relationship with work engagement, as denoted by the positive effect of the quadratic term $\text{EXP}^2$; 17 years of experience in the current position was found to be the turning point. Put another way, when TROs accumulate
Table 2. TROs’ work engagement and its determinants.

|       | A: VIGOR |       | B: DEDICATION |       | C: ABSORPTION |
|-------|----------|-------|---------------|-------|---------------|
|       | (1)      | (2)   | (3)           | (4)   | (5)           | (6) |
| EDU   | -0.0193  | -0.0120 | -0.0121       | -0.0076 | 0.0018       | 0.0025 |
|       | (0.0135) | (0.0076) | (0.0076)     | (0.0135) | (0.0070)     | (0.0070) |
| TITLE1| 1.0870*** | -0.0368 | -0.0539       | 1.1422*** | 0.0935       | 0.0895 |
|       | (0.3157) | (0.1749) | (0.1744)     | (0.3147) | (0.1607)     | (0.1605) |
| TITLE2| 0.2723*  | -0.0391 | -0.0403       | 0.2958*  | 0.0189       | 0.0144 |
|       | (0.1336) | (0.0742) | (0.0740)     | (0.1332) | (0.0682)     | (0.0681) |
| TITLE3| 0.3433** | -0.0230 | -0.0285       | 0.3520** | 0.0042       | -0.0010 |
|       | (0.1256) | (0.0699) | (0.0697)     | (0.1251) | (0.0642)     | (0.0641) |
| TITLE4| 0.3975** | -0.0139 | -0.0229       | 0.3975** | 0.0003       | -0.0040 |
|       | (0.1265) | (0.0704) | (0.0702)     | (0.1261) | (0.0647)     | (0.0647) |
| TITLE5| 0.5893*** | 0.0101  | -0.0002       | 0.5627*** | -0.0368     | -0.0377 |
|       | (0.1695) | (0.0948) | (0.0946)     | (0.1690) | (0.0871)     | (0.0871) |
| EXP   | -0.0148* | 0.0005  | -0.0009       | -0.0171* | -0.0077*     | -0.0079* |
|       | (0.0067) | (0.0037) | (0.0037)     | (0.0067) | (0.0034)     | (0.0034) |
| EXP2  | 0.0004*  | 0.0000  | 0.0000        | 0.0005*  | 0.0002*      | 0.0002* |
|       | (0.0002) | (0.0001) | (0.0001)     | (0.0002) | (0.0001)     | (0.0001) |
| RP    | 0.0498** | 0.0141  | 0.0444***     | -0.0026  | 0.0641***    | 0.0302* |
|       | (0.0163) | (0.0113) | (0.0164)     | (0.0104) | (0.0173)     | (0.0131) |

(continued)
|                | A: VIGOR          | B: DEDICATION     | C: ABSORPTION     |
|----------------|-------------------|-------------------|-------------------|
|                | (1)               | (2)               | (3)               | (4)               | (5)               | (6)               | (7)               | (8)               | (9)               |
| RT            | 0.1591***         | 0.0332**          | 0.1686***         | 0.0274*           | 0.1721***         | 0.0498***         | 0.1721***         | 0.0498***         | 0.1721***         |
|               | (0.0179)          | (0.0127)          | (0.0181)          | (0.0116)          | (0.0191)          | (0.0146)          |
| RP × RT       | 0.0149⁺           | 0.0117⁺           | 0.0363***         | 0.0168**          | 0.0389***         | 0.0156*           | 0.0389***         | 0.0156*           | 0.0389***         |
|               | (0.0088)          | (0.0062)          | (0.0089)          | (0.0057)          | (0.0094)          | (0.0072)          |
| DEDICATION    | 0.6055***         |                   |                   |                   |                   |                   |                   |
|               | (0.0143)          |                   |
| ABSORPTION    | 0.1369***         |                   |                   | 0.3441***         |                   | 0.1863***         |
|               | (0.0136)          |                   |                   | (0.0115)          |                   | (0.0181)          |
| VIGOR         |                   |                   |                   |                   |                   | 0.5113***         |                   |
|               |                   |                   |                   |                   |                   | (0.0121)          |
| Other controls| √                 | √                 | √                 | √                 | √                 | √                 | √                 | √                 | √                 |
| Adjusted R²   | .0609             | .4164             | .7168             | .0671             | .4039             | .7602             | .0663             | .3367             | .6216             |

Note. N = 4,177. Standard errors are in parentheses. Control variables that are not of interest for interpretation have been omitted due to limited space. The controls for the base model of each panel (listed in columns (1), (4), and (7)) included gender of TROs and city in which the position is located. For the remaining columns, all controls were added. The response variables of columns (1)–(3), (4)–(6), and (7)–(9) are VIGOR, DEDICATION, and ABSORPTION, respectively. TRO = teaching-research officer.  
⁺p < .1. ⁺⁺p < .05. ⁺⁺⁺p < .01. ⁺⁺⁺⁺p < .001.
17 years of work experience in their current job, their work engagement begins to increase substantially as time goes on, whereas those with less than 17 years of experience (i.e., those on the left side of the U-shaped curve) appear to show worse work engagement over time. This quadratic relationship could be partially explained by Shen’s (2012) study, which showed that TROs face considerable challenges and must learn to be district teacher leaders upon transferring from the school to TRIs. In the early years of their working life, TROs have to learn how to align teaching practice with education policy rhetoric, how to convert prescribed curriculum standards into practice, how to organize district-wide activities for teacher development, and so forth, which were rarely experienced in their previous work as teachers.

Second, although perceived WRRs (teacher development orientation and policy implementation orientation) explained only 2.7–3.4% of the variance in work engagement (not reported in the table), they were significant in almost all the models. However, the effect of the teacher development orientation was not as robust as that of policy implementation orientation. The magnitude of the coefficient for teacher development orientation (RT) was 3 times that of policy implementation orientation (RP). These associations were also moderated by the other work engagement dimensions for both VIGOR and DEDICATION—particularly, adding the other two work engagement dimensions removed the statistical significance of policy implementation orientation (RP) in columns (3) and (6) of Table 2, but not for teacher development orientation (RT).

As determinants of work engagement, policy implementation orientation (RP) and teacher development orientation (RT) interact with each other to influence VIGOR. Specifically, they show a negative interaction, which means that the positive effect of the teacher development orientation (RT) on VIGOR was weakened when individuals’ policy implementation orientation (RP) increased. By contrast, for both DEDICATION and ABSORPTION, teacher development orientation (RT) and policy implementation orientation (RP) strengthened each other’s effects on work engagement. Patterns shown here suggest that different dimensions of work engagement are qualitatively different from each other. Altogether, the findings imply that TROs’ WRRs appear to complement each other when TROs are passionate for their work.

Third, regarding the factorial correlations of the dimensions of work engagement, DEDICATION had much stronger predictive power than did VIGOR and ABSORPTION. Examining the $R^2$ increments, the other two factors of the UWES-9 explained around 30% variance of the other one, with the highest being for the prediction of DEDICATION (at 35.6%). Column (6) in Table 2 shows that only 23.9% of the variance of DEDICATION is residual. DEDICATION also had the most salient impacts on VIGOR and ABSORPTION, with each unit of increase in DEDICATION causing a 0.6 standard deviation increase in the other work engagement dimensions.
Conclusion

Although the strategies for district instructional reform and system-wide teacher leaders’ roles are becoming increasingly clear, there is still limited research on how teacher leaders at district level perceive their increased WRRs and how their WRRs relate to their work engagement. It is imperative to figure out the relationship between work experience, WRRs, and work engagement among teacher leaders, especially those who must shift from the limited or managerial functions they are used to to supporting teaching and learning of all students (Honig, 2008) in the context of top-down accountability.

Our research focused on Chinese TROs to confirm the importance of leadership in the context of increasingly complex education reform and expand understanding of the psychological status of an occupation that works as boundary brokers. The current research on effects of teacher leadership has gone beyond the understanding of dichotomy of control and development, analyzing teacher leaders’ strategy and influence in specific context. Most of these were qualitative studies (e.g., Haneda et al., 2019; Ippolito, 2010), whereas this study uses a large-scale questionnaire to explore the relationship between work requirements and engagement of teacher leaders at the district level. The findings reveal that TROs maintain a delicate balance between teacher development and policy implementation. Although the senior professional development stage of most TROs proves their competence in curriculum and teaching, the adaptation of role transformation from school level to district level and related professional obligation and competence requested by increasingly changeable WRRs needs a gradual process to learn, strengthen, and stabilize after their entry, which is confirmed by interrelated linkage of teacher development orientation ($RT$) and policy implementation orientation ($RP$). These findings are consistent with Lipsky’s (1980) assertion that maintaining professionals in a bureaucracy is a feasible way of improving the quality of supporting services. Furthermore, based on the relationship of TROs’ teacher development orientation ($RT$) and policy implementation orientation ($RP$) with the three dimensions of work engagement, we can conclude that their work in teacher development does not always contradict with their work to implement policy initiatives from the perspective of well-being, which further elaborates the Ippolito’s (2010) research findings that literacy coach negotiated the tension between supporting individual teacher’s goals and encouraging particular literacy practices.

Our findings indicate that district-level teacher leaders take different stances with regard to their WRRs even though strict policy implementation fidelity is expected in China. In addition, TROs with a stronger teacher development orientation tended to have better work engagement than did those with a policy implementation orientation, indicating a rather stark difference between individuals depending on their dedication to the internal or external work motivations. The previous work experience as school teachers contributes to their familiarity with helping teacher development so that they perform better while being expected as knowledge brokers rather than policy...
translators. As infusive members and mediators of education reform at the district level, TROs may need to focus more on their teacher development work—it may be beneficial not only to the community they serve but also to themselves.

We contribute to the existing literature by adding new empirical evidence from a unique group of teaching-related workers in China, which is expected to enrich international perspectives on teacher leaders in the context of top-down system-wide instructional reform. This article also deepens our understanding of how internal and external work requirements interact with work engagement. Based on a set of mature psychiatric instruments (UWES) measuring occupational commitment, we found preliminary evidence that individuals’ work engagement is affected by the conflicts between a TRO’s working roles as a teacher development facilitator and a coordinator to make sure all top-down policies are implemented well. This study bridges the macro-level trend of education reform with microlevel role of internalization of individuals. From this research, we can see the systemic instructional improvement depends not only on strategic planning, performance alignment, and capacity building, but also on the cross-boundary teacher leaders’ role perception and work engagement.

Although this research updates our understanding of role perception and work engagement among TROs whose job commitment is yet to be studied, many questions remain unanswered. First, a longitudinal data set is desirable to fully control the unobservables affecting both work role perceptions and engagement. Second, future research must focus on TROs’ organizational learning and professional development. There is no more detailed evidence to explain why TROs who worked for less than 17 years appear to show worse work engagement. The inquiry into their career stage cycles and learning track may be helpful in understanding the phenomenon. Third, more qualitative research is needed to elaborate how TROs negotiated policy implementation and teacher development in the Chinese context, especially how their work engagement mediates the effect of policy initiatives on teacher efficacy.

**Contributorship**

Wei Shen was responsible for research design, literature review, and data collection while Hongmei Ma was responsible for data analysis and writing the part of research findings. Both of them contributed to finalizing the paper and responding to reviewers’ comments.

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## Appendix

### Table A1. Work engagement: Indicators and dimensions.

| UWES-9 items | Indicators                                                                 | VIGOR | DEDICATION | ABSORPTION |
|--------------|----------------------------------------------------------------------------|-------|------------|------------|
| V2           | At my job, I feel strong and vigorous                                      | .9155 |            |            |
| V3           | When I get up in the morning, I feel like going to work                    | .8675 |            |            |
| V1           | At my work, I feel bursting with energy                                    | .8424 |            |            |
| D3           | My job inspires me                                                          |       | .9003      |            |
| D2           | I am enthusiastic about my job                                              |       | .8806      |            |
| D4           | I am proud of the work that I do                                            |       | .8806      |            |
| A4           | I am immersed in my work                                                    |       | .9380      |            |
| A5           | I get carried away when I’m working                                         |       | .8947      |            |
| A3           | I feel happy when I am working intensely                                    |       | .8899      |            |

Variance explained (%)  
76.6808  78.7129  82.4090 
Cronbach’s $\alpha$  
.8476  .8636  .8931

Note. UWES = Utrecht Work Engagement Scale.

### Table A2. TRO’s work role requirements: Indicators and dimensions.

| Working orientation | Indicators                                                                 | RP    | RT    |
|---------------------|-----------------------------------------------------------------------------|-------|-------|
| C13                 | Organize teaching evaluation and competition                                | .7769 |       |
| C14                 | Conduct instructional supervision                                           | .7492 |       |
| C15                 | Give advice to LEA’s decision on educational issues                        | .6850 |       |
| C11                 | Evaluate and promote excellent teaching-research cases                      | .6510 |       |
| C12                 | Assist LEA in activities related to teaching quality.                       | .6443 |       |
| T4                  | Lead teacher in research and discussion on teaching practices              | .8211 |       |
| T5                  | Lead teacher in research and discussion on specified teaching topics       | .8055 |       |
| T8                  | Organize teachers to work collaboratively and communicate with each other   | .8041 |       |
| T7                  | Provide professional support to individual teachers                        | .7795 |       |
| T9                  | Conduct training for teachers to practice basic teaching skills            | .7494 |       |
| T10                 | Engage in team building with subject teacher                               | .7442 |       |
| T2                  | Conduct research on pedagogy and subject content                           | .7319 |       |
| T3                  | Help school improve their teaching-research plan                           | .6462 |       |

Variance explained (%)  
49.4614  58.0749 
Cronbach’s $\alpha$  
.7401  .8940

Note. LEA = Local Education Authority; TRO = teaching-research officer.