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How Can the Professional Community Influence Teachers' Work Engagement? The Mediating Role of Teacher Self-Efficacy

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Abstract: The sustainable development of education requires the continuous engagement of teachers, and the professional community has long been considered an important facilitator of teacher engagement. However, teachers' professional community has often been analyzed as a unified construct, and thus the question of how teacher engagement is enhanced remains unanswered. Based on the conservation of resources theory, in this study, we investigated how teacher work engagement was affected by the crossover of job resources between the professional community (including shared norms, collective responsibility, collaboration, and reflective dialogue) and teachers (self-efficacy). The sample included 1123 primary and secondary school teachers in China. Covariance structural modeling was used to test our hypotheses. Shared norms and collective responsibility played a fundamental role and positively predicted collaboration, which in turn enhanced reflective dialogue. Teacher self-efficacy partially mediated the effect of the four dimensions of the professional community on teachers' work engagement. The findings of this study indicate that the professional community offers valuable organizational and social resources that can be used by teachers to enhance their personal resources, such as self-efficacy, and thus become more engaged in their work. Shared norms and collective responsibility serve to shape a growth-oriented school culture that stimulates teachers' willingness to collaborate and improves their confidence in teaching, and thus should be stressed by school leaders when introducing changes.

Keywords: work engagement; professional community; self-efficacy; conservation of resources theory

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1. Introduction

The sustainable development of education requires the continuous engagement of teachers in their work, that is, teachers should have a positive work-related attitude characterized by vigor, dedication, and absorption [1]. When teachers are deeply engaged, they are more committed to and satisfied with their job, are less likely to quit, and perform better [2–5]. Therefore, the importance of facilitating teachers' work engagement has been increasingly recognized in relation to educational reforms. Previous studies have consistently shown that job resources are significantly related to work engagement [1]. Individuals with significant resources are less vulnerable to resource overconsumption, and thus are more resilient and engaged in their work [6,7]. Furthermore, to enhance teachers' work engagement, organizational resources should be put to use in a systematic and collective manner, that is, via a professional community featuring trust, sharing, and collegiality [8,9]. In Chinese schools, teachers' professional community is involved in a variety of collaborative practices. For example, the teaching and research system is a typical organizational process whereby teachers collaboratively develop their curriculum and improve their teaching methods. Although the professional community has long been considered a useful means of facilitating teachers' work engagement, some important

questions about the professional community–teachers' work engagement relationship remain unanswered.

First, teachers' professional community has often been viewed as a unified construct when analyzing its relationship with teacher outcomes [10,11]. However, the professional community is a sophisticated group containing multiple dimensions, including shared norms, collective responsibilities, collaboration, and reflective dialogue [11–13]. Shared norms and a sense of collective responsibility shape the school culture, which is devoted to the ongoing development of students, and thus provide the foundation for effective collaboration and reflective dialogue among community members [14]. Furthermore, collaboration and reflective dialogue offer a much more direct means of enhancing teachers' professional capacities and keeping them continuously engaged in teaching [15]. Therefore, more studies are needed to investigate the effect of the four dimensions of the professional community, and the relationships among these dimensions, on teachers' work engagement.

Second, the mechanism through which teachers' work engagement is facilitated by their professional community remains unclear. Studies on industry and organizations have used conservation of resources (COR) theory to depict how employee outcomes are influenced by various organizational and interpersonal factors [6]. Specifically, COR theory posits that supportive organizational resources can transfer to individuals, thereby increasing their personal resources and enhancing their work engagement [7]. Self-efficacy—the "belief in one's capabilities to organize and execute the courses of action required to produce given attainments" ([16], p. 3)—is considered the primary personal resource that functions as the conduit through which organizational resources are transferred [7]. Although numerous studies have been conducted in the fields of industry and organizations, few have focused on the field of education.

In this study, we explore the relationship between the professional community and teachers' work engagement, and the role that teachers' self-efficacy plays in this relationship. Specifically, we aim to answer the following questions: (1) How do the various dimensions of the professional community (i.e., shared norms, collective responsibility, reflective dialogue, and collaboration) influence teachers' work engagement? (2) Does teacher self-efficacy mediate the relationships among the various dimensions of the professional community and teachers' work engagement? The findings of this study contribute to the research on this issue in two ways. First, we extend our understanding of the professional community by providing deeper insights into the unique contribution of each dimension and the relationships among these dimensions in facilitating teachers' work engagement. Second, using COR theory, we contribute to the literature on teachers' work engagement by examining the role of teachers' self-efficacy in mediating the relationship between the four dimensions of the professional community and teachers' work engagement. Given that the professional community and teachers' self-efficacy are different forms of resources, the results of this study reveal the mechanism through which teachers' work engagement is enhanced by a supportive school environment.

2. Theoretical Framework

2.1. Work Engagement and COR Theory: The Professional Community and Teacher Self-Efficacy as Job Resources

Although work engagement has been studied for decades in the fields of positive psychology and organizational management, there is still no clear consensus on its definition [17]. Some researchers have suggested that engagement should be conceptualized and operationalized as a construct completely opposite to burnout [18,19]. However, Schaufeli et al. [20] argued that even though engagement is often negatively related to burnout and other undesirable employee outcomes, it should be viewed as an independent concept reflecting an individual's levels of vigor, dedication, and absorption. Specifically, vigor involves a high level of affective energy, mental resilience, and willingness to make an effort in relation to one's work; dedication refers to one's enthusiasm toward and feeling of

significance and pride regarding one's work; and absorption involves deep concentration on one's work [20].

To illustrate how individuals' work engagement is facilitated in organizations, COR theory views organizational support as a valuable job resource and proposes a resource-transfer process through which individuals become more engaged [21]. Job resources are the physical, psychological, social, or organizational aspects of the job that not only potentially reduce the negative effects of job demands and help employees to achieve their work goals, but also stimulate personal growth, learning and development, and work engagement [22,23]. The core of COR theory lies in the assumption that people share the natural desire to obtain, protect, and develop resources that are centrally valued in their behavioral intentions [7]. Jobs consume a large number of resources and can exhaust people's energy. In particular, teaching is characterized as emotional labor, and good teaching requires positive emotions [24]. Teachers' continuous engagement requires them to maintain a stable mood and a high level of enthusiasm over long periods of time. In schools, the professional community is the key source of supportive resources that buffer teachers' sense of resource depletion through their work [25–27].

A professional community is an inclusive and mutually supportive group of educational practitioners with shared norms, and committed, reflective, collaborative, growth-oriented, ongoing approaches to improve their professionalism and student learning through investigating and learning more about their practice [9,11]. Although various studies have used different descriptions, some common features of professional communities have been identified, including shared norms and values, a collective focus on student learning, collaboration, and reflective dialogue among community members [11–13]. Shared norms focus on student learning, whereas collective responsibility for school operations and improvement provides the organizational structure that governs teachers' behaviors [10] and assists schools in identifying meaningful goals for improvement [28]. Through shared norms and a sense of collective responsibility, teachers effectively internalize the significance of teaching and become much more devoted to and enthusiastic regarding their work. Therefore, both of these features help to create a supportive and progressive school mission, vision, and culture, all of which are key organizational resources [29]. Collaboration and reflective dialogue are also crucial because good teaching is unlikely to be achieved in isolation. Through collaboration, teachers share the teaching techniques, materials, and strategies they find effective; coordinate their lesson content [30]; and therefore have more opportunities to contact and communicate with each other to conduct reflective dialogues. Teachers' reflection on their practice leads to a deeper understanding of the process of instruction. Regular reflective dialogue enables teachers to initiate and continue a process of self-examination of their teaching targets, behaviors, and effectiveness. The friendship, sometimes referred to as camaraderie, that is developed in the workplace has been identified as a crucial factor in enabling people to collaborate to acquire new knowledge and skills and strengthen their sense of professional resilience and self-efficacy [31]. Together, collaboration and reflective dialogue are important social resources because they represent the positive processes that occur in interpersonal relationships, from which teachers are able to develop a coherent understanding of what good teaching is and how it can be realized. Furthermore, the creation of an appropriate context for the sharing of experiences, information, and reflection enables these social resources to be strengthened through shared norms and collective responsibility.

Moreover, COR theory states that individuals' work engagement is more likely to be facilitated through a resource crossover process whereby organizational and social resources are transferred to individuals, thus increasing their personal resources and providing the nutrients necessary to enhance their level of engagement [7]. Crossover is achieved through direct transmission (i.e., via empathy), positive interactions between partners, and a work environment that supports all employees [32]. On the one hand, colleagues' positive state of work can directly affect other people's emotions and behavior [33]. For example, a teacher's high level of affective energy will affect the other members of their community,

motivating them to become more engaged in their work. On the other hand, engagement can be enhanced by the improvement of an individual's personal resources, which enables them to better control their environment [21]. Previous studies have consistently found that self-efficacy is a critical personal resource that is transferred among members of an organization and contributes to the achievement of desired work outcomes [34]. The self-expansion theory [35] states that when involved in a close relationship, individuals often incorporate their partners' resources into their own self-concept and view others' acquisition or loss of resources as if it is happening to themselves [36]. In their process of interaction with others, individuals tend to generate a potential self, which reflects the states of both themselves and others. Individuals are constantly comparing their current self with their potential self, and are often motivated to explore new resources if their potential self shows the possibility of improvement [37]. Therefore, self-efficacy plays an important role in the resource transmission process within both social and organizational contexts, and functions as a mediating mechanism in the organization–individual relationship.

2.2. The Professional Community and Teachers' Work Engagement

There is extensive evidence of a positive relationship between the professional community and desired teacher outcomes. Lin [38] reported that the professional community is an efficient means of providing the environment and conditions necessary for teachers' professional development [38]. Teachers have also reported significant benefits from the extensive support provided by professional communities, such as cooperation and inclusiveness [25–27]. Hadar and Brody [39] found that overcoming isolation is important throughout all stages of teachers' professional careers, and that this is facilitated by participation in the professional community. The professional community provides a means for teachers to extend their capacity to achieve the desired teaching results and voice collective aspirations [39], and has the potential to improve instruction and enhance student achievement [40,41]. Regarding the four dimensions of the professional community, Salamon and Robinson [14] reported that in organizations with high responsibility norms, individuals were more likely to engage in activities that advanced progress toward achieving the organization's goals. One recent study found that individuals' collective sense of conscientiousness was deployed in the service of goal-directed activity and helped them to better manage other job resources [42]. Additionally, teachers in a strong professional community were found to be highly collaborative [28]. This collaboration went beyond mere cooperation and served to create a shared understanding among teachers. The quality of teacher collaboration was related to the shared norms and values of a school—the stronger the professional community, the greater the teachers' collaboration [43]. Finally, Chan et al. [15] confirmed that reflective dialogue had a significant effect on teacher commitment. This reflection led to a deep consideration of teaching ideas and educational values, and further enhanced teachers' work engagement. Therefore, we propose the following hypotheses.

Hypothesis 1a (H1a). *Shared norms and collective responsibility enhance collaboration, reflective dialogue, and teachers' work engagement.*

Hypothesis 1b (H1b). *Collaboration enhances reflective dialogue.*

Hypothesis 1c (H1c). *Reflective dialogue enhances teachers' work engagement.*

2.3. Mediating Role of Teacher Self-Efficacy

Research on COR theory has confirmed the important role self-efficacy plays in facilitating work engagement [1,44–46]. A study in Croatia found that teachers with a high degree of self-efficacy were more likely to show a high level of engagement in their teaching [47], whereas in Spain, teachers' sense of self-efficacy was also found to enhance their work engagement [48]. A positive teacher self-efficacy–work engagement relationship was also observed in China in a recent empirical study [49].

The professional community has been identified as a significant influencing factor on teachers' overall efficacy [50]. Van Daal et al. [51] found that establishing a professional community that stimulates teachers to engage in learning activities was effective in helping them to develop their learning orientation and self-efficacy, and thus enhance their teaching skills. Furthermore, of the four dimensions, shared norms were found to have the strongest relationship with teacher self-efficacy [11], which was also strengthened by reflective dialogue [15]. In an experimental study, Llorens et al. [52] found that task resources affected work engagement via efficacy. Specifically, task resources contributed to students' work engagement, and in turn work engagement increased task resources over time. Both of these relationships were mediated by efficacy. Thus, we propose the following hypothesis.

Hypothesis 2 (H2). *Teacher self-efficacy mediates the relationships among the four dimensions of the professional community (i.e., shared norms, collective responsibility, collaboration, and reflective dialogue) and teachers' work engagement.*

Figure 1 presents a conceptual model.

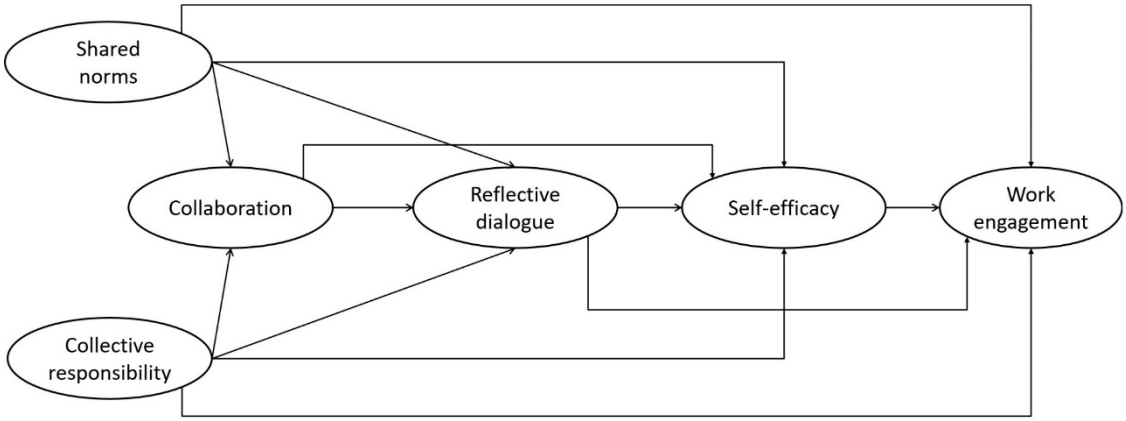

Figure 1. Hypothetical relationships among the study variables.

3. Method

3.1. Participants

We sampled 21 primary and 20 secondary schools in Hebei and Shanxi provinces in China. In total, 1374 questionnaires were distributed to teachers in the selected schools. After deleting responses in which more than 10% of the data were missing, we were left with 1123 responses for analysis, an effective recovery rate of 81.73%. Of the respondents, 914 (81.4%) were female, 157 (14.0%) were male, and 52 (4.6%) did not provide a response. Regarding years of teaching experience, 202 teachers (18%) had 3 years or less of teaching experience, 264 (23.5%) had 4–10 years of teaching experience, 250 (22.3%) had 11–17 years of teaching experience, 255 (22.7%) had 18–25 years of teaching experience, 111 (9.9%) had 26 years or more of teaching experience, and 41 (3.6%) did not provide a response. Regarding educational level, 185 teachers (16.5%) did not have a bachelor's degree, 830 (73.9%) had a bachelor's degree, 39 (3.5%) had a master's degree, and 69 (6.1%) did not provide a response.

3.2. Procedure

Ethics approval was obtained from the Ethics Committee at Beijing Normal University. First, primary and secondary schools from Hebei and Shanxi provinces, which are medium economic development regions in China, were invited to participate. They had already obtained the necessary permissions from their principals and the relevant administrative departments. Teachers in the two regions participated voluntarily. Second, well-trained postgraduate students distributed the questionnaires to the participants and explained

the purpose of the study. Third, under the condition of strict anonymity, the participants completed the survey face to face. The researchers gathered, screened, and analyzed all the responses.

3.3. Measures

Responses were measured using a five-point Likert-type scale ranging from 1 ("Extremely rarely") to 5 ("Extremely often").

3.3.1. The Professional Community

The professional community scale was constructed based on the scales proposed by Bryk et al. [10] and Wahlstrom and Louis [13]. Four subscales comprising 12 items were used (Cronbach's $\alpha = 0.924$). Construct validity was tested and the scale fitted the data well ($\chi^2 = 161.544$; df = 48; $\chi^2/df = 3.366$; GFI = 0.977; AGFI = 0.963; CFI = 0.988; RMSEA = 0.046; SRMR = 0.022). The first subscale measured reflective dialogue (Cronbach's $\alpha = 0.874$; factor loadings ranged from 0.81 to 0.85), for example, "How often have you had conversations with colleagues about classroom management and control?" The second subscale measured collaboration (Cronbach's $\alpha = 0.842$; factor loadings ranged from 0.79 to 0.81), for example, "Teachers design instructional programs together and share coursework". The third subscale measured shared norms (Cronbach's $\alpha = 0.878$; factor loadings ranged from 0.81 to 0.87), for example, "Teachers work together to set appropriate goals and expectations regarding student learning". The fourth subscale measured collective responsibility (Cronbach's $\alpha = 0.893$; factor loadings ranged from 0.84 to 0.88), for example, "Teachers in this school take responsibility for improving the school".

3.3.2. Teachers' Work Engagement

Teachers' work engagement was measured using the scale compiled by Schaufeli et al. [20]. Three subscales comprising 10 items were used (Cronbach's $\alpha = 0.914$). The construct validity was tested and the scale fitted the data well ($\chi^2 = 208.703$; df = 29; $\chi^2/df = 7.197$; GFI = 0.963; AGFI = 0.930; CFI = 0.972; RMSEA = 0.074; SRMR = 0.035). The first subscale on vigor included four items (Cronbach's $\alpha = 0.847$; factor loadings ranged from 0.70 to 0.83), for example, "I am full of energy when I work". The second subscale included three items on dedication (Cronbach's $\alpha = 0.831$; factor loadings ranged from 0.73 to 0.85), for example, "I find teaching very motivating". The third subscale included three items on absorption (Cronbach's $\alpha = 0.775$; factor loadings ranged from 0.56 to 0.84), for example, "I often enter a self-forgetful state of bliss when I'm working".

3.3.3. Teacher Self-Efficacy

Teacher self-efficacy was assessed using an adapted version of the teacher self-efficacy scale proposed by Yu et al. [53]. The scale consisted of nine items (Cronbach's $\alpha = 0.895$; factor loadings ranged from 0.55 to 0.80), for example, "If the school lets me teach a new course, I believe I can do it". The construct validity was tested and the scale fitted the data well ($\chi^2 = 124.044$; df = 27; $\chi^2/df = 4.594$; GFI = 0.975; AGFI = 0.959; CFI = 0.979; RMSEA = 0.057; SRMR = 0.027).

3.4. Data Analysis

SPSS 22.0 was used to calculate the descriptive statistics and correlations among the variables. AMOS 21.0 was used to conduct structural equation modelling (SEM).

Regarding the mediating effect, in addition to SEM, some researchers have suggested using bootstrapping analysis to test the significance of the mediated effect [54]. Bootstrapping analysis has been widely used in psychology and organizational behavior. Thus, we tested the indirect effects using a bootstrapping approach.

4. Results

4.1. Discriminant Validity and Common Method Variance Analysis

In evaluating the discriminant validity of the confirmatory factor analysis (CFA) model, the average variance extracted (AVE) index value of the scale should be above 0.5 so that the factor constructs have good convergence validity, and the AVE value of the two factors should be higher than the square of the correlation coefficient (r^2) between the two factors [55].

It can be seen from Table 1 that the AVE values for all factors are greater than 0.5 (range 0.501–0.737) and the AVE value of any two factor constructs is higher than the r^2 between them. Therefore, CFA models of the professional community subscales, teacher self-efficacy subscales, and work engagement scale have good discriminant validity.

Table 1. Comparison of differences between factors' AVE and r^2.

Factors	RD	C	CR	SN	TE	WE
RD	0.699 (AVE)	0.503 (r^2)	0.329 (r^2)	0.396 (r^2)	0.189 (r^2)	0.254 (r^2)
C	0.709 **	0.640 (AVE)	0.471 (r^2)	0.432 (r^2)	0.150 (r^2)	0.224 (r^2)
CR	0.574 **	0.686 **	0.737 (AVE)	0.462 (r^2)	0.125 (r^2)	0.236 (r^2)
SN	0.629 **	0.657 **	0.680 **	0.708 (AVE)	0.161 (r^2)	0.268 (r^2)
TE	0.435 **	0.387 **	0.354 **	0.401 **	0.501 (AVE)	0.309 (r^2)
WE	0.504 **	0.473 **	0.486 **	0.518 **	0.556 **	0.525 (AVE)

Notes: RD: reflective dialogue; C: collaboration; CR: collective responsibility; SN: shared norms; TE: teacher self-efficacy; WE: work engagement. ** $p < 0.01$. The diagonal is the average variance extracted (AVE) of the factor constructs, the lower triangle is the correlation coefficient between factors, and the upper triangle is the square of the correlation coefficient (r^2) between the factors.

Because all of the data were collected from the same group of teachers at the same time, common method variance (CMV) might have affected the results [56]. Table 2 shows the fit indices of the original model and the new model. To test for CMV, a latent CMV factor was included in the new model. It can be seen from Table 2 that the new model showed a small increase ($CFI_{original} = 0.946$, $CFI_{new} = 0.967$; $\Delta CFI = 0.021$), which was below the 0.05 threshold [57]. Therefore, there was no significant evidence of CMV.

Table 2. Results of the common method variance (CMV) test.

Models	χ^2	df	χ^2/df	CFI	GFI	AGFI	RMSEA	SRMR
$M_{original}$	1588.491	419	3.791	0.946	0.911	0.894	0.050	0.033
M_{new}	1096.302	388	2.826	0.967	0.940	0.924	0.040	0.028

4.2. Descriptive Statistics and Correlations among Variables

Table 3 presents the descriptive statistics and correlations among all of the study variables. The means of all four dimensions of the professional community were approximately 4, and the correlation coefficients among all the variables were 0.354–0.709 ($p < 0.01$).

Table 3. Descriptive statistics and correlation matrix (N = 1123).

	M	SD	1	2	3	4	5	6
1. RD	4.020	0.663	1					
2. C	3.991	0.716	0.709 **	1				
3. CR	3.988	0.739	0.574 **	0.686 **	1			
4. SN	4.025	0.690	0.629 **	0.657 **	0.680 **	1		
5. TE	3.957	0.627	0.435 **	0.387 **	0.354 **	0.401 **	1	
6. WE	3.960	0.652	0.504 **	0.473 **	0.486 **	0.518 **	0.556 **	1

Notes: RD: reflective dialogue; C: collaboration; CR: collective responsibility; SN: shared norms; TE: teacher self-efficacy; WE: work engagement; ** $p < 0.01$.

4.3. The Relationships among the Four Dimensions of the Professional Community and Teachers' Work Engagement

First, we explored the relationships among the four professional community subscales and teachers' work engagement while excluding the self-efficacy variable. SEM was used to test the structural relationships. Path analysis indicated that the path from collective responsibility to reflective dialogue was not significant ($\beta = -0.122$, $p = 0.015 > 0.001$). Therefore, we deleted that path from the model to obtain Model 1, in which all of the path coefficients were significant (see Figure 2). The fit indices of Model 1 were $\chi^2 = 750.772$, df = 198, $\chi^2/df = 3.792$, GFI = 0.942, CFI = 0.966, SRMR = 0.0356, and RMSEA = 0.050 ($p < 0.001$). It can be seen from Figure 2 that the relationships among the professional community subscales were not in parallel, with shared norms and collective responsibility playing an antecedent role. Those two factors positively affected collaboration, which in turn had a positive influence on reflective dialogue. In addition, shared norms had a positive effect on reflective dialogue. Therefore, H1a is partially supported, whereas H1b and H1c are fully supported.

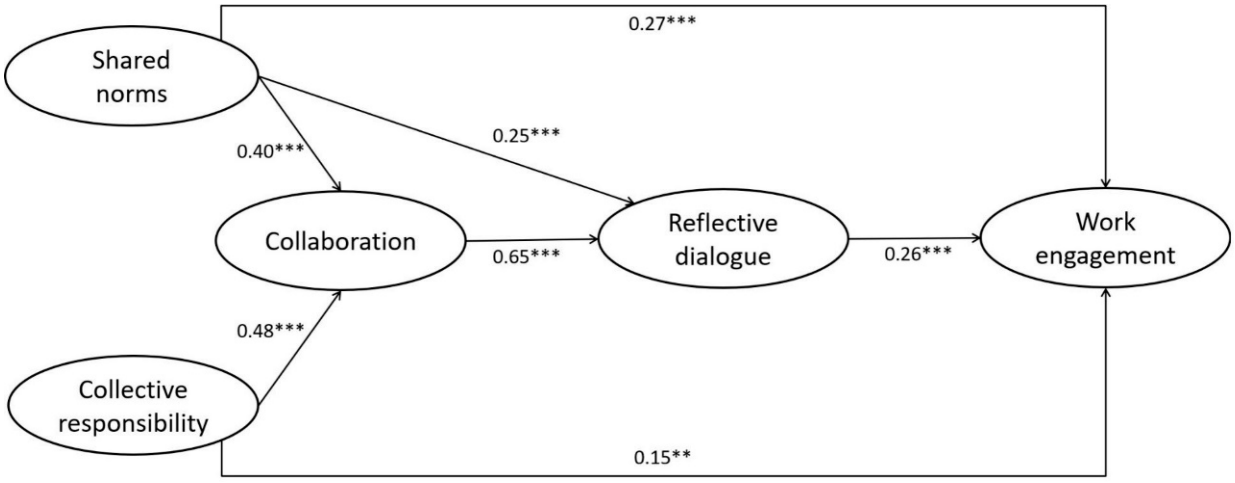

Figure 2. The relationships among the four dimensions of the professional community and teachers' work engagement (Model 1); ** $p < 0.01$, *** $p < 0.001$.

4.4. Mediating Effect of Teacher Self-Efficacy

We included the teacher self-efficacy in Model 2 to obtain a partial mediation model including both indirect paths and direct paths. We examined the significance of the path coefficients using SEM and found that the path from teacher collaboration to self-efficacy was not significant ($\beta = -0.005$, $p = 0.949 > 0.05$), nor was the path from collective responsibility to self-efficacy ($\beta = 0.038$, $p = 0.525 > 0.05$). Thus, we deleted those insignificant paths to obtain Model 2 (see Figure 3). The fit indexes were $\chi^2 = 1258.881$, df = 420, $\chi^2/df = 2.997$, GFI = 0.931, CFI = 0.961, SRMR = 0.0341, and RMSEA = 0.042 ($p < 0.001$). These results suggest that teacher self-efficacy plays a partial mediating role in the relationship between the professional community and teachers' work engagement.

Next, we examined the patterns in the indirect relationships revealed in Model 2. Using a sample of 1000, we tested the mediating role using bootstrapping. MacKinnon et al. [58] found that bootstrapping yields the most accurate confidence intervals (CIs) for indirect effects. We used the bias-corrected method to test the indirect effect of each antecedent (shared norms and collective responsibility) on the outcome (teachers' work engagement) via each mediator (collaboration, reflective dialogue, and self-efficacy) and obtained both 95% percentile bootstrap CIs and 95% bias-corrected bootstrap CIs. Table 4 presents the bootstrap CIs for each indirect effect between the antecedents and outcomes via each mediator and the total indirect effect between each antecedent and teachers' work

engagement. These results suggest that teacher self-efficacy plays a mediating role in the relationship between the professional community and teachers' work engagement.

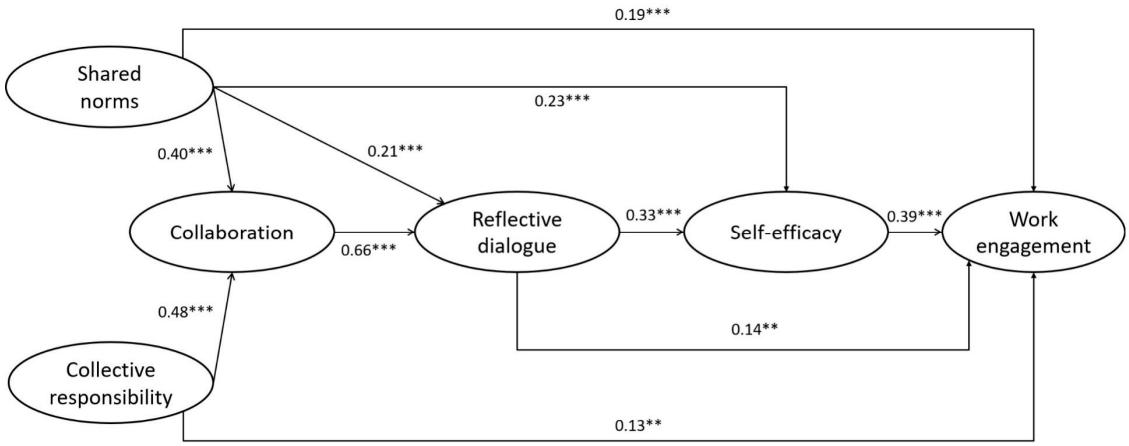

Figure 3. Model integrating teacher self-efficacy (Model 2); ** $p < 0.01$, *** $p < 0.001$.

Table 4. Bootstrapped confidence intervals for the total, direct, and indirect effects.

Total, Direct, and Indirect Effects	β	SE	Z	Bootstrapping BC 95% CI	
				LLCI	ULCI
Total Effects					
SN → WE	0.2767	0.0247	11.202	0.231	0.328
CR → WE	0.2424	0.0315	7.695	0.178	0.298
Direct Effects					
SN → WE	0.2104	0.0300	7.013	0.152	0.269
CR → WE	0.1844	0.0279	6.609	0.130	0.240
Indirect Effects					
SN → C → TE →WE	0.0199	0.0096	2.073	0.003	0.041
SN → C → RD → TE → WE	0.0307	0.0066	4.652	0.020	0.046
SN → RD → TE → WE	0.0258	0.0062	4.161	0.016	0.040
SN → TE → WE	0.0666	0.0147	4.531	0.041	0.097
CR → C → TE → WE	0.0227	0.0116	1.957	0.001	0.046
CR → C → RD → TE → WE	0.0407	0.0081	5.025	0.027	0.059
CR → RD → TE → WE	0.0166	0.0051	3.255	0.008	0.029
CR → TE → WE	0.0412	0.0138	2.986	0.017	0.070

Notes: RD: reflective dialogue; C: collaboration; CR: collective responsibility; SN: shared norms; TE: teacher self-efficacy; WE: work engagement.

The results presented in Table 4 confirm the mediating effects of collaboration, reflective dialogue, and teacher self-efficacy on shared norms, collective responsibility, and teachers' work engagement. Shared norms had a statistically significant direct effect on teachers' work engagement (β = 0.21; standard error (SE) = 0.030; 95% CI = 0.152–0.269; $z = 7.013 > 1.96$), as did collective responsibility (β = 0.18; SE = 0.028; 95% CI = 0.130–0.240; $z = 6.609 > 1.96$). As can be seen from Table 4, no paths related to the mediating effect of teacher self-efficacy had a 95% CI of zero, indicating that teacher self-efficacy had a partial mediating effect. These results provide evidence of the mediating effect of collaboration, reflective dialogue, and teacher self-efficacy.

These findings indicate that teacher self-efficacy does indeed play a partial mediating role in the relationship between the professional community and teachers' work engagement. The standardized path coefficients for the partial mediation model are shown in Figure 3. Shared norms and collective responsibility directly influenced teachers' work engagement (β = 0.19, β = 0.13, respectively), and significantly influenced collaboration (β = 0.40, β = 0.48, respectively). Collaboration had a significant positive effect on reflective

dialogue (β = 0.66), whereas reflective dialogue had a positive effect on teacher self-efficacy (β = 0.33) and work engagement (β = 0.14), and shared norms had a direct effect on teacher self-efficacy (β = 0.23). Therefore, H2 is supported.

5. Discussion

In this study, we explored the relationships among the four dimensions of the professional community (i.e., shared norms, collective responsibility, collaboration, and reflective dialogue), teachers' self-efficacy, and their work engagement. The results showed that the four dimensions of teachers' professional community do not have a parallel effect on engagement. Shared norms and collective responsibility affect teachers' work engagement both directly and indirectly via collaboration, reflective dialogue, and teacher self-efficacy. Collaboration has a positive effect on reflective dialogue, which in turn has a positive effect on teacher self-efficacy. Teacher self-efficacy, which was predicted to act as an important mediating factor, had a partial mediating effect on the professional community–teachers' work engagement relationship.

5.1. Relationships among the Four Dimensions of the Professional Community and Teachers' Work Engagement

The results of this study showed that the four dimensions of the professional community played different roles in facilitating teachers' work engagement. Although previous empirical studies have examined the overall effect of the professional community on teachers [10,11], we found that the four dimensions of the professional community did not operate in parallel, with each dimension making a unique contribution to teachers' work engagement. Wei [59] suggested that the development of a good professional community begins with the establishment of common norms and values, which was confirmed by our quantitative evidence that shared norms and collective responsibility played a fundamental role. This confirms the findings of previous studies that normative factors provide the foundation for a successful professional community [13,43]. COR theory states that developing and maintaining resources provides a realistic way of increasing work engagement and reducing burnout [7]. Shared norms and collective responsibility are important organizational resources that help to create a supportive work environment that nurtures high-quality interpersonal relationships and personal development. Furthermore, the effects of these organizational resources on teachers are achieved through their positive influence on the social resources within the organization. When teachers share and internalize community norms and educational responsibility, they view their fellow community members as proficient role models, resulting in more discussion and collaboration aimed at improving their teaching [11]. In addition, collaboration contributes to their reflective dialogue because it enables them to develop mutual trust and engage in open dialogue regarding their teaching practices [28].

The results of this study are also consistent with the professional capital framework that Hargreaves and Fullan [60] proposed to explain how teachers could use various school resources to aid their teaching practices. Shared norms and collective responsibility are typical examples of the decisional capital that enables teachers to make sound judgments in their teaching. Good teaching involves teachers making appropriate judgments based on the specific educational context and student learning needs. If teachers struggle when making decisions, their enthusiasm for teaching will quickly be exhausted. The creation of a structured group with shared norms and responsibilities enables teachers to feel more relaxed about their work. In addition to decisional capital, social capital is critical because good teaching requires teachers to constantly communicate with their colleagues in an effort to gain a better understanding of their students and their individual learning needs. Social capital refers to how the quantity and quality of interactions and social relationships among people affect their access to knowledge and information, and their senses of expectation, obligation, and trust [60]. Collaboration and reflective dialogue provide valuable opportunities for teachers to learn from each other and increase their

knowledge. Workplace friendship, or camaraderie, as reflected by social capital, is a form of partnership that develops beyond the ordinary collegial relationships that occur following the establishment of formal workplace contacts [61]. Ongoing conversation occurs more often among workplace friends because they are more likely to share common ground. This conversation enhances the common ground, thereby improving communication and cooperation. Thus, decision capital and social capital provide the foundation for quality teaching, and their importance is empirically demonstrated by our findings.

Moreover, culture plays an important role in the professional community–teachers' work engagement relationship. China's collectivist and long-term-oriented culture has created a teaching culture that differs from that in the West. In a study conducted in Shanghai, Zhang and Yuan [62] found that a collectivist culture is more conducive to teacher collaboration. When visiting Chinese schools, Western scholars have found that teaching is viewed as a common collective responsibility, in complete contrast to the Western approach [63]. Influenced by the collectivist culture, education has always been regarded as a collective task whereby it is the responsibility of all teachers to promote students' learning and development. In this cultural context, great importance has been attached to a teaching and research system wherein a variety of collaborative teaching activities have been carried out at the school level. At the core of this system is the teacher-research groups, which are built up based on the subject being taught. Lesson preparation groups and grade groups are widely organized in schools to facilitate teacher collaboration. Teachers routinely work together in these groups and display various types of cooperative behavior, such as public lessons, visiting and evaluating colleagues' classrooms, and collective preparation of lessons. In addition, teaching workshops have been facilitated by experienced teachers with extensive and innovative teaching experience who lead other teachers in teaching and research exploration, thereby increasing cooperation among all teachers. The concept of teachers' professional community, emphasizing sharing and collegiality, has been applied in the abovementioned activities. Collaboration reduces teachers' feelings of isolation and increases their sense of belonging and satisfaction [62]. Thus, under the guidance of shared norms and driven by a sense of collective responsibility, teachers will enjoy greater cooperation and more reflective teaching-based communication, resulting in better performance and enhanced work engagement.

5.2. Mediating Role of Teacher Self-Efficacy

The results of this study show that teacher self-efficacy partially mediated the relationships among the dimensions of the professional community and teachers' work engagement. The mediating effect of teacher self-efficacy has been reported in previous studies on the professional community [13,15]. Looney [11] found that perceptions of a professional community had a positive effect on high school teachers' overall efficacy, similar to our findings. Zheng et al.'s [50] study in China confirmed the positive effect of reflective dialogue on teacher self-efficacy, but found no significant effect of a shared sense of purpose.

Teachers' self-efficacy is a positive personality trait that involves the belief that they have the ability to achieve their goals. The value-added spiraling effect of COR theory suggests that individuals with sufficient resources are less vulnerable to resource loss, and are also better able to obtain resources [7]. Thus, they are better able to resist adverse effects caused by negative events or emotions. Teacher self-efficacy is based on positive psychological resources and helps teachers to obtain more resources, thereby increasing their work engagement.

Based on the results of this study, engaging in in-depth conversations about teaching and learning allows teachers to develop their understanding of the teaching process, thereby enhancing their self-efficacy and work engagement. Teacher self-efficacy can be regarded as the result of the interaction between personal and environmental resources. COR theory emphasizes the behavioral choices made by individuals with respect to internal needs and environmental factors [7,64]. Based on this, teachers' actions have an effect on their

environment, which in turn provides feedback to teachers that ultimately enhances their self-belief.

The generation of self-efficacy is a cognitive process whereby individuals develop beliefs about their ability to perform at a given level of achievement. Self-enhancement theory holds that individuals strive to improve their own sense of worth and self-esteem, and thus they seek positive evaluation or feedback from the outside world. Self-enhancement strategies can be divided into positive acceptance, helpful explanation, and self-affirming reflection [65].

Positive acceptance is a strategy blending cognition and behavior that involves seeking positive feedback from the outside world and using it to your advantage. Shared norms can help individuals to seek out positive beliefs consistent with their own beliefs among colleagues, thereby enhancing their self-efficacy. Self-affirming reflection involves an individual interpreting a threatening situation in an effort to adapt it to positive self-concepts such as competence, kindness, behavioral coherence, and sense of control, which is a positive cognitive strategy. Reflective dialogue includes self-affirming reflection, which is likely to have a significant direct effect on self-efficacy.

Hargreaves and Fullan's [60] theoretical framework viewed self-efficacy as a crucial form of human capital that directly determines teachers' teaching practice. As a reflection of one's knowledge and skills, this human capital is less likely to be promoted in isolation and more likely to be enhanced by collective efforts. Collaborative activities provide opportunities and places for teachers to engage in reflective dialogue, and collective responsibility provides a source of belief and strength that drives reflection. These do not directly encourage individuals to seek positive evaluation and feedback from the outside world, and thus their direct effect on self-efficacy is not significant. However, obtaining a sense of accomplishment in collaboration with others is an important factor affecting self-efficacy. The process by which the sense of accomplishment obtained in collaboration affects self-efficacy should be further analyzed in future research.

5.3. Practical Implications

The professional community not only provides a forum for teacher cooperation, but also offers a path for in-service teachers' professional development. The results of this study show that the professional community can provide support for teachers, both emotional and in terms of resources, and provide a platform for practice, cooperation, and reflection as part of teachers' professional development, enabling teachers to gain confidence in their teaching. With greater confidence in their own abilities, teachers are able to make better contributions through their work, resulting in enhanced work engagement. The formation of a professional community is not a spontaneous process, and requires appropriate motivation, goals, and facilitators [59]. We offer three suggestions regarding the influence of the four dimensions of the professional community on teachers' work engagement.

First, it is worth establishing shared norms as a long-term goal in the formation of a professional community, and it is necessary to establish a common vision and goals, thereby building positive interpersonal relationships and mutual trust among all teachers. The findings of this study indicate that shared norms are the driving force behind the development of a professional community and have both direct and indirect effects on teachers' self-efficacy and work engagement. Shared norms and values refer to teachers' shared beliefs in relation to teaching and learning [11]. These beliefs determine teachers' behavior and decision-making. Sergiovanni [66] has noted that the binding of common goals, shared values, and conceptualizations of being and doing are important for a community. Shared norms and values create a sense of belonging and a common identity, thereby encouraging teachers to work closely together in pursuit of common goals and visions.

Second, school leaders should place more emphasis on the participation of teachers in school management. Opportunities for teachers to influence the school's activities and policies reflect the characteristics of a strong professional community [8]. Teacher participation enhances the sense of collective responsibility and guides the common development of teachers and their community, providing a basis for increased teacher cooperation and work

engagement. In addition, teacher participation in management is conducive to developing a democratic atmosphere in the school, which has been identified as a necessary element in the construction of a strong professional community [66].

Third, as the foundation of a professional community, collaborative activities should attract more attention in relation to team building and developing a cooperative atmosphere. Although Chinese schools have undertaken extensive collaboration at various levels, as described above, the sustainability and effectiveness of these collaborative activities require further examination. If the content and mode of cooperative activities fail to fully meet teachers' professional needs or lack adjustment and updating, it is easy for collaboration to become a mere formality, limiting the opportunity for reflective communication and weakening teachers' work engagement. Schools should attract teachers who are able to take the initiative, which they can then draw on to improve both their own behavior and their surroundings. Good teachers can then guide their colleagues by conducting activities within the community that encourage enthusiasm and cooperation, as well as facilitating an atmosphere of reflective dialogue and building strong interpersonal relationships.

The results of this study contribute to the literature on teacher engagement and professional communities by analyzing the Chinese context and confirm our previous understanding that building a professional community is a time-demanding process. By cultivating shared norms and collective responsibility to provide a fundamental framework and enhancing the support system involving cooperation and reflective dialogue, professional communities improve teachers' professional competence and confidence, thereby enhancing their work engagement.

6. Limitations and Suggestions for Future Research

This study has some limitations. First, the study was conducted in Hebei and Shanxi provinces in China, which are medium economic development regions and significantly influenced by collectivist cultural values [67]. Hence, the results might only be applicable to schools in regions with similar levels of development and cultural backgrounds. Future studies should focus on different regions in China, thereby enabling comparisons between various regions. Cross-cultural studies can also increase our understanding of how the professional community enhances teachers' work engagement by examining whether cultural differences exist in the facilitation process.

Second, in this study, self-reported questionnaire responses and cross-sectional statistical data were used to measure and analyze the relationships among various dimensions of the professional community, teacher self-efficacy, and teachers' work engagement. Although self-reporting is a convenient source of data, respondents tend to rate themselves with higher scores on the positive outcomes. To overcome discrepancies between teachers' aspirations and their actual day-to-day practices, objective measurement, a scale rated by others, or a case study of a specific school should be used to extend this quantitative research. Moreover, the cross-sectional data we used did not allow us to draw any causal conclusions. Thus, it is important to either conduct a longitudinal study or use experimental designs to obtain a more concrete relationship among the professional community, teacher self-efficacy, and their work engagement.

Third, work engagement is a complicated construct that includes multiple dimensions. In this study, we investigated how teachers' work engagement as an overall construct was facilitated by the professional community. However, the three dimensions of engagement, that is, vigor, dedication, and absorption, might reflect individuals' physical, emotional, and cognitive connection, respectively, to their work [68], and each dimension might be influenced by different factors [69]. For example, vigor can be influenced by rewards and punishment, dedication can be influenced by individuals' open and transparent interactions with leaders and understanding of the meaningfulness of their work, and absorption can be influenced by individuals' desire to achieve and need for autonomy [70]. Therefore, to obtain a clearer understanding of work engagement, future studies should explore whether and to what degree the three dimensions of engagement are influenced by different factors.

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