THE INFLUENCE OF TEACHERS' EMPOWERING LEADERSHIP AND TEAM TRUST ON TEAM EFFICACY IN PRIMARY AND SECONDARY SCHOOLS IN QINGDAO, SHANDONG, CHINA

Shutong NI[1] and Bangon KHANCHAN[1]
1 Faculty of International Programs, Thongsook College, Thailand;
shutong@thongsook.college (S. N.); bangon@thongsook.college (B. K.)

ABSTRACT
The objectives of this research were (1) to examine the influence of empowering leadership on team efficacy in primary and secondary schools in Qingdao, Shandong, China, and (2) to investigate the influence of team trust on team efficacy in the same setting. The population was full-time teachers in primary and secondary schools in Qingdao, with an estimated planning population of 40,000. Because institutional permission was required to access schools, convenience sampling, a non-probability technique, was employed, and 450 questionnaires were distributed across participating schools; eligible teachers in each participating school were invited. As this was an exploratory, non-probabilistic investigation, the findings pertain to the relationships observed in the obtained sample rather than to population estimates for all teachers in Qingdao. The research instrument was a questionnaire of 43 items, comprising 9 demographic items and 34 five-point Likert items adapted from established scales measuring empowering leadership, team trust, and teachers' team efficacy. Content validity was examined by three experts through the Index of Item-Objective Congruence, and reliability was examined through Cronbach's alpha in a pilot test with 30 teachers. The statistics used for data analysis were frequency, percentage, mean, standard deviation, Pearson product-moment correlation, and multiple regression analysis.The research results showed that 412 valid questionnaires were obtained and analyzed, and that teachers rated all three variables at the high level: teachers' empowering leadership ($M = 3.93$, $SD = 0.49$), team trust ($M = 3.92$, $SD = 0.45$), and teachers' team efficacy ($M = 3.88$, $SD = 0.45$). Both independent variables correlated positively and significantly with teachers' team efficacy, and the regression model showed that teachers' empowering leadership and team trust together explained 49.5% of the variance in teachers' team efficacy ($R^2 = .495$, adjusted $R^2 = .492$), $F(2, 409) = 200.055$, $p < .001$. Teachers' empowering leadership exerted the greater influence ($\beta = .557$, $p < .001$) and team trust the lesser ($\beta = .232$, $p < .001$), so both hypotheses were supported. The study suggests that schools in Qingdao should work first on the leadership behaviors exercised inside teaching research and grade teams, in particular the expression of confidence in the team's capability, and should build trust among colleagues through shared professional work rather than through social activity.

Keywords: Empowering Leadership, Team Trust, Teachers' Team Efficacy, Primary and Secondary Schools, Qingdao, Shandong, China

CITATION INFORMATION: Ni, S., & Khanchan, B. (2026). The Influence of Teachers' Empowering Leadership and Team Trust on Team Efficacy in Primary and Secondary Schools in Qingdao, Shandong, China. *Procedia of Multidisciplinary Research, 4*(11), 30.

INTRODUCTION

China is home to one of the world's biggest school systems. According to official 2023 data from the Ministry of Education of the People's Republic of China (2024), 12.95 million full-time teachers are employed in 211,200 primary and secondary schools. At such a scale, educational quality is realized not by individual teachers in isolation but by how effectively they can collectively plan, teach, assess, and problem-solve; consequently, research attention has moved towards the collective nature of school employees over the individual (Sahli Lozano et al., 2025; Shand & Goddard, 2025).

Schools in Qingdao are typical of those throughout China in that they have established organizational units that make this inquiry particularly feasible. These units include teaching research teams, lesson preparation teams, and grade teams. Meanwhile, activities such as collective lesson planning, peer observation, open lessons, and teaching research are regularly scheduled rather than optional practices. These teams have designated heads, who are formally assigned the middle-leadership role of leading curricular work (Shan & Chen, 2022). However, just because teachers have been assigned to work together does not mean they feel confident in their ability to do so. They may attend the same meetings every week for years and still hold private doubts about the team's capabilities (Zhang, 2023). This phenomenon of assigned collaboration versus actual collaborative professionalism has also been documented internationally (Olmo-Extremera et al., 2024; Severiens et al., 2025).

This belief, or lack of it, constitutes teachers' team efficacy. According to Bandura (1997), collective efficacy refers to 'the collective belief of a social system's capabilities to organize and execute the courses of action required to attain given levels of attainment.' The construct has been researched extensively in educational settings. In a meta-analysis of 49 studies encompassing 32,053 teachers, Sahli Lozano et al. (2025) found collective teacher efficacy positively related to teacher wellbeing, job satisfaction, and engagement, and negatively related to stress and burnout. Moreover, researchers have investigated the mechanism through which collective efficacy mediates the relationship between organizational leadership and structural factors and employee and student outcomes (Liu & Yin, 2024; Meyer et al., 2025; Nassir & Benoliel, 2026).

Recent changes in education policy make the study of team efficacy particularly important. The 2021 Double Reduction policy mandates schools to cut down homework and extracurricular tutoring while enhancing the quality of classroom instruction and offering students extracurricular activities during non-school hours (General Office of the CPC Central Committee & General Office of the State Council, 2021). All of these responsibilities require coordination among multiple teachers. For instance, the amount of homework assigned by each teacher to a particular class must be coordinated to avoid overwhelming students, and teachers must collaborate to design and deliver non-academic activities. To improve instructional quality, teachers must actively participate in teaching research within the context of their teaching research teams. It is no surprise that these demands can cause stress and burnout. Zhong et al. (2025) found that 66.6% of 3,199 Chinese primary school teachers experienced burnout, and Lu et al. (2025) reported that teacher engagement under the Double Reduction policy depended on teachers' job crafting and perceived organizational support.

Among the various possible influences, empowering leadership appears to be a strong contender. Unlike traditional leadership, empowering leadership emphasizes making work meaningful, involving others in decision-making, demonstrating confidence in others' abilities, and giving them appropriate autonomy (Ahearne et al., 2005). These practices have been related to teacher self-efficacy, affective commitment, agency, and proactivity in recent school studies (Celik et al., 2025; Dağdeviren Ertaş et al., 2025; Kalkan et al., 2026; Özdemir et al., 2024). The nearest equivalent evidence comes from a study of 926 teachers in 73 schools that found empowering leadership influencing collective teacher innovativeness through collective

teacher efficacy (Kavgaci et al., 2026). A second alternative is team trust. McAllister (1995) distinguished cognition-based trust, based on competence and reliability, from affect-based trust, based on care and emotional relationship. A meta-analysis of 112 studies comprising 7,763 teams showed that intrateam trust positively predicted team performance and that the relationship remained significant after controlling for trust in the leader (De Jong et al., 2016). In schools, the same relationship has been shown, although horizontal and vertical trust are distinct (Bellibaş et al., 2025; Choong & Ng, 2024).

The specific research gap lies in the lack of an empirical test of empowering leadership and team trust on teachers' team efficacy among primary and secondary school teachers in Qingdao, Shandong. While existing studies focus on principals or investigate individual teacher self-efficacy, whole-school collective teacher efficacy, or other countries' contexts, no study has tested the two predictors together at the level of teachers' own teaching research or grade team. This study aims to fill that gap. Two research questions were addressed: (1) How does empowering leadership influence team efficacy? and (2) How does team trust influence team efficacy? The research objectives were to examine the influence of empowering leadership on team efficacy and to investigate the influence of team trust on team efficacy in primary and secondary schools in Qingdao, Shandong, China.

The scope of the study is as follows. The target population comprises full-time teachers in primary and secondary schools in Qingdao, with an estimated planning population of 40,000. The independent variables are empowering leadership and team trust, and the dependent variable is teachers' team efficacy. Empowering leadership includes the dimensions of enhancing meaningfulness, fostering participation, expressing confidence, and providing autonomy (Ahearne et al., 2005). Team trust consists of cognition-based trust and affect-based trust (McAllister, 1995). Teachers' team efficacy consists of efficacy for instructional strategies and efficacy for student discipline (Tschannen-Moran & Barr, 2004). Social Cognitive Theory provides the theoretical underpinning (Bandura, 1997), and efficacy beliefs are constructed via mastery experience, vicarious experience, social persuasion, and affective states.

LITERATURE REVIEWS

Concepts and Theories Related to Empowering Leadership

Empowering leadership was born from dissatisfaction with an outmoded conception of leadership in an era of change. Conger and Kanungo (1988) traced the roots of empowerment to the elimination of factors that lead to feelings of powerlessness, defining empowerment as an enabler rather than a personal characteristic. Arnold et al. (2000) provided the first operational terms, identifying team leaders' empowerment practices of coaching, sharing information, engaging in participative decision-making, and exhibiting consideration. Ahearne et al. (2005) refined these concepts and identified four observable practices adopted in this study: increasing the meaningfulness of work, fostering participation in decision-making, communicating an expectation for excellence, and removing bureaucracy. Multiple revisions have occurred in the operationalization of empowerment; however, Amundsen and Martinsen (2014) observed that existing measures fail to distinguish between power-sharing and supportive leadership, an observation echoed in recent review articles (Celik et al., 2025).

The four behaviors are related but distinct, and each one falls short in different ways. Enhancing meaningfulness makes the rationale for team-based work clear, so that co-teaching lesson plans becomes a commitment to teaching quality rather than a rule to be complied with. Fostering participation grants teachers influence over decisions rather than mere awareness of them. Expressing confidence provides a trustworthy appraisal of ability. Providing autonomy reduces bureaucratic obstacles while maintaining responsibility. Celik et al. (2025) note that many studies combine these four dimensions into one overall score, thereby obscuring the details a school leader would need to know. Measurement in this study uses the 12-item scale developed

by Ahearne et al. (2005), consisting of three items per dimension, modified for referent and occupation. Empowering leadership is thus conceptualized here as a set of tangible leader behaviors that teachers can identify in their everyday team activities, and, according to Social Cognitive Theory, such behaviors enable the development of team efficacy because expressing confidence provides social persuasion, while participation and autonomy create opportunities for mastery experience (Bandura, 1997; Kavgaci et al., 2026).

Empirical evidence links empowering leadership to collective outcomes. Kavgaci et al. (2026), surveying 926 teachers from 73 schools, found empowering leadership influencing collective teacher innovativeness via collective teacher efficacy, a role also identified by other recent studies in schools (Cansoy et al., 2022; Meyer et al., 2022). Kalkan et al. (2026) described the path from empowering leadership through psychological empowerment and self-efficacy to teacher proactivity. Empowerment is, however, not a free good; it is something that must be given, and doing so effectively requires resources. When decision rights come with no time, no information, and no support, teachers perceive them as load rather than latitude. Dennerlein and Kirkman (2022) show that empowerment under hindrance stressors can lead to moral disengagement and unethical pro-organizational behavior, and Yam et al. (2022) describe how empowering leadership leads to deviance via psychological entitlement. Under the Double Reduction policy, the Chinese context exemplifies such a situation, so the boundary conditions are not theoretical.

Concepts and Theories Related to Team Trust

Empowering leadership describes the flow of resources from the team leader downwards. It does not describe how team members relate to one another; a team leader may delegate significant power to teachers while those teachers continue to withhold resources from each other. Team trust is the second independent variable because it measures the flow of resources sideways. Trust becomes relevant only where there is insufficient control or monitoring. Trust is defined as the willingness of a party to be vulnerable to another party on the basis of positive expectations of their behavior (Mayer et al., 1995; Rousseau et al., 1998). McAllister (1995) divides trust into two components: cognition-based trust, derived from evidence that a person will act in a competent and reliable manner, and affect-based trust, stemming from caring about each other, disclosing personal information, and demonstrating genuine concern. In this study, team trust refers to teachers' willingness to rely on colleagues within their own teaching research team or grade team.

The distinction between the two components is not merely conceptual. They remain significantly associated with performance after partialling out the shared variance (De Jong et al., 2016) and manifest differently across school contexts (Bellibaş et al., 2025; Choong & Ng, 2023). School trust studies have traditionally differentiated the target of trust, separating faculty trust in colleagues from trust in principals, parents, and students (Hoy & Tschannen-Moran, 2003). Bellibaş et al. (2025) demonstrated that horizontal and vertical trust play different roles in the relationship between learning-centred leadership and collective teacher culture. De Jong et al. (2016) meta-analyzed 112 independent studies of 7,763 teams and found a corrected correlation of .30 between intrateam trust and team performance, holding even after controlling for trust in the leader. School evidence points in the same direction: trust in colleagues predicts teacher efficacy and citizenship behavior (Choong & Ng, 2023, 2024), and trust underpinned collaboration is associated with instructional practice and school climate (Ma & Marion, 2024). Formal teams are a necessary but not sufficient condition for trust, however, and high trust with low monitoring can lower effectiveness (Langfred, 2004).

Concepts and Theories Related to Teachers' Team Efficacy

Social Cognitive Theory explains why the social environment can change beliefs about efficacy. Bandura (1997) distinguished collective efficacy from individual self-efficacy, defining the former as 'a group's shared belief in its conjoint capabilities to organize and execute

the courses of action required to produce given levels of attainments' (p. 477), and positing four sources: mastery experience, vicarious experience, social persuasion, and affective states. The reference group of an efficacy belief should correspond to the group doing the work. Many collective teacher efficacy studies ask teachers about their school faculty, which was sensible when the faculty was the main group (Goddard et al., 2000; Tschannen-Moran & Barr, 2004). In Chinese primary and secondary schools, however, the main group is smaller: the teaching research team and grade team conduct collaborative lesson planning, test item analysis, and task delegation, and their heads hold an official mid-level leadership position (Shan & Chen, 2022; Zhang, 2023).

This study therefore changes the reference group from the school faculty to the team, which matches the actual group where collaboration occurs and reduces the disconnect between the theoretical and the operational level that Sahli Lozano et al. (2025) identify as a persistent shortcoming in the field. Tschannen-Moran and Barr (2004) structured the Collective Teacher Beliefs Scale around two dimensions of shared efficacy adapted here: efficacy for instructional strategies, referring to the team's capacity to plan instruction, assess learning, adapt to diverse learners, and promote comprehension, and efficacy for student discipline, referring to the team's capacity to maintain behavioral expectations. This study's measure changes the original school-level referent to 'the teachers in my teaching research team or grade team.' Because the data are gathered from individual teachers, the analysis remains at the individual level and does not make claims about the integrity of team-level scores, a compositional model that acknowledges the level-of-analysis limitation observed by researchers (Chan, 1998; Sahli Lozano et al., 2025).

Relationship between Empowering Leadership, Team Trust, and Teachers' Team Efficacy

The two predictors are conceptually separate and empirically distinguishable. Empowering leadership resides in the behavior of the team leader; team trust resides in the relationships among team members. It is possible for a leader to delegate decision-making to a team whose members hoard their materials, and it is possible for a team to exhibit high trust while operating in a highly controlling environment. Yet they are related in reality, because when leaders delegate responsibility they convey a sense of trust in the team, and that trust may be returned (Kılınç et al., 2024). Including both predictors in one regression distinguishes two separate effects from one effect operating twice. Empowering behaviors map onto the four sources of efficacy belief: meaningfulness mobilizes effort that becomes the raw material of mastery experience, expressed confidence is social persuasion delivered from a trustworthy source, participation changes the attribution of success to the team, and autonomy allows outcomes to serve as information about the team's ability (Ahearne et al., 2005; Bandura, 1997; Kavgaci et al., 2026). Trusted colleagues provide credible role models, turning observation of a colleague's handling of a difficult lesson into vicarious experience, and an emotional context in which difficulties can be shared. Accordingly, the following hypotheses were derived:

H1: Empowering leadership has a significant influence on team efficacy in primary and secondary schools in Qingdao, Shandong, China.

H2: Team trust has a significant influence on team efficacy in primary and secondary schools in Qingdao, Shandong, China.

Figure 1 shows the conceptual framework of the study, in which empowering leadership and team trust are the independent variables and teachers' team efficacy is the dependent variable.

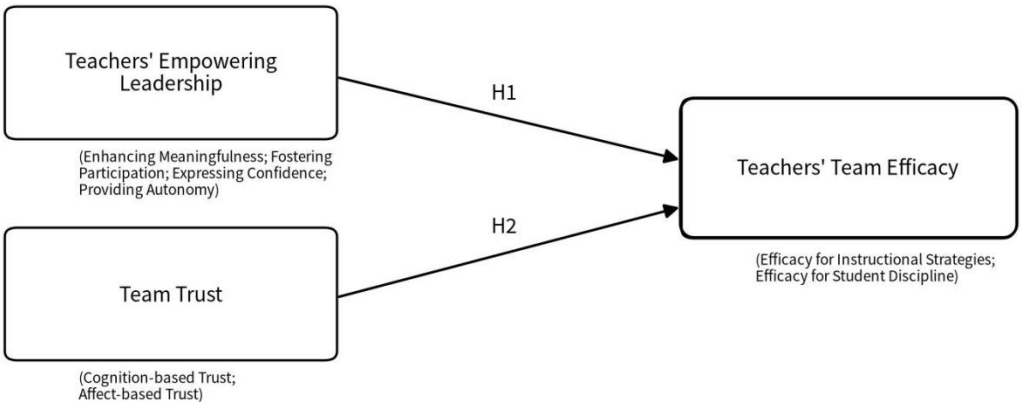


Figure 1 Conceptual Framework Adapted from Ahearne et al. (2005); McAllister (1995); Bandura(1997); TMoran&Barr(2004).

RESEARCH METHODOLOGY

This study employed a quantitative, cross-sectional, descriptive and correlational survey design. The design is derived from the research questions that aim to explore how empowering leadership and team trust affect teachers' team efficacy. The population comprised full-time teachers in primary and secondary schools in Qingdao, Shandong, with an estimated planning population of 40,000. Two criteria had to be met to be considered part of the population: respondents should currently be full-time teachers and should have been in their current school for at least one semester, so that they had time to observe the team leader and to judge the trustworthiness of colleagues (Ahearne et al., 2005; McAllister, 1995).

Because institutional permission was required to access schools, convenience sampling, a non-probability technique, was employed, and 450 questionnaires were distributed across participating schools in several districts of Qingdao to accommodate missing or invalid responses; all eligible teachers in each participating school were invited. As convenience sampling is a non-probability method, this study does not support estimation of population parameters for all teachers in Qingdao and is best characterized as an exploratory, non-probabilistic investigation of the relationships among the study variables. The unit of analysis was the individual teacher's perception of his or her own team and team leader; results of individual respondents were not compiled into team-level scores. Because neither team nor school identifiers were collected, the data-aggregation indices (e.g., the intraclass correlation coefficient, ICC) needed to justify treating individual perceptions as proxies for team-level phenomena could not be computed, and this level-of-analysis limitation is acknowledged.

The research instrument was a bilingual (English and Chinese) questionnaire of 43 items: 9 demographic items and 34 five-point Likert items. Empowering leadership was measured with 12 items adapted from Ahearne et al. (2005), team trust with 10 items adapted from McAllister (1995), and teachers' team efficacy with 12 items adapted from Tschannen-Moran and Barr (2004). Table 1 shows the structure of the questionnaire. Likert items were presented in a five-point response format from 1 (strongly disagree) to 5 (strongly agree), and higher scores indicated a stronger perceived construct. Adaptations were limited to the referent and occupational wording so that the published psychometric evidence for the source instruments continues to apply.

Table 1 Structure of the Questionnaire

Part	Variable	Dimensions	Items	Source
1	Demographic information	Gender; age; education; experience; team role; subject; school level; location	9	Developed by researcher
2	Teachers' empowering leadership	Meaningfulness (3); participation (3); confidence (3); autonomy (3)	12	Adapted from Ahearne et al. (2005)
3	Team trust	Cognition-based trust (5); affect-based trust (5)	10	Adapted from McAllister (1995)
4	Teachers' team efficacy	Instructional strategies (6); student discipline (6)	12	Adapted from Tschannen-Moran & Barr (2004)
	Total		43	

Content validity was examined by three experts through the Index of Item-Objective Congruence, which determines whether an item reflects what it is intended to measure and whether the items are understandable for teachers in Qingdao (Rovinelli & Hambleton, 1977). Reliability was examined through Cronbach's alpha in a pilot test with 30 teachers who shared characteristics with the population but were not included in the actual study; a value of .70 was taken as the sufficient cutoff (Cronbach, 1951; Hair et al., 2019). Because the study was conducted in English at a Thai institution while data came from teachers responding in Chinese, the instrument was developed in both languages: the English items were translated into Chinese and back-translated into English by a second bilingual educator who had not read the original items, and differences were reconciled before the instrument was finalized (Brislin, 1970).

Data were collected electronically in several stages: obtaining a letter of introduction, contacting schools and requesting consent, informing selected teachers about the objectives, inclusion criteria, anonymity, and voluntary nature of the survey, and distributing the Chinese version via an approved online survey tool over approximately two weeks, with one mid-survey reminder. Completed surveys were screened for incomplete responses, consistent responses across all items, and unusually quick response times, and unusable cases were deleted. The survey was voluntary and anonymous; no personally identifiable information was collected.

Data were analyzed in a specified order: data cleaning, descriptive statistics, reliability analysis, assumption testing, Pearson correlation, and multiple regression (Hair et al., 2019). Frequencies and percentages were calculated for demographic characteristics; means and standard deviations for the level of each construct and dimension; and the level was interpreted according to equal class intervals of 0.80 on the five-point scale. Regression assumptions were tested: normality of residuals by skewness, kurtosis, and the normal probability plot; linearity and homoscedasticity by the scatterplot and the Breusch-Pagan test; independence of residuals by the Durbin-Watson statistic; and multicollinearity by tolerance and the variance inflation factor. The model reported R^2, adjusted R^2, and the F test of overall significance, and, for each predictor, the unstandardized coefficient B, its standard error, the standardized coefficient β, the t value, and the significance level.

RESEARCH RESULTS

A total of 412 questionnaires obtained via the online platform were complete and usable. No missing values appeared for any of the 43 items, and all responses to the 34 scale items were within the allowable range. The analysis was based on these 412 complete cases.

Respondents' Profiles

Table 2 summarizes the respondents' general information. Most respondents were female (288, 69.90%) compared with male (124, 30.10%). The most common age range was 31-40 (127, 30.83%), with the groups aged 30 and under and 41-50 very close behind (both 113, 27.43%). Most respondents were educated to degree level (286, 69.42%), with a quarter holding postgraduate degrees (103, 25.00%). A substantial share was at an early career stage: 171 (41.50%) had taught for five years or less. In terms of school level, more respondents taught in primary schools (163, 39.56%), followed by junior secondary (115, 27.91%), senior secondary (75, 18.20%), and nine-year or twelve-year schools (59, 14.32%). Regarding school location, 167 (40.53%) taught in urban districts, 152 (36.89%) in county towns, and 93 (22.57%) in rural areas. Regular team members accounted for 350 (84.95%) of the sample, and team leaders and deputy team leaders for 62 (15.05%).

Table 2 Frequency and Percentage of Respondents' General Information

General Information	Frequency	Percentage
Gender - Female	288	69.90
Gender - Male	124	30.10
Age 31-40	127	30.83
Age 30 or below	113	27.43
Bachelor's degree	286	69.42
Teaching experience 5 years or less	171	41.50
Primary school	163	39.56
Junior secondary school	115	27.91
Urban district	167	40.53
County town	152	36.89
Team member	350	84.95
Total	412	100.00

Levels of the Study Variables

Table 3 presents the mean, standard deviation, and interpretation of the three study variables and their dimensions. Teachers rated all three variables at the high level: teachers' empowering leadership (M = 3.93, SD = 0.49), team trust (M = 3.92, SD = 0.45), and teachers' team efficacy (M = 3.88, SD = 0.45). Within empowering leadership, expressing confidence in high performance scored highest (M = 4.09, SD = 0.58), followed by enhancing meaningfulness (M = 4.03, SD = 0.66), fostering participation (M = 3.82, SD = 0.69), and providing autonomy from bureaucratic constraints lowest (M = 3.77, SD = 0.64). Within team trust, cognition-based trust (M = 3.97, SD = 0.55) scored higher than affect-based trust (M = 3.87, SD = 0.51). Within team efficacy, efficacy for instructional strategies (M = 3.92, SD = 0.52) exceeded efficacy for student discipline (M = 3.84, SD = 0.53).

Table 3 Mean and Standard Deviation of the Study Variables

Variable / Dimension	M	SD	Level
Teachers' empowering leadership	3.93	0.49	High
Enhancing the meaningfulness of work	4.03	0.66	High
Fostering participation in decision-making	3.82	0.69	High
Expressing confidence in high performance	4.09	0.58	High
Providing autonomy from bureaucratic constraints	3.77	0.64	High
Team trust	3.92	0.45	High
Cognition-based trust	3.97	0.55	High
Affect-based trust	3.87	0.51	High

Teachers' team efficacy	3.88	0.45	High
Efficacy for instructional strategies	3.92	0.52	High
Efficacy for student discipline	3.84	0.53	High

Reliability, Correlation, and Hypothesis Testing

All scales exceeded the .70 criterion: Cronbach's alpha was .865 for empowering leadership, .817 for team trust, and .832 for team efficacy, with dimension-level values ranging from .722 to .801. The three variables were nearly normally distributed, with skewness between .235 and .285 in magnitude and kurtosis between .223 and .308, all within the acceptable range. Regression assumptions were met: variance inflation factors were 1.342, the Durbin-Watson statistic was 2.070, and the Shapiro-Wilk ($p = .668$) and Breusch-Pagan ($p = .652$) tests indicated no departure from normality or constant variance.

Table 4 presents the Pearson product-moment correlations among the three study variables. All three correlations were positive and statistically significant at the .001 level. Teachers' empowering leadership correlated with teachers' team efficacy at $r = .674$, the strongest relationship among the three variables; team trust correlated with team efficacy at $r = .513$; and the two predictor variables correlated with each other at $r = .505$.

Table 4 Pearson Correlation Matrix of the Study Variables

Variable	**1**	**2**	**3**
Teachers' empowering leadership	-		
Team trust	.505	-	
Teachers' team efficacy	.674	.513	-

Table 5 presents the results of the multiple regression in which teachers' team efficacy was regressed on empowering leadership and team trust entered simultaneously. The two predictors explained 49.5% of the variance in teachers' team efficacy ($R^2 = .495$, adjusted $R^2 = .492$), $F(2, 409) = 200.055$, $p < .001$. On the standardized coefficients, teachers' empowering leadership exerted the greater influence ($\beta = .557$, $B = 0.513$, $SE = 0.038$, $t = 13.669$, $p < .001$) and team trust the lesser ($\beta = .232$, $B = 0.233$, $SE = 0.041$, $t = 5.704$, $p < .001$). Both hypotheses were therefore supported.

Table 5 Model Fit and Coefficients for Teachers' Team Efficacy

Predictor	**β**	**B**	**SE**	**t**	**p**
Model fit: $R^2 = .495$, adj. $R^2 = .492$, $F(2, 409) = 200.055$, $p < .001$					
Teachers' empowering leadership	.557	0.513	0.038	13.669	< .001
Team trust	.232	0.233	0.041	5.704	< .001

In summary, in primary and secondary schools in Qingdao, Shandong, teachers' empowering leadership and team trust were both significantly and positively related to teachers' team efficacy, jointly explaining 49.5% of its variance. On the standardized coefficients, empowering leadership carried the larger coefficient ($\beta = .557$) and team trust the smaller ($\beta = .232$). Hypotheses H1 and H2 were both supported.

DISCUSSION & CONCLUSION

This study examined the influence of teachers' empowering leadership and team trust on team efficacy in primary and secondary schools in Qingdao. All three constructs were rated at the high level, and both hypotheses were supported: empowering leadership ($\beta = .557$) and team trust ($\beta = .232$) together explained 49.5% of the variance in team efficacy, with empowering

leadership carrying the larger coefficient. The findings indicate that when teachers understand the significance of a good relationship with colleagues and perceive empowering behaviors from the team leader, they are more confident in their team's collective capability.

The finding that empowering leadership predicted team efficacy is consistent with Kavgaci et al. (2026), who found empowering leadership influencing collective teacher efficacy in high power distance settings, and with Kalkan et al. (2026). Within the four empowering behaviors, expressing confidence in high performance had the largest coefficient in the supplementary dimension-level analysis ($\beta = .243$) and the highest mean, aligning with Bandura's (1997) account of verbal persuasion as a source of efficacy belief delivered from a trustworthy source. The significant coefficient for team trust accords with De Jong et al. (2016) and Choong and Ng (2023, 2024), who found trust in colleagues predicting teacher efficacy. In the Chinese context, Zhu et al. (2022) found teacher trust and commitment to serially mediate the link between school leadership and student outcomes, an ordering the present additive model cannot evaluate.

For practice, the findings suggest that schools in Qingdao should work first on the leadership behaviors exercised inside teaching research and grade teams, in particular the expression of confidence in the team's capability, and should build trust among colleagues through shared professional work rather than through social activity. Confidence-giving and participation require no additional resources and can be embedded in existing meetings and feedback practices, such as starting a lesson study meeting with what went well, or providing feedback on examination analysis that highlights strengths. Building trust through shared professional work—paired lesson observation, joint examination marking, or co-responsibility for a grade-wide program—allows teachers to see each other performing the work and supports cognition-based trust. For theory, the study confirms that the two antecedents jointly shape teachers' shared confidence in their team, adding a Chinese, city-level case to a literature mostly drawn from other contexts.

This study has limitations that qualify its conclusions. As an exploratory, non-probabilistic investigation based on a convenience sample, the findings describe the relationships observed in the obtained sample and do not generalize to all teachers in Qingdao. The cross-sectional design precludes causal inference, and the reverse path is feasible: teams who believe in themselves might invite their leaders to display more empowerment. All measures were collected from the same teachers at one time point, so common method variance cannot be ruled out (Podsakoff et al., 2003). The referent-shift design measured team constructs through individual perceptions (Chan, 1998), and, because neither team nor school identifiers were collected, the ICC and multilevel modeling needed to justify treating individual perceptions as valid proxies for team-level phenomena could not be estimated; the analysis therefore remains at the individual level and does not capture the shared variance of teachers nested within teams or schools. Future research should employ longitudinal or cross-lagged designs, collect data at the team level with multilevel models or at least report data-aggregation indices such as the ICC, include principal leadership alongside team-head leadership, add variables such as teacher collaboration and school climate to the same equation, and use probability sampling with stratification across multiple cities to improve generalizability.

REFERENCES

Ahearne, M., Mathieu, J., & Rapp, A. (2005). To empower or not to empower your sales force? An empirical examination of the influence of leadership empowerment behavior on customer satisfaction and performance. Journal of Applied Psychology, 90(5), 945-955. https://doi.org/10.1037/0021-9010.90.5.945

Amundsen, S., & Martinsen, Ø. L. (2014). Empowering leadership: Construct clarification, conceptualization, and validation of a new scale. The Leadership Quarterly, 25(3), 487-511. https://doi.org/10.1016/j.leaqua.2013.11.009

Arnold, J. A., Arad, S., Rhoades, J. A., & Drasgow, F. (2000). The empowering leadership questionnaire: The construction and validation of a new scale for measuring leader behaviors. Journal of Organizational Behavior, 21(3), 249-269.

Bandura, A. (1997). Self-efficacy: The exercise of control. W. H. Freeman.

Bellibaş, M. Ş., Çelik, M., & Polatcan, M. (2025). The role of horizontal and vertical trust in relationships between learning-centered leadership and collective teacher culture. Psychology in the Schools, 62(11), 4826-4838. https://doi.org/10.1002/pits.70041

Brislin, R. W. (1970). Back-translation for cross-cultural research. Journal of Cross-Cultural Psychology, 1(3), 185-216.

Cansoy, R., Parlar, H., & Polatcan, M. (2022). Collective teacher efficacy as a mediator in the relationship between instructional leadership and teacher commitment. International Journal of Leadership in Education, 25(6), 900-918.

Celik, O. T., Sari, T., & Karagozoglu, A. A. (2025). A systematic literature review of research on teacher empowerment. Urban Education. Advance online publication.

Chan, D. (1998). Functional relations among constructs in the same content domain at different levels of analysis: A typology of composition models. Journal of Applied Psychology, 83(2), 234-246.

Choong, Y.-O., & Ng, L.-P. (2023). The effects of trust on efficacy among teachers: The role of organizational citizenship behaviour. Current Psychology, 42(22), 19087-19100.

Choong, Y.-O., & Ng, L.-P. (2024). Shaping teachers' organizational citizenship behaviour through self-efficacy and trust in colleagues. BMC Psychology, 12, 532.

Conger, J. A., & Kanungo, R. N. (1988). The empowerment process: Integrating theory and practice. Academy of Management Review, 13(3), 471-482.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. Psychometrika, 16(3), 297-334.

Dağdeviren Ertaş, B., Özdemir, M., & Vural, G. (2025). Empowered to act: How leadership fosters teacher agency. Educational Management Administration & Leadership. Advance online publication.

De Jong, B. A., Dirks, K. T., & Gillespie, N. (2016). Trust and team performance: A meta-analysis of main effects, moderators, and covariates. Journal of Applied Psychology, 101(8), 1134-1150.

Dennerlein, T., & Kirkman, B. L. (2022). The hidden dark side of empowering leadership: The moderating role of hindrance stressors in explaining when empowering employees can promote moral disengagement and unethical pro-organizational behavior. Journal of Applied Psychology, 107(12), 2220-2242.

General Office of the CPC Central Committee, & General Office of the State Council. (2021). Opinions on further reducing the homework burden and off-campus training burden of students in compulsory education. Government of the People's Republic of China.

Goddard, R. D., Hoy, W. K., & Woolfolk Hoy, A. (2000). Collective teacher efficacy: Its meaning, measure, and impact on student achievement. American Educational Research Journal, 37(2), 479-507.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). Multivariate data analysis (8th ed.). Cengage Learning.

Hoy, W. K., & Tschannen-Moran, M. (2003). The conceptualization and measurement of faculty trust in schools. In W. K. Hoy & C. G. Miskel (Eds.), Studies in leading and organizing schools (pp. 181-208). Information Age Publishing.

Kalkan, F., Dasci Sonmez, E., Yenel, K., Cemaloglu, N., & Gün, F. (2026). Empowering leadership in action: Unleashing teacher proactivity through psychological empowerment and self-efficacy. Educational Management Administration & Leadership. Advance online publication.

Kavgaci, H., Savaş, G., Özdemir, N., & Kılınç, A. Ç. (2026). Cultivating collective teacher innovativeness in high power distance settings: The role of empowering leadership and collective teacher efficacy. Teaching and Teacher Education, 176, 105541.

Kılınç, A. Ç., Polatcan, M., Savaş, G., & Er, E. (2024). How transformational leadership influences teachers' commitment and innovative practices: Understanding the moderating role of trust in principal. Educational Management Administration & Leadership, 52(2), 455-474.

Langfred, C. W. (2004). Too much of a good thing? Negative effects of high trust and individual autonomy in self-managing teams. Academy of Management Journal, 47(3), 385-399.

Liu, S., & Yin, H. (2024). Opening the black box: How professional learning communities, collective teacher efficacy, and cognitive activation affect students' mathematics achievement in schools. Teaching and Teacher Education, 139, 104443.

Lu, L., Ding, F., Ye, Z., Wu, Y., & Yang, D. (2025). Job crafting, perceived organizational support, and well-being: Enhancing teachers' work engagement under China's double-reduction policy. Social Behavior and Personality, 53(8), e15058.

Ma, X., & Marion, R. (2024). How does leadership affect teacher collaboration? Evidence from teachers in US schools. School Effectiveness and School Improvement, 35(2), 116-141.

Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. Academy of Management Review, 20(3), 709-734.

McAllister, D. J. (1995). Affect- and cognition-based trust as foundations for interpersonal cooperation in organizations. Academy of Management Journal, 38(1), 24-59.

Meyer, A., Richter, D., & Hartung-Beck, V. (2022). The relationship between principal leadership and teacher collaboration: Investigating the mediating effect of teachers' collective efficacy. Educational Management Administration & Leadership, 50(4), 593-612.

Meyer, A., Yada, T., Yada, A., Kempert, S., & Richter, D. (2025). Principal leadership practices for supporting teacher collaboration and collective teacher efficacy: A random intercept cross-lagged panel model. Educational Management Administration & Leadership. Advance online publication.

Ministry of Education of the People's Republic of China. (2024). Statistical bulletin on national educational development in 2023. Ministry of Education of the People's Republic of China.

Nassir, M., & Benoliel, P. (2026). Teachers' intent to leave and collective teachers' efficacy: The mediating role of teacher autonomy. Teaching and Teacher Education, 178, 105566.

Olmo-Extremera, M., Fernández-Terol, L., & Domingo-Segovia, J. (2024). Leading a professional learning community in elementary education: A systematic review of the literature. Journal of Research on Leadership Education, 19(1), 53-76.

Özdemir, M., Küçükçene, M., Abaslı, K., Pektaş, V., & Ayhan, E. (2024). The effect of empowering leadership and teacher autonomy on affective commitment: The mediating role of teacher self-efficacy. Education and Science, 49(219), 201-224.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. Journal of Applied Psychology, 88(5), 879-903.

Rousseau, D. M., Sitkin, S. B., Burt, R. S., & Camerer, C. (1998). Not so different after all: A cross-discipline view of trust. Academy of Management Review, 23(3), 393-404.

Rovinelli, R. J., & Hambleton, R. K. (1977). On the use of content specialists in the assessment of criterion-referenced test item validity. Dutch Journal of Educational Research, 2, 49-60.

Sahli Lozano, C., Wicki, M., Wüthrich, S., & Setz, F. (2025). A systematic review and meta-analysis of collective teacher efficacy's relationships with outcomes in the Job Demands-Resources model. Teaching and Teacher Education, 159, 105006.

Severiens, S., Ouwehand, K., & Meeuwisse, M. (2025). Teacher collaboration and teacher self-efficacy in diverse schools. Journal of Professional Capital and Community. Advance online publication.

Shan, Y., & Chen, J. (2022). Teaching research group leaders' perceptions of their engagement in curriculum leadership. Frontiers in Psychology, 13, 944445.

Shand, R., & Goddard, R. D. (2025). The relationship between teacher collaboration and instructional practices, instructional climate, and social relations. Educational Policy. Advance online publication.

Tschannen-Moran, M., & Barr, M. (2004). Fostering student learning: The relationship of collective teacher efficacy and student achievement. Leadership and Policy in Schools, 3(3), 189-209.

Yam, K. C., Reynolds, S. J., Zhang, P., & Su, R. (2022). The unintended consequences of empowering leadership: Increased deviance for some followers. Journal of Business Ethics, 181(3), 683-700.

Zhang, X. (2023). Professional collaboration and collaborative professionalism: Rethinking teacher collaboration in Chinese schools. ECNU Review of Education, 6(3), 431-450.

Zhong, Y., Lai, S., Li, Y., Yang, K., Tang, H., & Zhang, X.-y. (2025). Burnout and its relationship with depressive symptoms in primary school teachers under the Double Reduction policy in China. Frontiers in Public Health, 12, 1420452.

Zhu, H., Li, L., & Li, H. (2022). Teacher trust in others and teacher commitment co-mediate the path from school leadership to students' reading literacy in rural Chinese schools. Frontiers in Psychology, 13, 992003.

Data Availability Statement: The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Conflicts of Interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's Note: All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.



Copyright: © 2026 by the authors. This is a fully open-access article distributed under the terms of the Attribution-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0).