

Original article

The relationship between the class adviser's transformational leadership style and middle school students' sense of responsibility for learning: The mediating role of classroom psychological climate

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Abstract: Middle school is a pivotal developmental stage where fostering students' responsibility for learning is essential for their academic success and personal growth. Transformational leadership, characterized by motivation, intellectual stimulation, and personal care, positively influences educational outcomes. This study surveyed 567 middle school students using questionnaires to investigate the relationship between class advisers' transformational leadership style and students' sense of responsibility for learning, focusing on the mediating role of classroom psychological climate. The research revealed a significant positive correlation among transformational leadership style, classroom psychological climate, and students' sense of responsibility for learning. Specifically, teachers who adopted a transformational leadership style created a positive classroom psychological climate, enhancing students' sense of responsibility. The present study found that adopting a transformational leadership style by a class adviser fostered the development of a positive classroom psychological climate, enhancing students' sense of responsibility for learning.

Keywords: Responsibility for learning; class adviser's transformational leadership style; classroom psychological climate; middle school students

1. Introduction

The middle school period represents a critical phase in students' development. At this time, students' learning outcomes significantly impact their subsequent growth and development. A sense of responsibility for learning is an essential element that affects learning outcomes. Anderson and Prawat (1983) emphasize that this sense of responsibility is a core psychological quality that middle school students should develop. The term "sense of responsibility for learning" (or "learning responsibility") refers to an individual's psychological inclination to consciously and actively assume the obligations and responsibilities associated with their role as students in the learning process (Cantillon and Macdermott, 2008).

Internal and external factors significantly impact students' sense of responsibility for learning. Internal factors include self-awareness, achievement motivation, and physical and mental maturity, while external factors encompass influences such as parenting style and school environment (Bacon, 1993; Tao and Hong, 2014; Li and Ye, 2009; Urdan and Schoenfelder, 2006; Cook and Luz, 2015; Hardy and Grootenboer, 2013). As the primary setting for middle school students' academic and social activities, the classroom is critical in shaping this sense of responsibility. The classroom environment, including the peer groups students interact with, influences their sense of responsibility for learning (Urdan and Schoenfelder, 2006).

In the classroom, teachers serve as knowledge providers and leaders who shape students' sense of responsibility. Teachers' behaviors can profoundly affect individual students and the overall class dynamic (Mao and Song, 2018). Prior research categorized teacher leadership into three styles: transformational, transactional, and laissez-faire, with transformational leadership demonstrating the strongest correlation with a positive classroom psychological climate (Cheong, 1994). Based on transformational leadership theory, teachers who adopt this approach foster trust, loyalty, and respect among students. This style encourages students to internalize positive values and beliefs, appreciate the importance of learning, and elevate their aspirations, ultimately guiding them toward self-actualization and self-management (Mulyanti

et al., 2023; Martin and Bush, 2006). Consequently, transformational leadership fosters a more constructive classroom environment. Furthermore, the classroom's psychological climate significantly impacts students' sense of responsibility for learning. Research shows that a positive classroom climate enhances students' perception of peer support and environmental encouragement and fosters their sense of responsibility (Cao et al., 2021; Cook and Luz, 2015; Corno, 1979).

This study investigated the influence of teacher leadership styles and classroom psychological climate on middle school students' sense of responsibility for learning. The findings aim to provide valuable insights into effective teaching strategies that can strengthen students' responsibility for learning and cultivate a more positive classroom climate.

1.1 The impact of the class adviser's transformational leadership style on students' sense of responsibility for learning

The class adviser typically interacts more closely with students than other teachers. As the leader of the class, the class adviser's leadership style is crucial in conveying social cues that directly influence students' cognition and behavior (Mao and Song, 2018). Teacher leadership can be defined as the behaviors exhibited by teachers during educational activities aimed at guiding students toward shared academic and developmental goals (Duke, 2004). Research in organizational behavior categorizes leadership styles into transformational and transactional leadership (Burns, 1978), each with distinct effects on group dynamics and outcomes. Of these, transformational leadership emphasizes stimulating individuals' higher-order needs, helping them to recognize the significance and value of their work while fostering an environment of trust.

In an educational setting, transformational leadership theory suggests that teachers who adopt this approach cultivate trust, loyalty, and respect among students, reinforcing positive values and beliefs. This approach helps students appreciate the intrinsic value of learning and enhances their motivation and engagement (Martin and Bush, 2006). However, since the mid-20th century, there has been a notable decline in teachers' openness, resulting in a diminished emphasis on innovation and limiting the development of students' critical thinking skills (Xu, 2024). In this context, the transformational leadership style becomes increasingly vital. It strengthens students' sense of purpose and actively motivates them to pursue higher academic goals. This leadership style has proven effective in fostering positive outcomes within groups and organizations (Bolkan and Goodboy, 2009).

Furthermore, transformational leadership is highly relevant in the classroom. When teachers adopt a transformational leadership style, students tend to demonstrate greater engagement in learning and achieve better academic outcomes (Bolkan et al., 2006; Pounder et al., 2018; Leithwood and Jantzi, 2000). From this perspective, transformational leadership may be especially beneficial in fostering students' sense of responsibility. Other studies have also demonstrated that the class adviser's evolving leadership style predicts students' responsibility (Mao and Song, 2018) and self-responsible behavior (Reyes et al., 2012; Wang et al., 2023).

In conclusion, this study proposes hypothesis 1: The class adviser's transformational leadership style enhances middle school students' sense of responsibility for learning.

1.2 The mediating role of the classroom psychological climate

Social cognitive theory and social information processing theory provide valuable insights into fostering a sense of responsibility among middle school students. According to these theories, teacher leadership styles function as contextual factors within the classroom environment, directly influencing students' perceptions and indirectly shaping their attitudes, motivation, and behavior through the classroom climate, environment, and interpersonal relationships (Mao and Song, 2018). Although empirical studies examining the relationships among the teacher's transformational leadership style, classroom psychological climate, and students' sense of responsibility for learning are limited, existing research offers meaningful insights.

Avolio and Yammarino (2013) highlight that transformational leaders can enhance members' motivation, morale, and cognition, leading to increased commitment and competence and ultimately driving positive organizational change. This leadership style is similarly effective in educational settings, where transformational leadership can significantly improve classroom climate, creating conditions that support student learning. Anderson et al. (2014) reinforce this, demonstrating that the classroom psychological climate plays a critical role in shaping students' cognition, attitudes, and values, which ultimately affects their learning behavior (Zysberg and Schwabsky, 2021). In a positive classroom climate, students experience higher self-efficacy (Geng et al., 2019), which promotes responsible behavior and increases learning engagement (Zhou et al., 2021).

Thus, a class adviser's transformational leadership style may foster a positive classroom psychological climate, enhancing students' sense of responsibility for learning. In conclusion, this study proposes hypothesis 2: The classroom psychological climate mediates the relationship between the class adviser's transformative leadership style and students' sense of responsibility for learning.

2. Methods

2.1 Participants

Students from three middle schools were surveyed using cluster random sampling, with informed consent obtained from parents and schools before the questionnaire. The questionnaires were administered at the class level, with trained teachers guiding the students through completion and collection. A total of 574 questionnaires were collected. After excluding 7 that completed carelessly, 567 valid responses were included in the analysis, resulting in a recovery rate of

98.78%. There were 284 boys (50.1%) and 283 girls (49.9%). In terms of school level, there were 101 respondents (17.8%) from junior high school, 98(17.3%) from junior middle school, 89(16.0%) from senior high school, 89(16.0%) from grade 2, 93(16.4%) from senior vocational high school, and 97(17.1%) from grade 2.

2.2 Measures

Transformational leadership style. Teacher Transformational Leadership Style Subscale from The Teacher Leadership Behavior Scale was developed by Dörnyei and Muir (2019). It comprises 28 items across five dimensions: charisma, motivation, personal care, intellectual stimulation, and vision inspiration. Each question is rated on a five-point scale (1 = strongly disagree, 5 = strongly agree). A higher score on the Teacher Leadership Behavior Scale indicates a stronger inclination towards transformative leadership for class advisers. In this study, the overall Cronbach's α coefficient for the entire scale was .93. The Cronbach's α coefficients for each subscale were .89, .90, .89, .87, and .83, respectively.

Classroom psychological climate. The Classroom Psychological Climate Scale for primary and middle school students, developed by Wang and Yang (2014), consists of 31 items categorized into four dimensions: teacher-student relationships, student relationships, learning and growth, and management order. Scoring is done on a five-point scale (1 = strongly disagree, 5 = strongly agree), where a higher score indicates a better psychological climate in the classroom. In this study, the overall Cronbach's α coefficient for the entire scale was .96, and the Cronbach's α coefficients for each subscale were .95, .96, .95, and .94, respectively.

Responsibility for Learning. The Sense of Responsibility for Learning Scale for middle school students, developed by Feng (2015), consists of 39 items that assess six dimensions: the cognizing of learning responsibility, the emotion of learning responsibility, the will of learning responsibility, the motivation of learning responsibility, the responsible behavior of the student's role, the responsible behavior of the student's ability. Scoring is based on a five-point scale (1 = strongly disagree, 5 = strongly agree), with higher scores indicating a stronger sense of responsibility for learning. In this study, the overall Cronbach's α coefficient for the entire scale was .95. The Cronbach's α coefficients for each subscale were .91, .90, .80, .86, .89, and .89, respectively.

2.3 Analytical Strategy

Invalid data, defined as data with a missing rate of 15% or higher (Davey and Savla, 2010), were removed. Based on this criterion, 7 cases of invalid data were excluded in this study. Subsequently, Pearson correlation analysis and descriptive statistics were conducted using SPSS 23.0 and the Process plugin with the remaining data. Finally, a mediation effect test was performed on the data.

3. Results

3.1 Common method deviation test

An exploratory factor analysis was conducted on all items without rotation with the Harman single-factor test. The results revealed 15 factors with characteristic roots greater than 1. The first factor accounted for only 24.69% of the variance, falling below the critical criterion of 40% (Zhou and Long, 2004). It suggested that there was no significant common methodological bias in this study.

3.2 Descriptive statistics and correlation analysis

The Pearson correlation analysis was conducted with SPSS 23.0. The results indicated a significant positive correlation between transformative leadership style, classroom psychological climate, and students' sense of responsibility for learning (Table 1). This finding suggests that the data are appropriate for further analysis of mediation effects.

Table 1. Correlation analysis among the various variables

Variables	$M \pm SD$	1	2	3
Transformational leadership style	4.13 \pm 0.59	1		
Classroom psychological climate	4.09 \pm 0.69	.541*	1	
Sense of responsibility for learning	4.05 \pm 0.58	.422*	.388*	1

Note. * $p < .01$

3.3 The mediating role of classroom psychological climate

According to Wen and Ye (2014), the proposed mediation effect test idea was employed using model 4 in the PROCESS procedure (Hayes et al., 2017) to examine the mediating role of the classroom psychological climate between the transformational leadership style of the class adviser and the sense of responsibility for learning of middle school students. After controlling for demographic variables, the results indicated that the class adviser's transformational leadership style significantly and positively predicted the students' sense of responsibility for learning ($\beta = 0.41$, $p < .001$). After including the classroom psychological climate in the regression equation, the predictive effect of the student's sense of responsibility for learning remains significant ($\beta = 0.29$, $p < .001$). Furthermore, the transformational leadership style of the class adviser significantly and positively predicted the classroom psychological climate ($\beta = 0.54$, $p < .001$), and the classroom psychological climate significantly and positively predicted the students' sense of responsibility for learning

($\beta = 0.22, p < .001$). Therefore, the classroom psychological climate plays a significant mediating role between the class adviser's transformational leadership style and the sense of responsibility for the learning of middle school students (Table 2).

Table 2. Mediating effect of classroom psychological climate

Model		Effect value	SE	95% CI	
				Low	High
Transformational leadership style→ classroom psychological climate→Sense of responsibility for learning	Total effect	0.41	0.04	0.34	0.49
	Direct effect	0.29	0.04	0.21	0.38
	Indirect effect	0.12	0.03	0.07	0.17

4. Discussion

Consistent with prior studies (Martin and Bush, 2006), the present research found a significant positive association between the transformational leadership style and middle school students' sense of responsibility for learning. Based on social information processing and cognitive theory (Mao and Song, 2018) and transformational leadership theory (Martin and Bush, 2006), this study posits that a class adviser's transformational leadership style can foster a classroom climate where students feel respected and supported. This positive student–teacher interaction may enhance students' intrinsic motivation, fostering a desire for knowledge and encouraging them to pursue academic goals. Furthermore, as both the leader and manager of the classroom climate, the class adviser's leadership style exerts a substantial influence on students' perceptions of the classroom psychological climate (Wang et al., 2023; Lu et al., 2014). Prior studies have indicated that when a class adviser adopts a transformative leadership style, students experience a more positive class climate (Sebastian and Allensworth, 2012). The classroom's psychological climate is crucial in students' learning. According to group dynamics theory, the perceived psychological climate within the classroom can profoundly impact students' academic performance and motivation. Classrooms characterized by harmonious teacher–student and peer relationships, democratic and structured management, and an enriching learning environment create a psychological climate conducive to fostering students' sense of responsibility toward their academic pursuits (Kutsyuruba et al., 2015). Thus, the classroom's psychological climate shapes students' cognitions, attitudes, and values, ultimately influencing their engagement and participation in learning activities (Anderson et al., 2004).

The findings indicate a significant association between the class adviser's transformative leadership style and the psychological climate of the class. Moreover, a favorable psychological climate within the classroom substantially impacts students' sense of responsibility for learning. Previous research has demonstrated the substantial benefits of adopting a transformational leadership style in group and organizational contexts, emphasizing the profound respect it garners and its capacity to enhance leaders' sense of meaning and value (Pounder et al., 2018).

In the classroom context, the class adviser is a central figure whose leadership behaviors directly affect students' cognitions and behaviors and indirectly shape students' attitudes by cultivating a favorable psychological climate (Mao and Song, 2018; Leithwood and Jantzi, 2000). A class adviser who demonstrates transformational leadership can help foster a supportive and respectful psychological climate within the class, contributing to students' sense of belonging and commitment. Research indicates that a positive classroom climate can significantly enhance students' self-efficacy (Zysberg and Schwabsky, 2021), strengthen their sense of responsibility for learning (Geng et al., 2019), and increase their engagement in learning (Zhou et al., 2021). Consequently, when the class adviser adopts a transformational leadership style, they facilitate an environment where respect and support are prioritized, promoting a favorable psychological climate that enables students to actualize their potential, adopt more self-directed behaviors, and ultimately develop a heightened sense of responsibility for learning.

The class adviser is vital in students' learning and growth. They are responsible for imparting knowledge and serving as leaders within the classroom. The positive leadership displayed by the class adviser can significantly influence the psychological climate of the class and thus foster a sense of responsibility among students. Transformative leadership style is an approach to leadership. The class adviser should prioritize adopting a transformative leadership style to facilitate class and classroom management. This approach involves imparting the correct learning attitude and effective learning methods to students and demonstrating full respect and care for each student. Moreover, the class adviser should tailor their teaching to accommodate individual aptitudes while providing personalized help and support when necessary. Meanwhile, the teacher in charge of cultivating middle school students' psychological qualities should also consider individual perceptions of the classroom's psychological climate. The teacher should proactively monitor students' psychological state and inner world, use their ideals, beliefs, and values to influence students, establish a favorable psychological climate in the classroom, and assist in students' psychological development.

5. Limitations and future research

This study also has certain limitations. Firstly, a convenient sampling method was employed, resulting in a limited and potentially non–representative sample, which may restrict the generalizability of the findings. Future studies can use large and more diverse samples and employ more representative sampling techniques to improve the external validity and

generalizability of the research outcomes. Additionally, due to constraints, we couldn't differentiate between different categories of leadership styles and conduct a hierarchical analysis to explore their potential heterogeneity. Considering that variables at diverse levels may influence students' emotional experiences and perceptions of teacher–student relationships, future research may employ multilevel modeling techniques to investigate the underlying mechanisms through which different leadership styles impact students' emotional experiences and perceptions of teacher–student relationships. By doing so, we can improve our understanding of the influencing mechanisms among these variables and empirically validate them.

Data Availability Statement

The dataset generated and analyzed during the current study is available from the corresponding author upon request.

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Conflicts of interest

The authors declare no conflict of interest.

Use of AI and AI-assisted Technologies

No AI tools were utilized for this paper.

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