



## RESEARCH ARTICLE

# The Mediating Role of Chinese Junior High School Students' Learning Attitudes and Parental Educational Involvement between Classroom Management and Self-regulated Learning

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**ABSTRACT**

The aim of this study is to explore the influence of classroom management on the self-regulated learning of Chinese junior high school students, using their attitude toward learning and their parents' involvement in their education as mediators. Two urban and two rural junior high schools in China were chosen as samples using a stratified sampling method. 803 valid responses were collected from the 820 questionnaires distributed. The results indicate that female and urban school students significantly outperform their male and rural counterparts in terms of classroom management, self-regulated learning, learning attitudes, and parental involvement in education. Classroom management has a significant positive impact on self-regulated learning, and learning attitudes and parental involvement in education are partial mediators between classroom management and self-regulated learning.

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**1. INTRODUCTION**

Fostering students' self-regulated learning is increasingly garnering attention against the backdrop of global educational reform. Self-regulated learning not only helps students to adapt to knowledge environments that are rapidly changing, but it also serves as an essential foundation for lifelong learning (Garrison, 1997; Zhao et al., 2018) and a critical determinant of long-term academic success. It not only enhances students' immediate academic performance, but it also nurtures the planning and time-management skills that are crucial for their future academic development (Lourenço & Paiva, 2024; Mosquera et al., 2024; Zhao et al., 2021).

However, how to effectively improve students' self-regulated learning remains a complex issue that requires an urgent solution (Lourenço & Paiva, 2024; Roth et al., 2016). Classroom management is a key measure for optimising the classroom climate and guiding students' behaviour. It not only enhances classroom efficiency, but also promotes students' motivation to learn and become engaged in learning (Floress et al., 2018; Gay, 2010). Scholars propose that classroom management is not merely a mechanism to respond to students' misbehaviour, but it comprises a comprehensive set of teaching strategies, which has the aim of maximising the effective use of class time (Duan et al., 2024). Classroom management plays a positive role by maintaining the classroom rhythm and setting clear expectations. This helps to reduce distractions and improve students' focus, which boosts their

learning efficiency (Foster, 2022; Herman et al., 2018). Despite the existence of some studies of the relationship between classroom management and self-regulated learning, there is a scarcity of research that is focused on Chinese educational contexts, particularly junior high school students (Chiu, 2023; Jansen et al., 2019). Therefore, the purpose of this study is to investigate the impact of classroom management on the self-regulated learning of Chinese junior high school students, as well as the mediating roles of students' attitude toward learning and parental involvement in education, in order to provide new empirical evidence in this field.

The influence of gender and school-type differences on students' learning motivation and self-regulation is also highlighted in the study. There is much research that shows that gender differences may lead to varying responses and behaviour in classroom management, which further affects students' learning attitude and outcome (Fawait et al., 2020; Liou et al., 2023). Meanwhile, school type (urban or rural) has a significant influence on students' access to learning resources and family support, which may have a further effect on their learning attitude and self-regulated learning ability (Zhang et al., 2015). In this context, gender and school type are incorporated in this study as control variables to examine the impact of these variables in more depth.

By exploring the parallel mediating mechanisms between classroom management and students' self-regulated learning, the theoretical framework of education management is extended in this study to provide a new perspective of the effects of classroom management on self-regulated learning. The findings also offer educators some practical suggestions to optimise their classroom management strategies in order to enhance students' self-regulated learning capabilities. Finally, the importance of parental involvement in education is also emphasised in the study, and collaboration is recommended between schools and families to foster students' academic growth.

## 2. LITERATURE REVIEW

### 2.1 Classroom management and self-regulated learning

Classroom management refers to strategies utilised by teachers to organise, guide, and control students' behaviour to ensure the smooth operation of teaching activities (Duan et al., 2024; James, 2021). It not only encompasses the maintenance of classroom discipline, but also the equal allocation of teaching resources, the creation of a conducive learning environment, and the means to stimulate students' engagement (Çan & Toraman, 2022). Effective classroom management not only helps to maintain discipline, but also greatly enhances students' motivation and creates a positive learning atmosphere, which improves students' academic performance (Floress et al., 2018; Reinke et al., 2022). Teachers' classroom management skills have a direct influence on students' self-regulated learning, particularly at junior high school level. This is not only critical for students' immediate academic success, but also for them to lay the groundwork for their future academic development (Freeman et al., 2014; Reinke et al., 2022).

Self-regulated learning management refers to students' ability to set their own learning goals, select their own learning strategies, monitor their learning processes, and reflect on different outcomes, which enhances their learning effectiveness (Adam et al., 2017; Dettori & Persico, 2009; Gredler & Schwartz, 1997). Cultivating the management of self-regulated learning is crucial to improve students' academic achievement and foster self-discipline. Those with high levels of self-regulated learning management are often more proactive and engaged in the learning process (Boekaerts & Cascallar, 2006; Mejuh & Held, 2022). It has been demonstrated in existing studies that classroom management has a potential impact on students' self-regulated learning management because the clear rules and structures in a well-managed classroom environment create a favourable atmosphere for self-regulated learning. This encourages students to not only actively engage in complex learning tasks, but maintain their focus until they are completed (Alderman & MacDonald, 2015; Alvi & Gillies, 2020). Based on the above analysis, the first hypothesis is proposed as follows;

**Hypothesis 1:** The perception of classroom management of Chinese junior high school students has a significant and positive impact on their self-regulated learning management.

### 2.2 Direct impact of classroom management on students' learning attitude

Researchers have shown that classroom management is closely related to students' academic achievement and attitude toward learning (Bandura, 1986; Duan et al., 2024). It is emphasised by Bandura's social cognitive theory that teachers' self-efficacy can create a supportive learning

environment by classroom management, thereby enhancing students' engagement and motivation to learn (Gilpatrick, 2010; Hettinger et al., 2024). Against this backdrop, it is evident that effective classroom management is particularly crucial for fostering students' positive attitude toward learning.

Classroom management plays a more prominent role in those cultures that emphasise collectivism and academic achievement by effectively stimulating students' motivation to learn and classroom engagement by using structured and supportive strategies (Hofstede, 2010; Floress et al., 2018). This is well-aligned with the Chinese cultural context, where strict, but supportive classroom management strategies can significantly enhance students' attitude toward learning and engagement in the classroom (Zee & Koomen, 2016; Klassen & Tze, 2014). Based on the above analysis, the second hypothesis is proposed, as follows;

**Hypothesis 2:** The perception of classroom management has a significant and positive impact on Chinese junior high school students' attitude toward learning.

### **2.3 Direct impact of classroom management on parental involvement in education**

Classroom management is not limited to managing students' behaviour and classroom order. It can also involve collaborating with parents to build a more comprehensive educational support system. Researchers have found that effective classroom management is often accompanied by parental involvement in education, as parents can extend teachers' classroom rules and behavioural expectations into the home environment, thereby reinforcing students' learning habits and behavioural patterns (Hill & Tyson, 2009). This further suggests that parental involvement is an extension of the effectiveness of classroom management (Cheng & Chen, 2018).

Additionally, teachers' classroom management strategies can increase parents' active involvement by effectively communicating with them, particularly in terms of behavioural norms that are often extended into students' home life, thereby enhancing the effectiveness of parental educational involvement (Zhao et al., 2020). Akin et al. (2016) found that many challenges faced by teachers in classroom management, such as behavioural management, time management, and curriculum management, can often be addressed by involving the parents in their children's education. Furthermore, parents can enhance their involvement by participating in school activities and communicating with teachers, thereby improving their children's learning outcomes. Based on the above analysis, the third hypothesis is proposed as follows;

**Hypothesis 3:** The perception of Chinese junior high school students of classroom management has a significant and positive effect on their parents' involvement in education.

### **2.4 Mediating role of parental involvement in education and students' learning attitude between classroom management and self-regulated learning**

A positive learning attitude helps to enhance students' self-regulation skills, enabling them to plan independently and complete learning tasks without external supervision (Fan & Williams, 2010). Classroom management indirectly strengthens students' self-regulated learning by influencing their attitude toward learning (Bandura, 1986; Duan et al., 2024).

Parents' involvement, which includes homework supervision, participation in school activities, and the provision of learning resources, not only has a direct impact on students' academic performance, but also enhances their motivation and sense of responsibility, which further promotes their self-regulated learning (Gonida & Cortina, 2014; Grolnick & Slowiaczek, 1994). Furthermore, studies have shown that home-school collaboration plays a crucial role in students' academic success. Classroom management enhances parental involvement in students' learning process, which has an indirect impact by improving the latter's self-regulated learning (Grolnick et al., 2009). This effect is amplified in the context of Chinese culture, in which parents have high expectations for their children's academic performance and place significant emphasis on it.

Classroom management not only influences students' self-regulated learning by improving their attitude toward learning, but it also strengthens it by promoting parental educational involvement, enhancing students' performance by two distinctive pathways (Zhang et al., 2022). Based on the above analysis, the fourth, fifth and sixth hypotheses are proposed, as follows;

**Hypothesis 4:** Attitude toward learning mediates the relationship between classroom management and the self-regulated learning of Chinese junior high school students.

**Hypothesis 5:** Parental educational involvement mediates the relationship between classroom management and the self-regulated learning of Chinese junior high school students.

**Hypothesis 6:** Attitude toward learning and parental educational involvement jointly act as parallel mediators between classroom management and the self-regulated learning of Chinese junior high school students.

### 3. METHODOLOGY

#### 3.1 Research sample and sampling method

The junior high school students who participated in this study were selected from two urban and two rural schools in China in order to compare the differences between urban and rural schools. Stratified sampling was used at the class level, and paper questionnaires were distributed with the assistance of class teachers. Based on the recommendations of scholars, the sample size should be at least 10 times the total number of questionnaire items. Therefore, 820 questionnaires were distributed in total and 803 valid responses collected, resulting in a response rate of 97.926% (Ghisell, 1981).

#### 3.2 Measurement tools

The questionnaire used in this study comprised four scales: the Parental Educational Involvement Scale, the Self-regulated learning Scale, the Learning Attitude Scale, and the Classroom Management Scale.

The Parental Educational Involvement Scale, which was developed by Wang and Cai (2015), includes three dimensions: parental support, parental interaction, and parental attention. It consists of 23 items scored on a 5-point Likert scale, with a Cronbach's Alpha coefficient of .870.

The Self-regulated learning Scale, adapted from Pintrich and De Groot (1990), includes two dimensions: cognitive strategies and self-regulation. It consists of 22 items scored on a 5-point Likert scale, with items 3, 15, 19, and 20 reverse-scored. Cronbach's Alpha coefficients are .830 and .740, respectively.

The Learning Attitude Scale, adapted by Liu Yunhe and Shang Haitao (2014), includes three dimensions: cognitive performance, emotional performance, and behavioural performance. It consists of 13 items scored on a 5-point Likert scale, with a Cronbach's Alpha coefficient of .908.

The Classroom Management Scale, developed by Temli-Durmus (2019), includes three dimensions: personnel management, behavioural management, and instructional management. It consists of 15 items scored on a 5-point Likert scale, with Cronbach's Alpha coefficients of .820, .750, and .850, respectively. All English scales were translated using Brislin's (1970) back-translation technique in order to ensure linguistic consistency and translation accuracy.

#### 3.3 Data analysis methods

Amos, SPSS, and Process were used in this study for a statistical data analysis. Firstly, Harman's single-factor test was conducted to explore the possibility of common method bias. Subsequently, SPSS was used to conduct a descriptive analysis that could accurately present the characteristics of the sample and to conduct a difference analysis. Additionally, the structural equation model (SEM) was used to examine the measurement and structural models, analyse the goodness-of-fit indices and path coefficients to evaluate the structural model. The hypotheses were tested using Process, and finally, Bootstrapping was used to determine the significance of the mediating effects.

## 4. RESULTS

### 4.1 Common method variance

Harman's single-factor test was utilised to conduct an unrotated exploratory factor analysis of all the measurement items, and the results revealed the extraction of four common factors with eigenvalues greater than 1, ranging from 4.550 to 25.199. The total variance explained by the first common factor was 35.492%, which is below the standard threshold of 40%. Therefore, the data in this study does not exhibit significant common method bias (Podsakoff et al., 2003).

## 4.2 Sample characteristics

The sample for this study consisted of 803 participants from four middle schools in China. As shown in Table 1, the gender distribution of the sample was balanced, with 48.7% being males and 51.3% being females. 69.1% of them were junior high school students from urban schools and the remaining 30.9% came from rural schools.

**Table 1: Descriptive overview of students' socio-demographic characteristics**

Demographic	Sample(n=803)	Frequency	Percentage
Gender	Male	391	48.7%
	Female	412	51.3%
School Type	Urban Schools	555	69.1%
	Rural Schools	248	30.9%

## 4.3 Correlation analysis

The aim of this study is to explore the relationship among Chinese junior high school students' perception of classroom management, self-regulated learning, learning attitudes, and parental educational involvement. The data collected from 803 students was analysed using Pearson's correlation coefficients and two-tailed tests to examine the relationship between the variables.

**Table 2: Correlation analysis table (n=803)**

Variables	KT	XX	TD	JY
KT	1			
XX	.430***	1		
TD	.286***	.486***	1	
JY	.366***	.486***	.479***	1

Note. KT = Classroom Management ; JY = Parental Educational Involvement ; TD = Learning Attitude ; XX = Self-regulated learning.

As shown in Table 2, classroom management is significantly and positively correlated with self-regulated learning ( $r = 0.430$ ,  $p < .001$ ), learning attitudes ( $r = 0.286$ ,  $p < .001$ ), and parental educational involvement ( $r = 0.366$ ,  $p < .001$ ). Meanwhile, self-regulated learning shows a strong positive correlation with learning attitudes ( $r = 0.486$ ,  $p < .001$ ) and parental educational involvement ( $r = 0.486$ ,  $p < .001$ ). Additionally, there is a significant and positive correlation between learning attitudes and parental educational involvement ( $r = 0.479$ ,  $p < .001$ ), which indicates that parental involvement can foster more positive learning attitudes in students (Dormann et al., 2013).

## 4.4 Hypotheses testing

To test the hypotheses proposed in this study, SPSS statistical software was used to examine the differences across background variables, and Process statistical software was used for a parallel mediation analysis and to test the model. The direct effects of classroom management on self-regulated learning, parental educational involvement, and learning attitudes were tested first, while the indirect effects of classroom management on self-regulated learning due to parental involvement and learning attitudes were subsequently examined.

### 4.4.1 Differences in the variables among junior high school students of different genders and school types

According to the results of the independent sample t-test shown in Table 3, Chinese junior high school students exhibit significant gender differences in terms of their perception of classroom management, self-regulated learning, learning attitudes, and parental educational involvement. For example, the average score for females in relation to classroom management is 3.894, while for males it is 3.683, with a t-value of -3.127 and a p-value of .002. These findings indicate that females' perception of classroom management significantly outperforms that of males in terms of self-regulated learning, learning attitudes, and parental educational involvement.

**Table 3: Difference analysis of junior high school students of different genders on various variables (n=803)**

Variable	Gender				t	Difference Result
	Male (n=391)		Female (n=412)			
	M	SD	M	SD		
KT	3.683	1.027	3.894	0.876	-3.127**	Female > Male
XX	3.411	0.697	3.575	0.642	-3.465**	Female > Male
TD	3.498	1.040	3.832	0.908	-4.837***	Female > Male
JY	3.655	0.966	3.911	0.856	-3.980***	Female > Male

Note. KT= Classroom Management; JY= Parental Educational Involvement; TD= Learning Attitude; XX=Self-regulated learning.

According to the independent sample t-test results in Table 4, Chinese junior high school students from different types of schools exhibited significant differences in their perception of classroom management, self-regulated learning, attitude toward learning, and parental educational involvement. For instance, urban school students' average score for classroom management was 3.850, while that of rural school students was 3.661, with a t-value of 2.457 and a p-value of .014, indicating that urban school students have a greater perception of classroom management than rural school students. This suggests that urban school students significantly outperform rural school students in multiple educational dimensions.

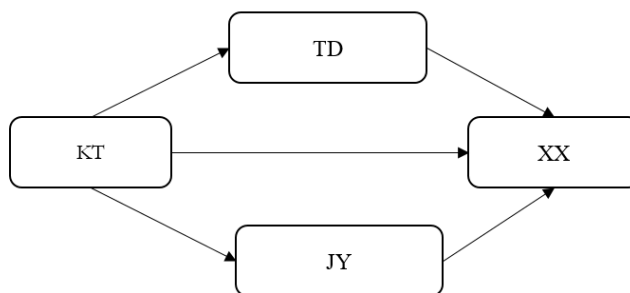
**Table 4: Analysis of differences between junior high school students in different types of schools in relation to various variables (n=803)**

Variable	School Type				t	Difference Result
	Urban Schools (n=555)		Rural Schools (n=248)			
	M	SD	M	SD		
KT	3.850	0.911	3.661	1.045	2.457*	Urban>Rural
XX	3.548	0.654	3.379	0.704	3.207**	Urban>Rural
TD	3.749	0.957	3.492	1.036	3.330**	Urban>Rural
JY	3.843	0.892	3.659	0.968	3.843	Urban>Rural

Note. KT= Classroom Management; JY= Parental Educational Involvement; TD= Learning Attitude; XX=Self-regulated learning; Control Variables: Gender (male as experimental group, female as control group); School Type (urban schools as experimental group, rural schools as control group).

**4.4.2 PROCESS test**

Hayes' (2017) statistical technique (PROCESS, Model 4) was utilised in this study to test the hypotheses. As illustrated in Figure 1, a parallel mediation model was applied to examine the influence of Chinese junior high school students' perception of classroom management on self-regulated learning, and to analyse the mediating effect of parental educational involvement and attitude toward learning.



**Fig 1: Effect of classroom management on the self-regulated learning of Chinese junior high school students, with parallel mediation by learning attitude and parental educational involvement, and controlling for student gender and school type.**

Note. KT= Classroom Management; JY= Parental Educational Involvement; TD= Learning Attitude; XX=Self-regulated learning.

According to the analytical results in Table 5, after controlling for gender and school type, Chinese junior high school students' perception of classroom management has a significant and positive impact on self-regulated learning ( $B = 0.292$ ,  $SE = 0.023$ ,  $t = 12.95$ ,  $p < .001$ ), which supports Hypothesis 1. Additionally, classroom management has a significant and positive impact on parental educational involvement ( $B = 0.337$ ,  $SE = 0.032$ ,  $t = 10.625$ ,  $p < .001$ ) and learning attitude ( $B = 0.272$ ,  $SE = 0.035$ ,  $t = 7.817$ ,  $p < .001$ ), which supports Hypotheses 2 and 3.

Furthermore, the mediating role of parental educational involvement and learning attitude between classroom management and self-regulated learning was confirmed. The results indicate that parental educational involvement has a significant and positive impact on self-regulated learning ( $B = 0.185$ ,  $SE = 0.024$ ,  $t = 7.594$ ,  $p < .001$ ), and learning attitude also significantly and positively affects self-regulated learning ( $B = 0.197$ ,  $SE = 0.022$ ,  $t = 8.877$ ,  $p < .001$ ). These findings support Hypotheses 4, 5, and 6, indicating that parental educational involvement and students' attitude toward learning mediate the relationship between classroom management and self-regulated learning.

Meanwhile, the model's  $R^2$  value was 0.375, indicating that classroom management, parental educational involvement, and learning attitude collectively explain 37.5% of the variance in self-regulated learning. The adjusted  $R^2$  value was 0.371, suggesting that the model had a high level of fit and strong explanatory power. In summary, the findings support the positive influence of classroom management on the self-regulated learning of Chinese junior high school students, mediated by parental educational involvement and learning attitude, confirming the partial mediating roles of these two variables.

The significance of the mediating effects in the model was tested using a bias-corrected Bootstrap procedure with 5000 resamples. The indirect effect between self-regulated learning and classroom management was found to be significant and positive, with the resulting confidence interval excluding zero (95% CI [.111, .199]). This indicated that learning attitudes and parental educational involvement partially mediate the relationship between classroom management and self-regulated learning, as shown in Table 6.

**Table 6: Indirect effect of classroom management on autonomous learning management through learning attitude and parental education involvement**

Indirect effects	Effect	SE	95% CI	
			LL	UL
TOTAL	0.116	0.017	0.085	0.152
KT > JY > XX	0.062	0.013	0.040	0.088
KT > TD > XX	0.053	0.011	0.034	0.078

Note. KT= Classroom Management; JY= Parental Educational Involvement; TD= Learning Attitude; XX=Self-regulated learning; Model 1 = KT > JY > XX; Model 2 = KT > TD > XX. Table 5 Parallel mediation effect test table

	XX			JY			TD			XX		
	B	SE	t	B	SE	t	B	SE	t	B	SE	t
<b>Constant</b>	2.361***	0.096	24.59	2.523***	0.135	18.711	2.637***	0.148	17.8	1.376***	0.107	12.87
<b>sex</b>	-0.096**	0.043	-2.238	0.180***	0.061	2.97	-0.266***	0.066	-4.001	-0.011	0.038	-0.284
<b>School Type</b>	0.107**	0.047	2.306	0.108	0.065	1.658	0.189***	0.072	2.627	0.05	0.041	1.218
<b>KT</b>	0.292***	0.023	12.95	0.337***	0.032	10.625	0.272***	0.035	7.817	0.176***	0.021	8.232
<b>JY</b>										0.185***	0.024	7.594
<b>TD</b>										0.197***	0.022	8.877
<b>R<sup>2</sup></b>	0.195			0.147			0.109			0.375		

<b>Adjusted R<sup>2</sup></b>	0.192	0.144	0.106	0.371
<b>F</b>	64.711	45.926	32.549	95.798

Note. KT= Classroom Management; JY= Parental Educational Involvement; TD= Learning Attitude; XX=Self-regulated learning; **Control Variables:** Gender (male as experimental group, female as control group); School Type (urban schools as experimental group, rural schools as control group).

## 5. DISCUSSION

### 5.1 Differences in variables among junior high school students of different genders

Sample data from four junior high schools in China was analysed in this study, and the results indicated that female students have a greater perception than male students of classroom management, self-regulated learning, parental educational involvement, and attitude toward learning. These findings are consistent with those of Liang Xiaohui (2021), Zhang Cheng (2021), Lejeune et al. (2023), Almasri (2022), and Turtura et al. (2024).

Turtura et al. (2024) found that female students perform better in classroom teaching and management, especially in terms of adhering to classroom rules and actively participating in group learning activities. Almasri (2022) also observed that girls outperform boys in complying with classroom rules, homework quality, and project planning, which may be attributed to boys' lively and energetic nature and weaker self-discipline, compared to girls' more reserved and self-disciplined traits. Meanwhile, the increasing emphasis on girls' education by modern parents (Theresya et al., 2018) is another key factor that contributes to the better performance of female students.

### 5.2 Differences in variables among junior high school students from different types of schools

The results of this study indicated that junior high school students from urban schools greatly outperform their rural counterparts in multiple educational dimensions. These findings are consistent with those of Bonetto et al. (2021), Lejeune et al. (2023), Worcester et al. (2012), and Turtura et al. (2024).

Specifically, Bonetto et al. (2021) found that parents are more willing to invest more time, effort and financial resources in their children's education due to the superior educational infrastructure in urban areas and relatively higher household income levels. As a result, urban families generally place greater emphasis on education than rural families, leading to urban students perceiving higher parental educational involvement than rural students. The reasons for this disparity may be that urban schools have more scientifically rigorous teaching and management standards and more abundant and comprehensive educational resources than rural schools (Qian Jia & Cao Yilan, 2024).

### 5.3 Impact of classroom management on self-regulated learning

It was found in this study that Chinese junior high school students' perception of classroom management has a significant and positive impact on self-regulated learning, which is consistent with previous research findings (Habib & Anisa, 2024).

Their findings suggested that an orderly and focused learning environment can be achieved by effective classroom management, thereby enhancing students' motivation to learn. Furthermore, enabling students to participate in decision-making within classroom management can better motivate their self-regulated learning abilities (Habib & Anisa, 2024; Stefanou et al., 2004).

Given the positive impact of classroom management on self-regulated learning, it is suggested that future researchers could further explore the specific mechanisms of classroom management in different educational contexts to gain a more comprehensive understanding of its influence on the development of students' self-regulated learning.

### 5.4 Direct impact of classroom management on learning attitude

Based on the results of this study, classroom management has a significant and positive impact on Chinese junior high school students' attitude toward learning, which corresponds with the finding that structured management enhances students' focus and engagement in learning (Li & Yue, 2006; Zhu & Li, 2020). Teachers can effectively promote learning by minimising distractions and clarifying rules. However, the effects of classroom management vary across cultural contexts. Overly strict management in liberal educational systems may restrict students' autonomy, resulting in a negative



attitude toward learning (Cheng et al., 2023). Students generally accept standardised management in China, where teachers have a higher degree of authority; therefore, its positive impact is perceived more strongly (Yang et al., 2022). The effectiveness of classroom management depends on management strategies, educational contexts, and cultural characteristics (Cheng et al., 2023; Yang et al., 2022).

### **5.5 Mediating role of learning attitudes and parental involvement in education**

It was found in this study that the attitude toward learning partially mediates the relationship between classroom management and self-regulated learning, which is consistent with existing researchers. For instance, Mukherjee et al. (2024) highlighted the crucial link between attitude toward learning, classroom management and self-regulated learning. Teachers shape students' positive attitude toward learning through classroom management, which indirectly promotes self-regulated learning, which is key for successful learning (Abidin et al., 2012; Brahm & Jenert, 2015; Steinbach & Stoeger, 2020). Additionally, parents' involvement in education plays a partial mediating role between classroom management and self-regulated learning, which is aligned with previous research (Effeney et al., 2013; Saada, 2021). Effective classroom management not only directly promotes students' self-regulated learning, but it also has an indirect effect by improving parental educational involvement, which includes the provision of resources, emotional support, and behavioural supervision. High levels of parental engagement, in close cooperation with schools, can enhance students' self-regulated learning capabilities, thereby improving their academic achievement (Ruig et al., 2023).

## **6. CONCLUSION**

An empirical analysis was conducted in this study in order to examine the impact of classroom management on junior high school students' self-regulated learning and to verify the mediating roles of parental educational involvement and learning attitude. According to the results, female students have a much better perception of classroom management, self-regulated learning ability, attitude toward learning, and parental educational involvement than males, while urban students outperform rural students across multiple dimensions. These results support the significant and positive impact of classroom management on self-regulated learning (Hypothesis 1). A structured environment and active participation due to effective classroom management greatly enhances students' self-regulated learning ability. Classroom management also has a significant effect on students' learning attitude and parental educational involvement (Hypotheses 2 and 3). This indicates that teachers' management behaviour not only influences students' attitude toward learning, but also strengthens parental involvement via home-school collaboration, thereby creating a synergy between school and family. Furthermore, students' learning attitude and parental educational involvement serve as mediators between classroom management and self-regulated learning (Hypotheses 4, 5, and 6), which further demonstrates the indirect role of classroom management in enhancing students' self-regulated learning ability.

## **7. SUGGESTIONS**

### **7.1 Suggestions for future research**

The relationship among the perception of classroom management, self-regulated learning, learning attitude, and parental educational involvement of Chinese junior high school students was examined in this study, along with the effect of gender and school background. Future researchers should expand the sample size and investigate the effect of background variables, such as family's economic status, parents' occupation and educational level, on the mechanisms that link classroom management and students' learning behaviour. Additionally, the research could be extended to different regions and educational levels to explore the effects of cultural and social factors. Given that the effectiveness of classroom management varies across cultures, cross-cultural comparisons could be conducted in future studies in order to analyse the relationship between classroom management strategies and students' learning behaviour in both Eastern and Western contexts, thereby providing educators with universal management recommendations.

### **7.2 Suggested classroom management strategies**

Parental educational involvement has a significant impact on students' learning outcomes. Schools are encouraged to use classroom management to motivate parents to actively participate in their

children's learning process by providing learning resources and homework guidance to help students to maintain good study habits after school. Additionally, schools can offer training programmes or information exchanges to enable parents to improve the effectiveness of their home education and enhance their ability to support their children's learning progress. Moreover, due to the variation of students' learning needs and backgrounds, teachers should focus on developing different classroom management strategies that are tailored to students' gender, regional background, and personality. Adopting flexible management methods tailored to the diverse needs of students can not only increase classroom engagement, but also improve students' motivation to learn and self-regulated learning abilities.

**Author contributions:** All authors contributed to the study conception and design. Material preparation, data collection and analysis were performed by Kai Zhang, Wang, Hsuan-Po, Rui Li and Yongjiu Gao. The first draft of the manuscript was written by Kai Zhang and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

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