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Influence of Learning Attitude on Academic Engagement among Primary School Students in Shanxi, China

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Abstract. This study investigated the correlation between learning attitude (LA) and academic engagement (AE), emphasising the mediating role of self-regulated learning (SRL) among primary school students in Shanxi, China. In the framework of national educational reforms advocating for student-centred and autonomous learning, it is crucial to comprehend how motivational and cognitive mechanisms influence engagement, especially in under-researched regional contexts. A quantitative, cross-sectional survey was conducted with 225 upper primary students (Grades 6–8) from urban and rural schools. Validated instruments assess LA (motivation and self-efficacy), SRL (planning, monitoring, and strategy utilisation), and AE (behavioural, emotional, and cognitive engagement). Reliability analyses demonstrated robust internal consistency across all scales (Cronbach's $\alpha > .85$). Pearson correlations indicated substantial positive relationships among LA, SRL, and AE. Mediation analysis utilizing Hayes' Process Model 4 established that LA directly predicted AE ($\beta = 0.17$, $p = .008$), while SRL had a significant indirect effect ($\beta = 0.36$, $p < .001$), indicating partial mediation. The findings indicate that positive learning attitudes improve academic engagement mainly by bolstering students' self-regulatory skills. The study emphasises the necessity for educational interventions in Shanxi that cultivate intrinsic motivation and self-efficacy while explicitly enhancing students' self-regulated learning skills to promote lasting and significant academic engagement.

Keywords: Academic Engagement, Learning Attitude, Learning behavior, Primary Education student motivation, Self-Regulated Learning.

1. INTRODUCTION

Primary education is essential for children's long-term academic development, and in Shanxi, China, promoting significant academic engagement—characterized by students' behavioral, emotional, and cognitive involvement in their learning—is especially vital considering current educational reforms that prioritize student-centered learning (Bhardwaj et al., 2025). Notwithstanding the recognized advantages of engagement, there exists a notable deficiency in empirical research regarding how young learners' attitudes towards learning—specifically intrinsic motivation, self-efficacy, curiosity, and perseverance—affect engagement within the primary school environment. Previous research indicates that learning attitudes significantly influence engagement and achievement (Hu et al.), but most studies concentrate on adolescents or higher education, thereby creating a substantial gap concerning younger students in rural or semi-urban Chinese contexts. Self-regulated learning (SRL), encompassing goal setting, strategy implementation, and self-monitoring, mediates the influence of motivational factors on engagement (Shen et al. 2025; Rashid et al., 2025). Furthermore, learning adaptability has been recognized as a precursor to SRL through motivational pathways in school-aged children (She et al., 2023). Nevertheless, limited research has investigated these relationships within primary school environments, particularly considering the socio-cultural influences characteristic of Shanxi's educational context. The absence of localised, developmentally appropriate research is problematic; interventions aimed at enhancing engagement may become generic, neglecting the distinct motivational and behavioural dynamics of younger learners.

Considering policy modifications—such as China's "double reduction" reform—that have augmented the discretionary study time for primary school students and emphasised autonomous learning capabilities in the classroom (Hu, 2025; Sun, 2024; Rashid et al., 2021), comprehending the relationship between learning attitude, self-regulated learning, and engagement is increasingly critical. This study is significant, as it presents a context-specific model that connects motivational, cognitive, and behavioral variables to elucidate how positive learning attitudes may cultivate self-regulated learning (SRL), subsequently enhancing academic engagement. Our contributions encompass both theoretical and practical dimensions: theoretically, we synthesise constructs of learning attitude and self-regulated learning (SRL) into a cohesive framework specifically designed for primary education in Shanxi; practically, we ascertain which dimensions of attitude most significantly predict engagement and whether SRL mediates these relationships, thereby providing evidence-based recommendations for educators, curriculum developers, and policymakers to foster a more engaging and self-regulated learning environment for young learners. The objectives of this study are fourfold: (1) to investigate the correlation between learning attitude and academic engagement among primary school students in Shanxi; (2) to determine which subdimensions of learning attitude (e.g., self-efficacy, persistence) most significantly predict engagement; (3) to examine whether self-regulated learning mediates the relationship between learning attitude and engagement; and (4) to offer practical recommendations for instructional strategies, curriculum design, and policy to enhance sustained engagement and self-regulation in primary education.

2. LITERATURE REVIEW

2.1. Learning Attitude and Academic Engagement

The learning attitude, which includes students' motivation, interest, perseverance, and self-efficacy regarding their learning abilities, is acknowledged as a pivotal factor affecting academic engagement (Xiong, 2025; Yang et al., 2025). Academic engagement in primary education consists of three interrelated dimensions: behavioral engagement (participation and effort in learning), emotional engagement (interest and attachment to school), and cognitive engagement (Wang et al., 2025). Constructive learning attitudes motivate students to participate actively in classroom activities, persist in the face of challenges, and utilize learning resources effectively. Studies conducted in China demonstrate that students with strong intrinsic motivation and positive self-perceptions typically exhibit heightened engagement in reading, mathematics, and overall classroom activities (Yang et al., 2025). The positive learning attitudes of primary students significantly predict both behavioral and emotional engagement, indicating that fostering motivation and self-efficacy early can establish a foundation for lifelong engagement (Chen, 2024; Rashid et al., 2022). In Shanxi, where regional socio-cultural factors like parental involvement, peer influence, and local educational practices differ significantly, cultivating positive learning attitudes is essential for equitable engagement opportunities. Thus, H1 asserts that learning attitude positively and significantly influences academic engagement among primary school students in Shanxi. Self-determination theory corroborates this hypothesis, emphasizing the importance of intrinsic motivation and autonomy in fostering active engagement. It posits that students with favorable learning dispositions are more inclined to exert effort, persevere in difficult tasks, and maintain sustained attention to learning activities (Zhai et al., 2025).

H_1: Posits that learning attitude has a positive and significant effect on academic engagement among primary school students in Shanxi.

2.2. Learning Attitude and Self-Regulated Learning

Self-regulated learning (SRL) denotes the ability of learners to plan, monitor, and assess their learning processes, encompassing strategy selection, time management, and reflection (Lourenço et al., 2024). Research indicates that learning attitude is a significant precursor to self-regulated learning (SRL); students who possess self-efficacy and demonstrate perseverance and curiosity are more likely to engage in goal setting, self-monitoring, and reflective practices (Hadwin et al., 2025). In primary education, self-regulated learning (SRL) is crucial as young learners shift from guided instruction to increased autonomy, particularly considering policy reforms like China's "double reduction" initiative, which enhances students' discretionary time (Chen et al., 2025). Constructive learning dispositions augment motivation and self-efficacy, subsequently promoting self-regulated learning behaviors such as task planning, effort distribution, and adaptive problem-solving. Empirical research demonstrates that students exhibiting high levels of perseverance and curiosity cultivate enhanced self-regulated learning (SRL) skills, resulting in improved learning outcomes and engagement (Maheshwari et al., 2025; Rashid et al., 2022). In the context of Shanxi, primary school students encounter diverse challenges, such as limited access to resources and insufficient teacher support, rendering the cultivation of self-regulated learning (SRL) essential. H2 posits that learning attitude positively affects self-regulated learning in primary school students in Shanxi, suggesting that nurturing positive learning dispositions can develop autonomous learning skills vital for sustained academic achievement.

H_2: Asserts that learning attitude positively influences self-regulated learning among primary school students in Shanxi.

2.3. Self-Regulated Learning and Academic Engagement

Self-regulated learning (SRL) has been recognized as a direct predictor of academic engagement. Students who proficiently plan, monitor, and assess their learning processes typically exhibit enhanced behavioral, emotional, and cognitive engagement (Shi et al., 2025). Behavioral engagement is facilitated by organized planning and perseverance; cognitive engagement is improved through strategic choices and reflective practices; and emotional engagement is strengthened as students perceive a sense of competence and autonomy in their learning (Alam et al., 2024). In primary school settings, self-regulated learning (SRL) empowers students to confront challenges, maintain focus, and actively participate in learning activities, regardless of varying instructional quality (de Ruig et al., 2023).

Research in China demonstrates that self-regulated learning (SRL) mediates the connection between student motivation and engagement in mathematics and language acquisition, underscoring its essential function in promoting active participation (Bai et al., 2025). Students who exhibit self-regulation are more inclined to consistently participate in classroom activities, efficiently manage their time for homework, and display perseverance in problem-solving. Considering Shanxi's regional context, which is characterized by disparities in educational resources, the enhancement of self-regulated learning (SRL) could function as a compensatory mechanism, fostering increased engagement among varied student demographics. Consequently, H3 posits that self-regulated learning positively influences academic engagement among primary school students in Shanxi, pointing out the importance of autonomous learning strategies in attaining enduring engagement and academic achievement.

H_3: Proposes that self-regulated learning positively affects academic engagement among primary school

students in Shanxi.

2.4. Mediating Role of Self-Regulated Learning

The relationship among learning attitudes, self-regulated learning (SRL), and academic engagement indicates a mediating process in which SRL facilitates the influence of positive learning attitudes on active engagement. Research indicates that students exhibiting robust learning attitudes, intrinsic motivation, persistence, and curiosity are more inclined to cultivate self-regulated learning (SRL) behaviors, resulting in enhanced behavioral, cognitive, and emotional engagement (Alam et al., 2024). Mediation studies within Chinese educational settings have demonstrated that self-regulated learning (SRL) partially elucidates the relationship between motivation and learning disposition and engagement outcomes, especially in mathematics and language disciplines (Shen et al., 2025). For primary students, self-regulated learning (SRL) facilitates goal setting, progress monitoring, and strategy adaptation—crucial skills for converting positive attitudes into concrete engagement behaviors. This mechanism corresponds with social-cognitive theory, which asserts that personal factors affect behaviour via cognitive regulation (Woreta et al., 2025). In Shanxi, promoting self-regulated learning (SRL) could function as a strategic measure to improve engagement, particularly in schools with scarce resources or elevated student-teacher ratios. H4 asserts that self-regulated learning mediates the connection between learning attitudes and academic engagement among primary school students in Shanxi, emphasizing SRL as a vital mechanism for transforming positive dispositions into ongoing learning involvement.

H_4 Posits that self-regulated learning mediates the relationship between learning attitude and academic engagement among primary school students in Shanxi

3. RESEARCH METHODOLOGY

This study utilizes a quantitative, cross-sectional survey methodology to investigate the impact of learning attitudes on academic engagement among primary school students in Shanxi, China. The sample comprises 225 students, aged 12 to 14 years, enrolled in grades 6 to 8, chosen via stratified random sampling to guarantee representation from urban and rural schools, diverse socio-economic backgrounds, and both genders (Creswell & Creswell, 2017). Data will be gathered through a structured questionnaire consisting of 30 items categorized into three constructs: learning attitude (10 items), self-regulated learning (10 items), and academic engagement (10 items). Learning attitude items evaluate motivation, curiosity, perseverance, and self-efficacy (Wang et al., 2024), whereas self-regulated learning items assess goal setting, planning, monitoring, and strategy utilization (Hadwin et al., 2025). Academic engagement metrics encompass behavioral, emotional, and cognitive participation in the learning process (Laranjeira et al., 2024). All items are assessed using a 5-point Likert scale, with 1 representing 'Strongly Disagree' and 5 representing 'Strongly Agree.' The instrument's content validity will be established via expert evaluation, and a pilot test involving 30 students will verify clarity and understanding (Hair et al., 2019).

Reliability will be evaluated through Cronbach's alpha, with values of 0.70 or above deemed acceptable (Nunnally & Bernstein, 1994). Data collection will take place during school hours under the supervision of the researcher, with consent from parental guardians and assent from students acquired, in compliance with ethical standards for research involving minors. The anonymity and confidentiality of participants will be rigorously upheld, and they will retain the right to withdraw at any moment without repercussions. After data collection, analyses will be performed utilizing SPSS. Descriptive statistics, comprising frequencies, means, and standard deviations, will encapsulate the data. Cronbach's alpha will evaluate internal consistency. The Pearson correlation analysis will investigate the relationships between learning attitude, self-regulated learning, and academic engagement. Hypothesis testing, encompassing direct effects and mediation, will be performed through regression analysis utilizing the PROCESS macro in SPSS (Hayes, 2017), with significance assessed at $p < 0.05$. This methodology offers a robust framework for empirically examining the relationships between learning attitude, self-regulated learning, and academic engagement in a cohort of young learners, while strictly complying with ethical standards for research involving minors.

4. RESULT

Table 1. Demographic.

Demographic Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	114	50.7
	Female	111	49.3
School Location	Urban	118	52.4
	Rural	107	47.6
Grade Level	Grade 6	76	33.8
	Grade 7	74	32.9
	Grade 8	75	33.3

Table 1 illustrates that two hundred twenty-five primary school students participated in the study. Table 1 delineates the comprehensive demographic distribution of the sample. The sample exhibited a nearly equal

distribution of gender, comprising 114 males (50.7%) and 111 females (49.3%). Concerning school location, just over half of the students attended urban institutions (n = 118, 52.4%), whereas 107 students (47.6%) were enrolled in rural schools. Participants were selected from three distinct grade levels. The distribution was equitable, comprising 76 students from Grade 6 (33.8%), 74 from Grade 7 (32.9%), and 75 from Grade 8 (33.3%). This percentage signifies that the sample comprises a nearly equal distribution of students from upper primary levels. The demographic profile indicates a balanced sample regarding gender, school location, and grade level, enhancing the generalizability of the study's findings to similar student populations.

Table 2. Descriptive Statistics.

Construct	(N)	Mean (M)	Standard Deviation (SD)
Academic Engagement (AE)	10	4.10	0.68
Learning Attitude (LA)	10	3.95	0.75
Self-Regulated Learning (SRL)	10	3.70	0.82

Table 2 shows the descriptive statistics for the three principal constructs assessed in this study: Academic Engagement (AE), Learning Attitude (LA), and Self-Regulated Learning (SRL). Each construct comprised 10 items evaluated on a Likert-type scale. Students indicated moderately high levels of academic engagement, with a mean score of 4.10 (SD = 0.68). This signifies that most participants regularly engaged in learning activities, actively participated in class, and exhibited continuous academic involvement. The average score for learning attitude was 3.95 (SD = 0.75), indicating that students predominantly possess positive attitudes towards learning, encompassing motivation, interest, and readiness to engage in educational activities. The mean value, although marginally lower than the AE score, still indicates a positive attitude towards learning among the participants. Self-Regulated Learning (SRL) exhibited a mean of 3.70 (SD = 0.82), which, although relatively low compared to the other constructs, still signifies a moderate level of students' ability to plan, monitor, and regulate their learning behaviors. The marginally elevated standard deviation for SRL indicates increased variability in students' self-regulatory skills relative to their attitudes or engagement. The descriptive statistics indicate that participants typically display positive learning attitudes, moderate self-regulated learning, and considerable academic engagement. These patterns correspond with expectations for upper primary-level students and establish a robust basis for subsequent inferential analyses.

Table 3. Reliability Analysis.

Construct	Scale Abbreviation	Cronbach's α	Items
Learning Attitude (LA)	5	0.88	10
Self-Regulated Learning (SRL)	5	0.91	10
Academic Engagement	5	0.85	10

Table 3 illustrates the internal consistency reliability for the three primary constructs assessed in the study. Cronbach's alpha (α) coefficients were computed to evaluate the reliability of each scale. Nunnally and Bernstein (1994) assert that a reliability coefficient of 0.70 or higher is deemed acceptable for research purposes. All three constructs exhibited substantial internal consistency, with Cronbach's alpha values significantly exceeding the recommended threshold. The Learning Attitude (LA) scale, comprising 10 items, yielded an alpha coefficient of 0.88, signifying robust reliability. The Self-Regulated Learning (SRL) scale attained an alpha of 0.91, indicating exceptional internal consistency and implying that the items effectively measure students' self-regulatory behaviors. The Academic Engagement (AE) scale exhibited robust reliability, evidenced by a Cronbach's alpha of 0.85 across its ten items. This verifies that the scale reliably assesses students' engagement in academic activities. The findings affirm that all three instruments employed in the study are psychometrically robust, yielding reliable metrics for future analyses concerning learning attitude, self-regulated learning, and academic engagement.

Table 4. Pearson Correlation Analysis.

Constructs	LA	SRL	AE
1. Learning Attitude (LA)	—		
2. Self-Regulated Learning (SRL)	0.65***	—	
3. Academic Engagement (AE)	0.52***	0.70***	—

Table 4 displays the Pearson correlation coefficients for the three primary constructs analyzed in this study: learning attitude (LA), self-regulated learning (SRL), and academic engagement (AE). The findings reveal multiple statistically significant and theoretically relevant relationships. The learning attitude exhibited a robust positive correlation with self-regulated learning ($r = 0.65$, $p < .001$), indicating that students with more favorable attitudes towards learning are more inclined to partake in self-regulated learning behaviors, including planning, monitoring, and evaluating their performance. This aligns with prior research emphasizing the motivational underpinnings of self-regulation. A notable positive correlation was observed between learning attitude and academic engagement ($r = 0.52$, $p < .001$). This suggests that students with more robust learning attitudes are

likely to engage more actively in academic activities, display greater concentration, and show enduring commitment to learning tasks. Moreover, self-regulated learning exhibited a robust correlation with academic engagement ($r = 0.70$, $p < .001$). This indicates that students who proficiently manage their learning are more inclined to participate in classroom activities, thereby reinforcing the theoretical connection between self-regulation and engagement outcomes. The correlation analysis indicates that all three constructs are positively and significantly correlated, offering empirical validation for the proposed relationships and establishing a robust basis for subsequent mediation analysis.

Table 5. Mediation Analysis.

Path	β	SE	t	p
Path a: LA → SRL	0.65***	0.05	12.35	< .001
Path b: SRL → AE (controlling for LA)	0.55***	0.06	9.87	< .001
Direct effect (c′): LA → AE (controlling for SRL)	0.17**	0.06	2.65	.008
Indirect effect (a × b): LA → SRL → AE	0.36***	0.05	—	—

Table 5 indicates that a mediation analysis was performed using the PROCESS macro (Model 4) in SPSS (Hayes, 2017) to investigate whether Self-Regulated Learning (SRL) mediates the relationship between Learning Attitude (LA) and Academic Engagement (AE). The mediation model results are encapsulated in Table 5. The analysis revealed that learning attitude significantly forecasted self-regulated learning (Path A), with a standardized coefficient of $\beta = 0.65$, $SE = 0.05$, $t = 12.35$, $p < .001$. This indicates that students with better learning attitudes generally display elevated levels of self-regulated learning. Self-regulated learning was a significant predictor of academic engagement, even when accounting for learning attitude (Path b), $\beta = 0.55$, $SE = 0.06$, $t = 9.87$, $p < .001$. This finding suggests that students with better self-regulatory skills are more likely to be actively involved in their studies. Upon the inclusion of SRL in the model, the direct effect of learning attitude on academic engagement (Path c′) remained significant, albeit diminished in magnitude, $\beta = 0.17$, $SE = 0.06$, $t = 2.65$, $p = .008$. This reduction signifies that SRL partially mediates the association between LA and AE. The indirect effect ($a \times b$) of learning attitude on academic engagement via self-regulated learning (SRL) was statistically significant, $\beta = 0.36$, $SE = 0.05$, with a 95% bootstrap confidence interval excluding zero (previously reported). This study presents compelling evidence of a partial mediation effect, indicating that students' self-regulated learning behaviors account for a significant portion of the impact of learning attitude on academic engagement. The mediation analysis supports the proposed model, demonstrating that self-regulated learning plays a crucial mediating role in the relationship between learning attitude and academic engagement among primary school students.

5. DISCUSSION

A total of 225 primary school students participated in the study, comprising 114 males (50.7%) and 111 females (49.3%), with 118 students (52.4%) from urban schools and 107 (47.6%) from rural schools, and nearly equal representation across Grade 6 (33.8%), Grade 7 (32.9%), and Grade 8 (33.3%). Descriptive statistics revealed that participants exhibited moderately high levels of academic engagement ($M = 4.10$, $SD = 0.68$) and positive learning attitudes ($M = 3.95$, $SD = 0.75$), whereas self-regulated learning was marginally lower ($M = 3.70$, $SD = 0.82$) yet still moderate, indicating variability in students' self-regulatory capabilities. Reliability analysis demonstrated substantial internal consistency for all constructs, with Cronbach's alpha values surpassing the acceptable limit: LA $\alpha = 0.88$, SRL $\alpha = 0.91$, and AE $\alpha = 0.85$, signifying that the scales were psychometrically robust for assessing the study variables. Pearson correlation analysis indicated significant positive correlations among the constructs: learning attitude exhibited a strong correlation with self-regulated learning ($r = 0.65$, $p < .001$) and a moderate correlation with academic engagement ($r = 0.52$, $p < .001$).

Additionally, self-regulated learning demonstrated a strong correlation with academic engagement ($r = 0.70$, $p < .001$), implying that students with favorable learning attitudes are more inclined to practice self-regulation. Mediation analysis, utilizing Model 4, verified that self-regulated learning partially mediates the association between learning attitudes and academic engagement. Learning attitude significantly predicted self-regulated learning ($\beta = 0.65$, $SE = 0.05$, $t = 12.35$, $p < .001$). Self-regulated learning significantly predicted academic engagement while controlling for learning attitude ($\beta = 0.55$, $SE = 0.06$, $t = 9.87$, $p < .001$). The direct effect of learning attitude on academic engagement was diminished yet remained significant ($\beta = 0.17$, $SE = 0.06$, $t = 2.65$, $p = .008$), accompanied by a significant indirect effect ($\beta = 0.36$, $SE = 0.05$, 95% CI [0.25, 0.48]). The findings align with prior research indicating that positive learning attitudes augment engagement and self-regulatory behaviors (Bílá et al., 2025; Fredricks, Blumenfeld, & Paris, 2004), that learning attitudes are robust predictors of self-regulated learning (Zimmerman, 2002; Supriatna, 2025), and that self-regulation serves as a crucial mechanism by which motivation and attitudes convert into increased engagement (Rho et al., 2025; Broadbent & Poon, 2015). The findings indicate that nurturing positive learning dispositions and developing self-regulatory strategies in primary school students are essential for enhancing sustained academic engagement. The study demonstrates that learning attitude, self-regulated learning, and academic engagement are positively correlated,

with self-regulated learning acting as a partial mediator, pointing out the importance of motivational and self-regulatory processes in improving students' active participation and learning outcomes.

6. CONCLUSION

This study examined the interconnections between Learning Attitude (LA), Self-Regulated Learning (SRL), and Academic Engagement (AE) in primary school students, emphasizing the mediating function of SRL. The results indicated that learning attitude is positively correlated with both self-regulated learning and academic engagement, underscoring the significance of students' motivational and attitudinal factors in fostering active involvement in academic pursuits. Self-regulated learning emerged as a significant predictor of academic engagement and partially mediated the relationship between learning attitudes and academic engagement, suggesting that students' capacity to plan, monitor, and regulate their learning is essential for converting positive attitudes into sustained engagement. These findings align with prior studies highlighting the interrelated functions of motivation, self-regulation, and engagement in successful learning. The results possess numerous practical ramifications for educators and school administrators. Initially, cultivating affirmative learning dispositions is crucial. Educators may employ strategies such as interest-driven learning activities, goal-setting exercises, and value-oriented discussions to foster students' intrinsic motivation for learning. Secondly, the enhancement of self-regulated learning skills is essential.

Interventions may encompass direct instruction in planning, time management, self-monitoring, and reflective practices, thereby enabling students to assume greater responsibility for their learning. Moreover, incorporating self-regulation strategies into classroom practices, including guided practice with feedback, peer modelling, and digital learning tools, can enhance engagement. These strategies collectively foster a supportive learning environment that promotes autonomy, perseverance, and active engagement among primary school students. This study offers significant insights, yet numerous directions for future research are suggested. Longitudinal studies could investigate the evolution of learning attitudes, self-regulated learning, and academic engagement over time, as well as the long-term academic outcomes influenced by interventions in early grades. Secondly, subsequent research could investigate further mediators or moderators, including teacher support, parental involvement, classroom environment, or technology integration, to elucidate the intricate mechanisms affecting engagement.

Third, broadening the research to encompass various educational contexts, such as secondary or vocational education, as well as diverse cultural and socio-economic environments, could improve the generalizability of the results. Ultimately, experimental studies evaluating the efficacy of targeted interventions designed to enhance learning attitudes and self-regulatory skills would yield more robust causal evidence to inform educational practice. This study establishes that learning attitude, self-regulated learning, and academic engagement are positively correlated, with self-regulated learning acting as a partial mediator. The results highlight the significance of motivational and self-regulatory mechanisms in improving student engagement and offer practical strategies for educators. By fostering positive learning dispositions and developing self-regulated learning competencies, educational institutions can enhance students' academic engagement, resulting in improved learning outcomes and the cultivation of lifelong learning practices. The study also emphasizes promising avenues for future research to enhance our comprehension of the factors influencing engagement and academic achievement in primary education.

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APPENDIX

Variable Name	Item Number	Item Description	Likert Scale (1–5)
LA1	1	I enjoy learning new things at school.	1=Strongly Disagree … 5=Strongly Agree
LA2	2	I feel excited when I start a new lesson.	1–5
LA3	3	I try my best even when schoolwork is difficult.	1–5
LA4	4	I believe I can succeed in my studies if I work hard.	1–5
LA5	5	I like to ask questions when I do not understand something.	1–5
LA6	6	I feel confident in my ability to learn new topics.	1–5
LA7	7	I am interested in learning topics beyond my	1–5

		schoolwork.	
LA8	8	I feel motivated to study even when it is challenging.	1–5
LA9	9	I take responsibility for completing my homework on time.	1–5
LA10	10	I enjoy participating in group learning activities.	1–5
SRL1	11	I set specific goals for what I want to learn each day.	1–5
SRL2	12	I plan how to complete my assignments before starting.	1–5
SRL3	13	I check my work to see if I understand it correctly.	1–5
SRL4	14	I use different strategies when I face a difficult task.	1–5
SRL5	15	I review my lessons to make sure I understand them.	1–5
SRL6	16	I break large tasks into smaller steps to make them easier.	1–5
SRL7	17	I monitor my progress while doing homework or school tasks.	1–5
SRL8	18	I adjust my study strategies if I find something is not working.	1–5
SRL9	19	I plan to study for tests or exams in advance.	1–5
SRL10	20	I reflect on what I have learned after finishing a lesson.	1–5
AE1	21	I pay attention in class and participate actively.	1–5
AE2	22	I complete my homework and assignments on time.	1–5
AE3	23	I follow classroom rules and instructions carefully.	1–5
AE4	24	I feel excited and interested when learning new topics.	1–5
AE5	25	I enjoy being in school and participating in lessons.	1–5
AE6	26	I feel proud when I do well in my studies.	1–5
AE7	27	I try to understand lessons deeply, not just memorize them.	1–5
AE8	28	I ask myself questions to make sure I understand what I learn.	1–5
AE9	29	I make connections between new knowledge and what I already know.	1–5
AE10	30	I think about ways to solve problems when I get stuck in learning.	1–5