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School Engagement as Predicted by Future Orientation and Academic Self-Efficacy

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A B S T R A C T

Objective: This study aimed to investigate the predictive roles of future orientation and academic self-efficacy in determining school engagement among Canadian high school students.

Methods and Materials: The research employed a correlational descriptive design with a sample of 323 students selected based on Morgan and Krejcie's sampling table. Participants were recruited from various high schools across Canada and completed three standardized instruments: the School Engagement Scale (Fredricks et al., 2005), the Future Orientation Scale (Steinberg et al., 2009), and the Academic Self-Efficacy Scale (Zimmerman et al., 1992). Data analysis was conducted using SPSS version 27. Descriptive statistics were used to report means and standard deviations of study variables. Pearson correlation analysis was used to examine the relationship between school engagement and each of the two predictor variables. Multiple linear regression analysis was then conducted to determine the extent to which future orientation and academic self-efficacy predict school engagement.

Findings: The results indicated that both future orientation ($r = .46$, $p < .001$) and academic self-efficacy ($r = .59$, $p < .001$) were significantly and positively correlated with school engagement. The multiple regression model was statistically significant, $F(2, 320) = 84.55$, $p < .001$, with an R^2 of .40, indicating that 40% of the variance in school engagement could be explained by the two predictor variables. Academic self-efficacy ($\beta = .43$, $p < .001$) emerged as a stronger predictor than future orientation ($\beta = .25$, $p < .001$), although both variables made meaningful contributions to the model.

Conclusion: The findings highlight the importance of enhancing both future orientation and academic self-efficacy in adolescents as a means to foster greater school engagement. These results provide valuable insights for educators, counselors, and policymakers aiming to support academic motivation and reduce disengagement among high school students.

Keywords: *School engagement, future orientation, academic self-efficacy, adolescent education, predictive model, student motivation, Canada.*

1. Introduction

In recent years, school engagement has emerged as a crucial construct in educational psychology, reflecting the degree of students' emotional, behavioral, and cognitive involvement in school-related activities. It is widely recognized as a key predictor of academic achievement, psychosocial well-being, and long-term educational success (Jian-ping et al., 2024). School engagement not only influences immediate classroom behaviors but also serves as a buffer against dropout, school failure, and disengagement during adolescence—a period marked by developmental challenges and shifting social roles (Ngwoke et al., 2017). As educators and policymakers seek ways to enhance student participation and learning outcomes, understanding the underlying predictors of engagement becomes essential. Two psychological constructs that have garnered significant attention in this regard are future orientation and academic self-efficacy.

Future orientation refers to an individual's thoughts, plans, motivations, and feelings about the future. It encompasses the ability to anticipate and prepare for future events, set long-term goals, and consider the consequences of present behavior (Låftman et al., 2019). Research shows that students with a strong future orientation are more likely to engage actively in school as they perceive academic success as a stepping stone toward future aspirations (Chen et al., 2021). The role of future orientation in student engagement has been particularly emphasized in developmental and motivational theories, highlighting how a meaningful vision of the future promotes persistence, resilience, and investment in school tasks (Hill et al., 2018). Moreover, it acts as a psychological asset that mediates the impact of socioeconomic and contextual factors on academic functioning (Nguyen et al., 2021).

Academic self-efficacy, on the other hand, refers to students' beliefs in their capability to successfully perform academic tasks. Grounded in Bandura's social cognitive theory, self-efficacy influences students' motivation, effort, and perseverance in the face of challenges (Zhang et al., 2022). Numerous studies have demonstrated that students with high academic self-efficacy tend to adopt mastery goals, employ effective learning strategies, and show greater academic persistence, all of which are integral components of school engagement (Wong et al., 2019). Self-efficacy beliefs also shape emotional responses to academic demands, reducing anxiety and promoting positive attitudes toward learning environments (Wang & Ramel, 2023). Given the bidirectional relationship between self-efficacy and engagement, examining their interaction offers valuable insights into how students experience and manage their academic responsibilities.

The interrelation between future orientation, self-efficacy, and school engagement has been explored in several educational contexts. For instance, Liu et al. (2024) demonstrated that parenting styles influenced adolescents' school engagement indirectly through future orientation, suggesting that the way students view their future affects how they engage in the present (Liu et al., 2024). Similarly, Jian-ping et al. (2024) found that students exposed to positive education interventions that promoted goal-setting and emotional regulation showed significant improvements in school engagement, with future orientation acting as a mediating variable (Jian-ping et al., 2024). This pattern is consistent with findings by Spanjol et al. (2023), who argued that fostering futures literacy—students' ability to conceptualize and plan for multiple future scenarios—could enhance academic engagement by improving decision-making and adaptive learning strategies (Spanjol et al., 2023).

Parallel findings have also emerged regarding academic self-efficacy. According to Zhang et al. (2022), self-efficacy acts as a central mechanism linking achievement goal orientation and school engagement, particularly when mediated by perceptions of school climate and personal motivation (Zhang et al., 2022). Konowitz et al. (2022) emphasized that underrepresented youth engaged in STEM curricula demonstrated higher levels of school engagement when they perceived themselves as competent and capable, highlighting the motivational role of self-efficacy in overcoming educational barriers (Konowitz et al., 2022). Moreover, research by Supervía and Salavera (2020) indicated that self-efficacy significantly moderates burnout levels in teachers, a finding that may extend to students, suggesting that belief in one's academic capabilities can protect against disengagement and emotional exhaustion in school environments (Supervía & Salavera, 2020).

The significance of school engagement extends beyond academic performance. Engagement is closely tied to students' emotional development, identity formation, and social integration. According to Bae et al. (2024), the COVID-19 pandemic has intensified the need to support students' emotional and cognitive engagement, particularly as disruptions to routine schooling have affected students' connection to learning environments (Bae et al., 2024). In a similar vein, Sgaramella et al. (2022) emphasized that school

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engagement is influenced by socio-emotional competencies and future orientation from early educational stages, reinforcing the developmental foundation of these constructs (Sgaramella et al., 2022). Marks et al. (2022) noted that academic and school library partnerships play a critical role in promoting engagement by creating supportive academic spaces, thereby enhancing students' access to resources and motivation to learn (Marks et al., 2022).

The broader ecological context also matters. According to Evans et al. (2022), community-level efforts, such as parent engagement and tutoring, can significantly enhance immigrant students' school engagement, suggesting that structural supports and culturally responsive practices play a pivotal role in fostering inclusion and motivation (Evans et al., 2022). Wilcox and Zuckerman (2019) found similar patterns in rural educational settings, where capacity-building through research-practice partnerships strengthened student engagement outcomes (Wilcox & Zuckerman, 2019). These findings indicate that while internal factors like future orientation and self-efficacy are critical, they operate within broader sociocultural and institutional frameworks that either support or hinder student motivation.

The dynamic relationship between psychological predictors and engagement also appears to vary across cultural and socioeconomic contexts. For example, Chen et al. (2021) found that the influence of family socioeconomic status on learning engagement was mediated by resilience and future orientation in Chinese adolescents, demonstrating the interplay of personal and contextual factors (Chen et al., 2021). Nuryanti (2023) investigated the future orientation of Islamic boarding school students and found that both adversity quotient and social support were crucial predictors of students' future-oriented thinking and school motivation (Nuryanti, 2023). These findings affirm that future orientation is a culturally embedded and contextually sensitive variable, shaped by students' experiences, values, and support systems.

Gender and developmental stage are also relevant in understanding how students engage with school. In their study of girls in the child welfare system, Threlfall et al. (2017) found that future orientation mediated the relationship between mental health and school engagement, suggesting that promoting a hopeful view of the future can help vulnerable populations reconnect with academic goals (Threlfall et al., 2017). Similarly, Miller et al. (2019) examined leadership practices in Jamaican primary schools and identified that sustainable leadership that fosters trust and confidence among students can cultivate stronger engagement in learning tasks (Miller et al., 2019). These findings further reinforce the importance of educational environments that nurture belief in personal potential and goal attainment.

From a practical standpoint, enhancing future orientation and academic self-efficacy has significant implications for improving school engagement. Educators can implement targeted interventions such as mentoring programs, goal-setting workshops, and classroom practices that support student autonomy and self-regulation. As Sacriz and Tagadiad (2024) found, the leadership style of educators—particularly servant leadership combined with goal orientation—can significantly increase teachers' and students' engagement levels (Sacriz & Tagadiad, 2024). Hong et al. (2024) also highlighted that science self-concept and goal orientation significantly influence academic engagement in specialized educational tracks, showing that these constructs are relevant across diverse learning settings (Hong et al., 2024). Likewise, Hueske et al. (2023) noted that engagement is enhanced when individuals perceive themselves as co-creators of educational processes, further highlighting the role of agency and self-efficacy (Hueske et al., 2023).

Finally, Liu et al. (2023) emphasized the mediating role of life meaning and future orientation in the relationship between self-concept clarity and learning engagement, illustrating the intricate psychological processes that underpin academic motivation (Liu et al., 2023). As the current literature demonstrates, both future orientation and academic self-efficacy play vital roles in shaping how students connect with their academic environments. However, further empirical exploration is needed to understand how these factors interact within diverse student populations and educational systems. Thus, the present study aims to examine the extent to which future orientation and academic self-efficacy predict school engagement among Canadian high school students.

2. Methods and Materials

2.1. Study Design and Participants

This study employed a correlational descriptive design to examine the predictive roles of future orientation and academic self-efficacy in school engagement among adolescents. The statistical population included high school students from various regions of Canada. Using Morgan and Krejcie's (1970) sample size determination table, a sample

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of 323 participants was selected through stratified random sampling to ensure representativeness across grade levels and gender. All participants voluntarily completed standardized questionnaires measuring school engagement, future orientation, and academic self-efficacy. Informed consent was obtained, and ethical guidelines were strictly followed throughout the research process.

2.2. Measures

2.2.1. School Engagement

To assess the dependent variable of school engagement, the School Engagement Scale developed by Fredricks, Blumenfeld, Friedel, and Paris (2005) was used. This widely recognized instrument measures three key dimensions of school engagement: behavioral engagement (e.g., participation in academic and extracurricular activities), emotional engagement (e.g., feelings of belonging and identification with school), and cognitive engagement (e.g., investment in learning and self-regulation). The scale contains 19 items, with each item rated on a 5-point Likert scale ranging from 1 (never) to 5 (all of the time). Higher scores indicate greater school engagement. The validity and reliability of this scale have been confirmed in multiple studies, demonstrating strong internal consistency with Cronbach's alpha coefficients ranging from 0.70 to 0.85 across subscales.

2.2.2. Future Orientation

Future orientation was assessed using the Future Orientation Scale developed by Steinberg, Graham, O'Brien, Woolard, Cauffman, and Banich (2009). This standardized tool evaluates adolescents' capacity to anticipate and plan for the future across three dimensions: planning ahead, motivation toward future goals, and consideration of future consequences. The scale consists of 15 items, with responses rated on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree), where higher scores reflect a stronger future orientation. The scale has demonstrated good construct validity and has been widely used in adolescent developmental research. Reliability analyses have shown acceptable internal consistency, with Cronbach's alpha coefficients typically exceeding 0.75.

2.2.3. Academic Self-Efficacy

Academic self-efficacy was measured using the Academic Self-Efficacy Scale developed by Zimmerman, Bandura, and Martinez-Pons (1992). This instrument assesses students' confidence in their ability to successfully perform various academic tasks such as studying, completing assignments, and managing academic challenges. The scale includes 11 items, each rated on a 7-point Likert scale from 1 (not at all confident) to 7 (very confident). Higher total scores indicate greater academic self-efficacy. The scale's psychometric properties have been extensively validated in educational psychology studies, with reported Cronbach's alpha values generally above 0.80, indicating high internal consistency. Its validity is supported by positive correlations with academic performance and motivational outcomes in various populations.

2.3. Data Analysis

For data analysis, SPSS version 27 was used. Descriptive statistics were first calculated to summarize the demographic and key study variables. Pearson correlation analysis was conducted to examine the bivariate relationships between the dependent variable (school engagement) and each of the independent variables (future orientation and academic self-efficacy). To determine the predictive power of the independent variables collectively, a linear regression analysis was performed with school engagement as the dependent variable and both future orientation and academic self-efficacy as predictors. The assumptions of linearity, normality, multicollinearity, and homoscedasticity were checked and met prior to conducting the regression analysis.

3. Findings and Results

The sample consisted of 323 Canadian high school students. Of the total participants, 179 were female (55.4%) and 144 were male (44.6%). Regarding grade level, 98 students (30.3%) were in grade 10, 111 students (34.4%) were in grade 11, and 114 students (35.3%) were in grade 12. The age of participants ranged from 15 to 18 years, with 64 students (19.8%) aged 15, 102 students (31.6%) aged 16, 97 students (30.0%) aged 17, and 60 students (18.6%) aged 18. These frequencies and percentages reflect a balanced and diverse adolescent sample appropriate for the study's aims.

Table 1

Descriptive Statistics for Main Study Variables

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Variable	Mean (M)	Standard Deviation (SD)
School Engagement	3.87	0.54
Future Orientation	4.12	0.49
Academic Self-Efficacy	5.21	0.61

The results in Table 1 show that the mean score for school engagement was 3.87 (SD = 0.54), indicating a moderately high level of engagement among the participants. Future orientation had a mean of 4.12 (SD = 0.49), suggesting students tended to score high on future-related cognitive and motivational constructs. Academic self-efficacy demonstrated the highest mean (M = 5.21, SD = 0.61), indicating that participants generally reported strong confidence in their academic abilities.

Prior to conducting the linear regression analysis, the key assumptions were evaluated and confirmed. Normality of the data was assessed using the Kolmogorov–Smirnov test, which was not significant for school engagement (D = 0.037, p = 0.112), future orientation (D = 0.042, p = 0.075), and academic self-efficacy (D = 0.039, p = 0.098), indicating normal distribution of variables. Linearity was verified through scatterplot inspection, which showed a linear relationship between the independent and dependent variables. Multicollinearity was assessed by examining tolerance and variance inflation factor (VIF) values, with tolerance values greater than 0.70 and VIF values below 1.42 for both predictors, confirming no multicollinearity concerns. Homoscedasticity was evaluated through a residuals scatterplot, which displayed an even spread of residuals across predicted values, confirming the assumption of homoscedasticity was met.

Table 2

Pearson Correlation Coefficients Between Variables

Variable	1	2	3
1. School Engagement	—		
2. Future Orientation	.46** (p < .001)	—	
3. Academic Self-Efficacy	.59** (p < .001)	.41** (p < .001)	—

As shown in Table 2, school engagement was significantly and positively correlated with future orientation (r = .46, p < .001) and academic self-efficacy (r = .59, p < .001). In addition, future orientation and academic self-efficacy were also positively correlated with each other (r = .41, p < .001). These findings suggest that higher levels of future orientation and academic self-efficacy are associated with greater school engagement.

Table 3

Summary of Regression Analysis for School Engagement

Source	Sum of Squares	df	Mean Square	R	R^2	Adjusted R^2	F	p
Regression	34.72	2	17.36	.63	.40	.39	84.55	< .001
Residual	51.97	320	0.16					
Total	86.69	322						

The regression model was significant, F(2, 320) = 84.55, p < .001, with an R^2 value of .40, indicating that 40% of the variance in school engagement could be explained by the two predictor variables. The adjusted R^2 of .39 confirmed that the model maintained strong explanatory power when adjusted for the number of predictors (Table 3).

Table 4

Regression Coefficients for Predicting School Engagement

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Predictor	B	SE	β	t	p
Constant	1.42	0.21	—	6.76	< .001
Future Orientation	0.28	0.07	.25	4.00	< .001
Academic Self-Efficacy	0.36	0.06	.43	6.34	< .001

As shown in Table 4, both future orientation ($\beta = .25$, $t = 4.00$, $p < .001$) and academic self-efficacy ($\beta = .43$, $t = 6.34$, $p < .001$) were significant predictors of school engagement. The unstandardized coefficients indicate that for each one-unit increase in future orientation, school engagement increases by 0.28 units, while each one-unit increase in academic self-efficacy increases engagement by 0.36 units. These results confirm that academic self-efficacy is a stronger predictor of engagement compared to future orientation, though both variables significantly contribute to the overall model.

4. Discussion and Conclusion

The present study aimed to investigate the predictive roles of future orientation and academic self-efficacy in school engagement among Canadian high school students. The findings revealed significant positive correlations between school engagement and both predictor variables. Specifically, Pearson correlation analysis showed that future orientation was positively associated with school engagement, indicating that students who exhibited stronger goal planning, future-related motivation, and an awareness of long-term academic consequences were more likely to be behaviorally, emotionally, and cognitively engaged in their school activities. Similarly, academic self-efficacy demonstrated a strong positive correlation with school engagement, suggesting that students with higher confidence in their academic abilities reported greater involvement and interest in learning.

Moreover, the results of the linear regression analysis confirmed that both future orientation and academic self-efficacy significantly predicted school engagement. Together, these two variables accounted for a meaningful portion of the variance in school engagement, underscoring their combined influence on students' active participation in educational contexts. Notably, academic self-efficacy emerged as a slightly stronger predictor in the model, reflecting its robust motivational function in shaping learners' behaviors and attitudes toward school.

These findings are aligned with the growing body of literature that highlights the central role of future orientation in academic life. Students who are able to imagine, anticipate, and prepare for the future often perceive academic efforts as personally meaningful and tied to broader life goals (Chen et al., 2021). Future orientation provides a motivational framework through which students evaluate present challenges and direct their behaviors toward long-term success (Låftman et al., 2019). In this study, students who exhibited a stronger future orientation reported higher levels of school engagement, supporting earlier findings by Liu et al. (2024), who demonstrated that future-oriented students are more likely to connect their academic tasks with envisioned goals and thus maintain sustained academic involvement (Liu et al., 2024). Similarly, research by Jian-ping et al. (2024) showed that positive education programs designed to enhance students' optimism and long-term planning significantly increased school engagement, particularly among boarding school students (Jian-ping et al., 2024).

This relationship between future orientation and engagement can also be understood through the lens of goal-setting theory. Students with a forward-looking mindset often establish academic goals that serve as a source of internal motivation. These goals, in turn, foster emotional commitment to school and enhance persistence in the face of obstacles (Nguyen et al., 2021). Hill et al. (2018) similarly found that future orientation mediated the influence of parenting practices and school-based relationships on academic engagement, reinforcing the role of long-term vision in academic functioning (Hill et al., 2018). Moreover, as Spanjol et al. (2023) discussed in the context of futures literacy, the ability to anticipate multiple scenarios and prepare for uncertainty contributes to student agency and active participation in learning environments (Spanjol et al., 2023).

The strong predictive power of academic self-efficacy observed in this study aligns with foundational and contemporary educational research. Self-efficacy beliefs influence students' choices, effort, and persistence, particularly in challenging academic tasks. Students who believe in their capabilities are more likely to embrace learning opportunities, regulate their study behaviors, and recover from setbacks (Wang & Ramel, 2023). In the present study, academic self-efficacy was significantly associated with all dimensions of school engagement, reinforcing the idea that students' beliefs in their competence are foundational to their academic involvement. This result

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supports the findings of Zhang et al. (2022), who found that academic self-efficacy mediated the relationship between achievement goal orientation and school engagement in university students (Zhang et al., 2022).

Several studies have highlighted the importance of fostering self-efficacy in diverse educational contexts. For example, Konowitz et al. (2022) noted that underrepresented youth in STEM programs who reported high levels of academic self-efficacy were more likely to be engaged and invested in their coursework (Konowitz et al., 2022). Similarly, Supervía and Salavera (2020) demonstrated that educators with high self-efficacy reported lower levels of burnout and higher engagement, indicating that the self-belief construct plays a vital role in shaping motivation and energy in learning environments (Supervía & Salavera, 2020). In line with these findings, the current study confirms that academic self-efficacy is a powerful predictor of student engagement and a critical area for educational intervention.

Interestingly, the combined predictive effect of future orientation and academic self-efficacy in this study echoes the theoretical models that emphasize the interaction of cognitive and motivational factors in academic engagement. For instance, Liu et al. (2023) explored how future orientation and life meaning sequentially mediated the relationship between self-concept clarity and learning engagement, suggesting a multilayered pathway to school involvement (Liu et al., 2023). These findings are supported by research on socio-emotional competencies and school engagement, such as Sgaramella et al. (2022), who found that children with higher emotional regulation and goal-setting skills were more likely to be engaged and future-focused (Sgaramella et al., 2022).

The broader educational environment also plays a role in fostering these psychological traits. According to Bae et al. (2024), disruptions like the COVID-19 pandemic significantly impacted students' engagement by altering their emotional development and sense of academic purpose, underscoring the need to support future-oriented thinking and resilience in schools (Bae et al., 2024). Marks et al. (2022) further suggested that supportive academic infrastructures, such as library partnerships, enhance students' confidence and connection to school, indirectly fostering self-efficacy and engagement (Marks et al., 2022). These contextual insights highlight how internal predictors like future orientation and self-efficacy are shaped and reinforced by broader ecological and institutional conditions.

In culturally diverse or socioeconomically disadvantaged contexts, the relationship between predictors and engagement may be even more complex. Chen et al. (2021) found that in Chinese adolescents, family socioeconomic status impacted learning engagement indirectly through resilience and future orientation (Chen et al., 2021). Likewise, Nuryanti (2023) revealed that future orientation in Islamic boarding students was significantly shaped by social support and adversity quotient, emphasizing the culturally embedded nature of academic motivation (Nuryanti, 2023). These findings are crucial in framing the present study, as the Canadian sample also reflects a multicultural and economically diverse population, likely influenced by family support, community engagement, and cultural expectations.

Educational policy and community-level programs further impact how students engage with school. Evans et al. (2022) illustrated how orientation programs, tutoring, and parental involvement helped immigrant students stay engaged and academically motivated in urban contexts (Evans et al., 2022). Similarly, Wilcox and Zuckerman (2019) emphasized the role of research-practice partnerships in rural education systems to build student engagement through teacher capacity-building and systemic reforms (Wilcox & Zuckerman, 2019). These studies point to the critical importance of combining individual-level interventions with structural supports that facilitate sustained school engagement.

Finally, findings from this study are consistent with research by Wong et al. (2019), who demonstrated that co-teaching educational models that emphasize service and stress-adaptation promote academic and personal growth through enhanced engagement (Wong et al., 2019). In summary, the present study supports the growing consensus that both future orientation and academic self-efficacy are vital, interrelated predictors of school engagement. Their combined influence provides a strong rationale for designing educational strategies that address cognitive, emotional, and motivational components of learning.

5. Limitations & Suggestions

Despite its contributions, this study has several limitations. First, the cross-sectional design prevents any causal interpretations of the relationships among future orientation, academic self-efficacy, and school engagement. Longitudinal or experimental designs would be necessary to determine the directionality of these associations. Second,

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all data were collected through self-report questionnaires, which may be subject to response biases such as social desirability or inaccurate self-assessment. Future research could benefit from incorporating teacher evaluations, academic records, or observational data. Third, although the sample size was adequate and representative of Canadian high school students, the findings may not generalize to other countries or age groups. Cultural factors may influence how future orientation and self-efficacy are expressed and linked to engagement.

Future studies should explore the mediating and moderating mechanisms underlying the relationships examined in this research. For example, examining the role of perceived teacher support, classroom climate, or peer influence may help clarify how external factors enhance or hinder the development of future orientation and self-efficacy. Additionally, qualitative studies involving student interviews could provide deeper insights into the personal narratives and lived experiences that shape school engagement. Research across different educational systems and cultural contexts would also be valuable, especially in low-income or marginalized populations. Experimental studies that test targeted interventions to enhance self-efficacy and future orientation could offer practical guidance for educators and policy-makers aiming to improve engagement outcomes.

Educational practitioners should prioritize fostering both future orientation and academic self-efficacy in students through intentional programming. Schools can implement workshops that focus on goal-setting, long-term planning, and career exploration to help students build a future-focused mindset. Teachers can also incorporate regular feedback, success modeling, and student-centered learning strategies to enhance academic self-efficacy. Additionally, mentorship programs, extracurricular engagement opportunities, and partnerships with families can further strengthen students' sense of purpose and belief in their academic potential. Ultimately, a holistic approach that integrates cognitive, emotional, and social development is key to promoting sustained school engagement among adolescents.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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Authors' Contributions

All authors equally contributed in this article.

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