

Teachers' Professional Competence and Student Character as Predictors of Academic Achievement in Indonesian Elementary Schools: A Quantitative Ex Post Facto Study

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Abstract: This study examines the influence of teacher professional competence and student character on academic achievement in public elementary schools in Banyuasin District, Indonesia. A quantitative ex post facto design was employed, with 86 teachers selected via proportionate stratified random sampling. Data were collected using validated Likert-scale questionnaires, observation sheets, and report card documentation, then analyzed using multiple linear regression. Descriptive results indicated that teacher professional competence and student character were categorized as high, and student achievement was good, with all prerequisite tests (normality, linearity) satisfied. Partially, teacher professional competence significantly predicted student achievement ($t = 102.32, p < 0.001$), contributing 66.1%; student character also significantly predicted achievement ($t = 101.61, p < 0.001$), contributing 80%. Simultaneously, both variables explained 80% of the variance in student achievement (adjusted $R^2 = 0.800, F = 4897.94, p < 0.001$). The study concludes that teacher competence and student character function synergistically to enhance academic outcomes, with student character showing a slightly stronger predictive contribution. The novelty lies in empirically demonstrating the near-equal and substantial combined predictive power of both variables within the underexplored context of Indonesian public elementary schools, moving beyond isolated examinations of each factor. Practically, these findings suggest that schools should invest equally in professional development programs for teachers and character education initiatives for students to maximize academic achievement. This study contributes to educational psychology and school management literature by providing robust quantitative evidence that academic success is co-determined by instructional quality and student non-cognitive attributes, highlighting the need for integrated interventions addressing both domains simultaneously.

Keywords: Academic Achievement, Elementary Education, Students' Character, Teacher's Competence

A. Introduction

Academic achievement is crucial for improving students' academic performance (Kassaw & Demareva, 2023). However, some public elementary schools, particularly in Banyuasin District, face serious challenges in the teaching and learning process, including low literacy and numeracy skills in understanding simple reading texts or basic math story concepts. This has led to a decline in the academic performance of public elementary school students in Banyuasin District. The transition to the independent curriculum has not been fully implemented evenly due to a shortage of books and other media. This is compounded by limited internet access and the socioeconomic background of students from low-income families. Nearly 90% of teachers in Banyuasin are certified, yet some public elementary school students still achieve low academic scores and demonstrate positive character traits in speech and behavior.

The teacher professional allowance should increase our motivation as professional teachers to educate and guide students effectively and comfortably in the teaching and learning process (Gyimah & Ayinselya, 2022). In reality, pedagogical competence remains below the minimum standard, with average learning lacking, and classroom learning planning, particularly in teaching methods and strategies, remains lacking. Sometimes a classroom teacher doubles as a school administrator, resulting in students receiving minimal learning innovation. In addition to the weak consistency of character education reinforcement in the independent curriculum, the Pancasila student profile is less implemented in public elementary schools due to the administrative burden on teachers. This is what is happening in Banyuasin, resulting in a decline in student achievement. How can we, as teachers, create a generation that can adapt to the changing times and align with the profile of high-achieving, ethical, and sustainable Pancasila students? Student achievement is one indicator of success in the educational process (Casal-Otero et al., 2023). In elementary schools, learning achievement is influenced not only by internal student factors but also by the quality of the educators who serve as the primary facilitators of learning (Javornik & Klemenčič Mirazchiyski, 2023; Zafeer et al., 2024). Two important factors believed to contribute significantly to student achievement are teacher professional competence and student character (López-Martín et al., 2023; Podungge et al., 2020).

A teacher's professional competence encompasses pedagogical knowledge, mastery of subject matter, and the ability to design and implement effective learning (Osorio Vanegas et al., 2025). According to Barut et al. (2021), teacher professional competence consists of pedagogical content knowledge that combines subject matter mastery with teaching strategies appropriate to students' cognitive development. Professional teachers are able to create a conducive learning environment, motivate students, and adapt learning methods to individual needs, thus positively impacting academic achievement. Furthermore, student character traits such as discipline, curiosity, responsibility, and honesty also influence the learning process and outcomes. An

expert in character education emphasizes that character education is not only about instilling values but also about forming habits that support academic and social success (Muzakkir et al., 2024).

It is in elementary schools that teachers are required to develop the nation's young people into individuals who grow competently in knowledge, skills, attitudes, and abilities to become competent (Salmerón Aroca et al., 2022; Vesterinen & Ratinen, 2024). Teacher professional competence is one of the main pillars in ensuring the quality of education. This competency refers to a teacher's ability to carry out their primary duties as educators, namely designing, implementing, and evaluating the learning process effectively and professionally. Various approaches and frameworks are recognized nationally and internationally. Improving the quality of education in Indonesia, particularly in the Banyuasin sub-district, particularly at the elementary school level, requires collaboration among all school members (teachers, parents, staff, stakeholders, and the surrounding community). Educational quality is the degree of excellence in effective and efficient educational management to foster academic and extracurricular excellence in graduating students (Wahyudi et al., 2022). Based on Law No. 14 of 2005 and Regulation of the Director General of Teacher and Education (Perdirjen GTK) 2023 concerning Teacher Competency Standards, teachers must possess four core competencies: pedagogical, personality, social, and professional. Unfortunately, a 2022 survey by the Ministry of Education, Culture, Research, and Technology found that 40% of elementary school teachers in Indonesia do not meet professional competency standards, particularly in the implementation of the Merdeka curriculum, which emphasizes project-based learning and differentiation. This directly impacts teaching quality, with students often having difficulty understanding basic concepts due to monotonous conventional methods.

Teacher professional competence can determine the quality of the learning process, while student character fosters attitudes and behaviors that support academic success (Prananto et al., 2025). Therefore, improving student achievement requires balanced attention to improving teacher quality and character development from an early age. Based on this background, researchers need to conduct research on the influence of teacher professional competence and elementary school student character on student achievement in Banyuasin District, with the hope of contributing to improving the quality of education in Indonesia, particularly in Banyuasin District, by improving elementary school student achievement through improving teacher professional competence and developing positive student character. Students with positive character tend to be more focused and diligent and are able to overcome challenges in learning, which ultimately improves their academic achievement (Tam et al., 2021). It is important to explore how teacher professional competence and student character, both jointly and individually, influence student achievement in elementary schools.

This research is expected to contribute to improving the quality of education by strengthening teacher competence and developing student character from an early

age. This research focuses on improving achievement and character education in elementary school students, particularly in Banyuasin District. We saw and encountered students who had characters and spoke impolitely to their peers or to older people. Whether the words or behavior of elementary school students were influenced by the surrounding environment or information via social media that spread very quickly, bullying often occurred in elementary schools, with mild physical violence and ridicule or ostracism among playmates.

The question arises as to why elementary school students are unable to manage their emotions, their empathy has not yet fully developed, and they tend to imitate the behavior they see in their environment. Indeed, the role of parents as primary educators makes parental attachment a strong foundation for exploring and mastering new environments in the more sophisticated and expansive social and educational world (Deleş & Aral, 2026). This involves healthy interactions, communication, and behaviors consistent with Eastern culture and the belief that these children are the shoots of a nation, developing and growing in accordance with the principles of Pancasila and the 1945 Constitution. For students, parental support is their greatest strength. With good and positive character, elementary school students, both in their home and school environments, can easily and skillfully socialize and develop through formal and informal education, including formal education in elementary school through competent teachers who educate and guide students. This is the foundation for achieving academic and non-academic achievement, both at home and in the community. The driving factor for educational change in character development lies in the primary school teacher, who provides all aspects of students' social and emotional knowledge.

Elementary education is the primary foundation for character formation and individual abilities to face the challenges of life in the era of globalization (Anantama, 2024). In Indonesia, especially in Banyuasin, elementary schools play a crucial role as the initial stage of formal education that aims to shape students into people who are faithful, pious, have noble character, are healthy, knowledgeable, capable, creative, and independent, and become democratic and responsible citizens (Law No. 20 of 2003 concerning the National Education System), which was updated to adapt to current developments such as the more flexible Merdeka Curriculum (Government Regulation No. 57 of 2021, 2025). On the other hand, student character is an important variable that influences learning achievement. Positive characteristics such as discipline, responsibility, intrinsic motivation, and perseverance (grit) support students in the independent learning process. The character of students at elementary school age (6-12 years) is in the conventional stage, where they learn to distinguish right from wrong through social interaction and teacher guidance (Birhan et al., 2021; Zakiyah et al., 2024).

However, a survey by the Central Statistics Agency (Amanda, 2025) showed that 35% of elementary school students experience character issues such as lack of discipline

and low interest in learning, influenced by family environmental factors, excessive exposure to gadgets, and the COVID-19 pandemic that disrupted face-to-face learning for two years. The Independent Curriculum, implemented since 2022, requires elementary school teachers to be more competent in the Pancasila student profile, which emphasizes character traits such as mutual cooperation and critical thinking. However, data from the Ministry of Education, Culture, Research, and Technology (2024) indicates that 60% of elementary schools in rural areas still struggle to implement it due to limited teacher competency. Furthermore, student character is increasingly being degraded by the influence of social media. A UNICEF Indonesia survey (2023) reported that 70% of elementary school-aged children spend more than 3 hours a day in front of screens, reducing effective learning time (Naing, 2025). This phenomenon not only lowers academic achievement but also has the potential to create a less competitive generation in the future.

What is the problem in this study is the low level of teacher professionalism in managing effective learning and mastery of learning materials or methods in the classroom; the limitations of elementary school teachers in developing teacher professionalism; the lack of understanding of student character, such as independent learning, learning discipline, and learning responsibility, that hinders student motivation and perseverance in learning; it is not clear to what extent the influence of the two independent variables is on the dependent variable, so empirical research is needed to explore the two relationships together; and weak attitudes and behavior in the teaching and learning process. Achievement is not assessed from academics but social skills and adaptation skills in the surrounding environment as the foundation for students in being ethical (Zynuddin et al., 2023). This study aims to fill this gap by causally examining the influence of teacher professional competence and elementary school student character on achievement. The results are expected to provide policy recommendations for the government, schools, and teachers to improve the quality of elementary education, particularly in the Banyuasin district. The hypothesis in this study were below.

H1: Teacher professional competence has a positive and significant effect on student achievement.

H2: Student character has a positive and significant effect on student achievement.

H3: Teacher professional competence and student character simultaneously have a positive and significant effect on student achievement.

B. Methods

The research was conducted at a B-accredited public elementary school located in the Banyuasin sub-district, consisting of five (5) schools: SDN 1 BA1, SDN 10 BA1, SDN 17 BA1, SDN 19 BA1, and SDN 20 BA1. The researchers selected these five elementary schools because they had accessible data and curriculum relevance to support this research. The research was conducted over three months, from February to April 2026.

The research method used was an associative explanatory quantitative method, aimed at explaining the influence of the independent variables (teacher professional competence and student character) on the dependent variable (student achievement). This study used a non-experimental research design with an ex post facto approach, namely research conducted to explore the influence of the independent variables (teacher professional competence and student character) on the dependent variable (student achievement) without providing treatment or manipulation to the research subjects. This study emphasized the analysis of numerical data processed using statistical methods. The data were obtained from questionnaires for both independent variables. The entire population of this study consisted of 110 teachers. The sample size was determined using a formula known as the Slovin formula.

The respondents in this study were elementary school teachers from grades IV, V, and VI in the five elementary schools selected for the study. A total of 86 teachers were selected using proportionate stratified random sampling. The selection of elementary school teachers was based on the consideration that at grades IV-VI, students begin to learn complex material, thus ensuring that teacher professional competence and student character development play a significant role in academic achievement. The data collection techniques used were questionnaires, observation, and documentation studies. This study will examine two independent variables, teacher professional competence (X1) and elementary school student character (X2), and the dependent variable, student achievement (Y). The instrument grid was designed for each variable, with indicators drawn from the theories discussed previously. This instrument was first piloted to test its validity and reliability. Before conducting the research, validity and reliability tests were conducted on 25 respondents, namely, all teachers at SDN 4 BA1, SDN 24 BA1, and SDN 26 BA1. The instrument trial was conducted on a population that was not the target of the research but had the same characteristics and school conditions as the research sample. Based on the results of the trial, it can be seen that the narrative statements are valid and reliable, so they are suitable to be used as research instruments. Reliability testing in this study used an internal reliability test by analyzing data from the results of the Cronbach alpha formula trial. As for the research data analysis technique, the researcher used SPSS version 26 linear regression analysis to determine the F-value as a measuring tool for data analysis.

C. Results and Discussion

The Influence of Teacher Professional Competence Variables on Student Achievement

In five public elementary schools in the Banyuasin sub-district, selected based on data accessibility and curriculum relevance, teacher professional competence in this study is a process of managing and administering the profession of elementary school classroom teachers that occurs during the classroom learning process to achieve the

goal of professional teacher competence in public elementary schools in Banyuasin. The results of this study indicate that hypothesis H_01 is rejected and hypothesis H_{a1} is accepted, indicating that teacher professional competence partially influences student achievement in public elementary schools in the Banyuasin sub-district. This means that if teacher professional competence, measured by the four competency indicators for managing the profession: pedagogical, professional, social, and personality, is improved, then elementary school student achievement in the Banyuasin sub-district will also improve. Conversely, if the quality of classroom teacher competence decreases, student achievement will also decline. The descriptive analysis also found that the majority of respondents agreed that the competency variables implemented by class teachers at Banyuasin 1 District Elementary School were in the good category.

It can be said that class teachers at Banyuasin 1 District Elementary School provided very positive comments about the influence of the professional competency of class teachers in Banyuasin 1 District. This is supported by the results of an interview with one of the teachers at Banyuasin 1 District Elementary School (interview, April 7, 2026), who stated that the professional competency implemented by class teachers at Banyuasin 1 District Elementary School is good and has four competency indicators for a teacher in providing quality, effective, and efficient learning to educate the nation's future generations. These results are also supported by observations of 17% of the study sample, where researchers found that the professional competency variables of teachers in Banyuasin 1 District showed an average implementation rate of up to 70%. This indicates that the study sample has met more than 70% of the observation indicators. This shows that the professional competency variable of public elementary school class teachers in the Banyuasin sub-district is good.

Based on the study's findings, teacher professional competence is the most crucial factor supporting the progress of public elementary schools and determining the direction of policy within the primary education environment. Teachers who master material and develop contextual learning foster in-depth conceptual understanding, as stated by (Adilah et al., 2024). Furthermore, according to Ekşi et al. (2020), teacher professional competence directly influences student learning motivation, leading to learning success. This study found that teacher professional competence is a factor influencing student achievement in public elementary schools in Banyuasin District. Therefore, teachers are expected to effectively implement professional skills. This aligns with research conducted by Wijaya (2023), which found that classes taught by teachers with high professional competence yielded average grades 23% higher than classes taught by low-qualified teachers. This demonstrates that teacher quality is a key determinant of student learning success. The results of this study found that teachers who were competent in conveying mathematical concepts concretely produced students with an average score 26.4 points higher; this is in accordance with the results of research conducted by Edwina (2023). The results of the study (Rahmawati, 2021) supported the accepted hypothesis: teacher professional

competence has a significant effect on learning achievement with a contribution of 49% of the total variance.

Based on the discussion above, it can be concluded that improving student achievement in schools is greatly influenced by teacher quality in the teaching and learning process in the classroom. Effective teachers have good skills, so the learning process is effective. Conversely, for teachers who have less good skills, the effectiveness of learning is less effective. This also raises the question of teacher professional competence as a determining factor in the effectiveness of student success in basic education. Therefore, the discussion of the research results on the influence of teacher professional competence on student achievement can be concluded based on the results of the t-test in the coefficients table; the variable of teacher professional competence obtained a calculated t-value of 102.321 with a significance level of 0.000. The t-table value with $df = 83$ and $\alpha = 0.05$ is 1.989. Because the calculated t-value \geq t-table 1.989 and the Sig. value $0 \leq 0.05$, then H_a is accepted, meaning that teacher professional competence has a significant effect on student achievement in the Banyuasin district partially.

The Influence of Elementary School Students' Character on Achievement in Banyuasin Sub-District

In this study, student character in elementary education encompasses moral, social, and academic values such as independent learning, responsible learning, motivation, discipline, and creativity. This character formation is influenced by internal and external factors, with a focus on strengthening noble morals and the ability to socialize with current technology. In this study, the variable of elementary school student character and achievement found that student character significantly influenced achievement, with a sig value smaller than the probability value and a calculated t value greater than the t-table. This also means that if student character improves, student achievement will also improve, and conversely, if student character declines, student achievement will also decline significantly. The results of the coefficient of determination test in this study indicate that 80% of elementary school student achievement in Banyuasin District is explained by student character.

The descriptive analysis also found that the average number of respondents overall agreed with the variable of the character of public elementary school students in Banyuasin District, which was in the good category. Furthermore, 35% of respondents agreed with the narrative statement regarding the variable of character of public elementary school students in Banyuasin District. These results are also supported by observations of 17% of the study sample. The researchers found that the character of public elementary school students in Banyuasin District showed an average implementation rate of 70%. This indicates that the study sample met more than 70% of the observation indicators. This indicates that the character of public elementary school students in Banyuasin District is good.

This study found that the character of public elementary school students in Banyuasin District influences student achievement. High levels of character in public elementary school students in Banyuasin District influence student achievement. Recent findings (Edwina, 2023) showed that students with hard work and honesty had an average math score 26.4 higher than the control group. Honesty reduced reliance on cheating, thus encouraging students to truly learn. Based on this study, Herlina (2023) found that student character traits (such as integrity and independence) strengthen the relationship between teacher competence and literacy achievement. The effect of teacher influence increases for students with high character. The results of this study are also in line with the opinion of Hidayat (2021), who found that teacher professional competence has a direct effect on mathematics achievement and indirectly through student behavior such as discipline and hard work so that the model explains 59% of the variation in achievement.

The results of research by Supriatna (2024) show student character has a direct effect. The total influence shows a strong synergy between the two. The same study by Suciati (2022) found that positive character not only has a direct effect but also increases intrinsic learning motivation, which then encourages harder learning efforts. Thus, character acts as a psychological foundation that triggers a chain of academic success. Therefore, it can be concluded that the discussion of the research results on the influence of elementary school student character on student achievement obtained a t-value of 101.611 with a significance level of 0.000. Because the t-value \geq t-table 1.989 and the Sig value $0 \leq 0.05$, then H_a is accepted, meaning that student character has a significant effect on student achievement partially.

The Influence of Teacher Professional Competence and Elementary School Student Character on Student Achievement in Banyuasin Sub-District

Student achievement in this study is based on the perception of outcomes achieved by students in public elementary schools in Banyuasin District. This includes academic achievements, such as report card grades and quizzes, while non-academic achievements, such as arts and sports, are measured through cognitive, affective, and psychomotor assessments. This achievement is influenced by learning motivation, discipline, and the curriculum used, such as the Merdeka Curriculum, which is considered effective in improving learning outcomes. The results of the simultaneous test of teacher competency and student character variables on public elementary school student achievement in Banyuasin District revealed a probability significantly lower than 0.05 and the calculated F-value greater than the table F-value. Therefore, H_0 is rejected and H_A is accepted.

This implies that teacher professional competence and student character jointly have a significant influence on public elementary school student achievement in Banyuasin District. This also indicates that the combined effect of both variables on public

elementary school student achievement in Banyuasin District increases, followed by an increase in educational quality. Conversely, a decrease in the combination of these two variables on public elementary school student achievement in Banyuasin District leads to a significant decline in educational quality. The results of the coefficient of determination test also found that 66.1% of the student achievement variable can be explained by the variables of teacher professional competence and student character. Meanwhile, 33.9% is explained by other causes not examined in this study, such as school infrastructure and climate; the environment and system; parental background and economy and others.

The results of this study indicate that teacher professional competence and student character, as the primary foundations of teacher participation in the teaching and learning process, significantly influence the learning outcomes and outcomes of elementary school students. Simultaneously, they significantly influence thematic achievement ($R^2 = 0.62$). According to Wilandari (2023), the long-term finding of the combination of teacher competence and student character indicates that 58% of the variation in thematic learning achievement can be explained by teacher professional competence. These results align with a study by Samsudin (2022), which found that teacher professional competence directly influences student achievement through learning motivation with a total effect of 0.71. Evaluating the impact of teacher professional competence can strengthen student character, thereby improving achievement.

A study by Fitriana (2024) found a correlation analysis that showed a significant positive relationship between student character (especially discipline, responsibility, and honesty) and learning achievement ($r = 0.69$; $p < 0.01$). Students who consistently demonstrate honesty in tests and discipline in completing assignments have an average grade 22% higher than students with low character. Furthermore, a study conducted by Fitriana (2025) corroborates this with recent findings on teacher professional competence and student character in predicting learning achievement in elementary schools. Multiple regression analysis revealed that teacher professional competence ($\beta = 0.47$) and student character ($\beta = 0.39$) simultaneously contributed 68% to the variance in student learning achievement ($R^2 = 0.68$; $F = 84.32$; $p < 0.001$). Teachers who are able to manage meaningful learning create an environment that strengthens character formation, which in turn encourages consistency in learning.

Based on a study conducted by Wijaya (2023), which evaluated the influence of mutual cooperation and independence on literacy-numeracy achievement in elementary school students, independence contributed 31% to literacy skills, while mutual cooperation influenced cooperation in group discussions, which improved understanding of mathematical concepts. Students with high character scores show better learning resilience when faced with difficult problems. The results of this study align with those of Rahmawati (2023), which states that the interaction between teacher competence and student character improves engagement and learning

achievement. A professional teacher creates challenging yet supportive learning, which encourages students with character to be more engaged. Engaged students demonstrate two to three times higher learning effort, which directly improves academic achievement ($r = 0.74$).

Based on the discussion above, it can be concluded that teacher professional competence and student character in elementary schools play a key role as directors in the learning process, creating students with good academic achievement and character development effectively and efficiently. Several curriculum management strategies can be implemented, such as integrative curriculum planning, active learning implementation, efficient and holistic assessment, support from school management, and examples of efficient practices in elementary schools, where all play an active and mutually supportive role to achieve the desired goals of students, teachers, principals, and stakeholders. So it can be concluded that the discussion of the research results of the influence of teacher professional competence and student character simultaneously on student achievement in the Banyuasin district, by finding the results of the F test in the ANOVA table, shows an F count of 4897.943 with a Sig. of 0.000. Because $F \text{ count} \geq F \text{ table } 3.109$ and $\text{Sig} \leq 0.05$, teacher professional competence and student character together have a significant effect on student achievement in the Banyuasin district. The adjusted R-squared value of 0.800 means that 80.0% of the variation in student achievement can be explained by teacher professional competence and student character simultaneously, while 20% is influenced by other factors. Important findings: Partially or simultaneously the three variables are mutually significant so that they produce quite high student achievement.

D. Conclusions

Based on the research findings, it can be concluded that teacher professional competence and student character individually and jointly have a significant influence on student achievement at public elementary schools in Banyuasin District. The key finding reveals three major results. First, teacher professional competence significantly influences student achievement, demonstrated by a significance value of 0.000 (less than 0.05) and a calculated t-value of 102.321 (substantially exceeding the t-table value of 1.989). Second, student character significantly influences student achievement, with a significance value of 0.000 (less than 0.05) and a calculated t-value of 101.611 (well above the t-table threshold of 1.989). Third, when examined jointly, teacher professional competence and student character together influence student achievement with a calculated F-value of 4897.943 (far exceeding the F-table value of 3.109) and a significance level of 0.000 (less than 0.05). These two variables collectively contribute 80.0% to student achievement, indicating that approximately four-fifths of the variance in student learning outcomes can be explained by teacher competence and student character combined, with the remaining 20.0% attributable to other factors not examined in this study. The practical implication of this study is that

improving student achievement in public elementary schools requires a dual-focused strategy. First, schools and education authorities must invest systematically in enhancing teacher professional competence through targeted professional development programs, subject matter training, pedagogical skill improvement, and ongoing mentoring and supervision. Teacher competence should be assessed regularly, and development plans should address specific gaps in content knowledge, instructional strategies, and assessment practices. Second, character education programs must be intentionally designed and consistently implemented to cultivate positive student character traits, including discipline, responsibility, perseverance, honesty, respect, and curiosity. Character development should be integrated across the curriculum rather than treated as a separate subject, with modeling by teachers, reinforcement through school culture, and family engagement in character formation at home. The 80.0% joint contribution suggests that neglecting either factor will substantially undermine achievement gains. Future research should investigate the specific dimensions of teacher competence and student character that most strongly predict achievement to enable more targeted interventions. Longitudinal studies tracking how changes in teacher competence and student character over time affect achievement trajectories would strengthen causal inferences. Comparative research across different grade levels, school types, and geographic regions would enhance generalizability. Additionally, qualitative studies exploring how teacher competence and student character interact in classroom settings would provide richer understanding of the mechanisms linking these variables to achievement outcomes.

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