



Perceived Teacher-Student Relationship and Reading Performance in Indonesia

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ABSTRACT: Reading literacy remains a major concern in Indonesian secondary education, making it important to identify school-related factors associated with students' reading performance, especially for teacher education and professional development. This study examined the relationship between students' perceived teacher-student relationship and reading performance among Indonesian participants in PISA 2022. Using a quantitative cross-sectional secondary-data design, the study analysed 13,034 Indonesian students with complete data on reading performance, teacher-student relationship, socioeconomic status, gender, and grade level. Reading performance was represented by the ten PISA 2022 reading plausible values, while teacher-student relationship was constructed from student questionnaire items measuring teacher respect, concern, friendliness, interest in students' well-being, and reverse-coded negative relational experiences. The scale showed acceptable internal consistency (Cronbach's alpha = .69; standardized alpha = .71). Survey-weighted linear regression was applied using student final weights, replicate weights, and plausible value procedures. Results indicated a positive association between teacher-student relationship and reading performance. In the adjusted model, a one-point increase in the relationship index was associated with an approximately 14.14-point increase in reading performance, after controlling for socioeconomic status, gender, and grade level. Socioeconomic status and grade level were also positively associated with reading performance, whereas male students scored lower than female students. Overall, the findings suggest that relational competence matters alongside evidence-based reading instruction.

KEYWORDS: reading literacy; teacher-student relationship; PISA 2022; teacher education; professional development; Indonesia

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INTRODUCTION

Reading literacy remains a persistent concern in Indonesian secondary education because it underpins students' capacity to learn across subjects, interpret information critically, and participate in academic and social life. The PISA 2022 results reinforce



the scale of this challenge. Only about one-quarter of Indonesian students reached at least Level 2 proficiency in reading, whereas the OECD average was substantially higher. At this threshold, students are expected to identify the main idea in a text of moderate length, locate information using explicit criteria, and reflect on textual purpose when directed to do so (OECD, 2023, 2024, 2025). The implication is not simply that Indonesian students scored below an international benchmark, but that many 15-year-old learners may still experience difficulty performing reading tasks regarded as necessary for further learning. For teacher education and professional development, this situation raises an important question: which school-related conditions are associated with students' reading performance in the Indonesian PISA context?

The reading problem in Indonesia should not be interpreted only as a matter of individual ability or test performance. Reading achievement is shaped by the instructional, motivational, relational, and socioeconomic conditions in which students learn. PISA-based studies have shown that reading performance is associated with students' engagement, motivation, self-concept, instructional experience, and perceived support from teachers (Gu & Lau, 2023; Ho & Gan, 2023; Ma et al., 2021; Qian & Lau, 2022; Wang & Hu, 2022a). These studies suggest that reading development is partly embedded in students' school experience. In the Indonesian context, where reading outcomes remain comparatively low, examining relational aspects of schooling is therefore relevant. Teacher-student relationships may not directly teach reading comprehension, yet they may shape whether students feel respected, supported, and willing to engage with demanding literacy tasks.

The theoretical basis for this focus lies in the view that learning is socially situated. Self-determination theory argues that relatedness is one of the psychological conditions that supports motivation, engagement, and persistence in learning (Ryan & Deci, 2020). In reading, this is particularly relevant because comprehension develops through sustained attention, repeated practice, strategy use, and willingness to work through complex texts. Students who perceive their teachers as respectful, concerned, and welcoming may be more likely to participate in classroom activities, respond to feedback, and maintain effort during reading tasks. Recent meta-analytic evidence supports this general argument by showing that perceived teacher support is positively associated with student engagement and academic achievement, although the strength of the relationship varies across contexts and outcomes (Tao et al., 2022). The implication for the present study is that teacher relationship should be examined as a

supportive contextual factor, not as a single dominant explanation for reading performance.

Recent research on teacher-student relationships provides further support for this cautious interpretation. Studies have shown that teacher-student relationship quality is associated with academic engagement, well-being, and achievement, but the relationship is not uniform across age groups, educational systems, or measurement approaches (Göktaş & Kaya, 2023; Liu, 2024; Magro et al., 2024; Zhou et al., 2023). Longitudinal and systematic evidence also suggests that positive teacher-student relationships may support school outcomes over time, especially when students experience vulnerability or weak school attachment (Di Lisio et al., 2025). However, this literature does not justify a simple causal claim that better relationships automatically produce higher reading scores. Rather, it indicates that relational quality forms part of the broader school ecology within which academic development occurs.

Reading-specific studies make this distinction especially important. In PISA-based reading research, teacher support tends to be linked with achievement through mediating factors such as reading enjoyment, reading self-concept, emotional engagement, cognitive engagement, and perceived autonomy support (Lyu & Hu, 2025; Ma et al., 2021; Wang & Hu, 2022a). Other studies have shown that instructional quality, teacher feedback, and classroom climate interact with student motivation and engagement in shaping reading outcomes (Hu & Zhang, 2024; Ma et al., 2022; Qiu & Liu, 2024). These findings suggest that the association between teacher relationship and reading performance is likely to be modest when examined directly. This expectation is particularly important for the present study because it uses a deliberately parsimonious model: teacher relationship is examined as a single student-perceived school variable, while reading performance is measured using PISA 2022 reading plausible values.

For Indonesia, the issue has particular significance for teacher education and professional development. Low reading performance is often discussed in relation to curriculum, assessment, learning loss, access to texts, and instructional quality. These are essential concerns, but they do not exhaust the school-level conditions that may matter for literacy development. Teachers also shape the interpersonal climate of learning. Respectful communication, emotional responsiveness, and relational recognition may help create classroom conditions in which students are more willing to engage with reading activities. Nevertheless, such relational competence should not be presented as a direct remedy for Indonesia's reading problem. The more defensible

argument is that positive teacher-student relationships may support the motivational and emotional conditions under which reading instruction becomes more effective.

Despite growing evidence on teacher support and reading achievement, there remains a need for Indonesia-focused analysis using the latest PISA dataset. Much of the recent literature examines PISA 2018, cross-country samples, or complex mediation models. Fewer studies have examined whether Indonesian students' perceived relationships with teachers are directly associated with reading performance in PISA 2022. This gap is important because teacher relationship is a professional dimension that can be discussed within teacher education, classroom management, and professional development, but its empirical association with reading performance in Indonesia should be tested rather than assumed.

This study therefore examines the association between students' perceived teacher relationship and reading performance among Indonesian students participating in PISA 2022. Teacher relationship is operationalised through student reports of teacher respect, teacher concern, and relational welcome. Reading performance is represented by PISA 2022 reading plausible values. The study uses a cross-sectional secondary-data design and does not claim causal inference. Its contribution is deliberately bounded: it tests whether a relational school-context variable is statistically associated with reading performance in the Indonesian PISA 2022 sample and considers what that association may imply for teacher education and professional development. By framing the analysis in this way, the study avoids overstating teacher relationship as a determinant of reading achievement while still recognising its possible relevance within Indonesia's broader literacy challenge.

METHODS

Research Design

This study employed a quantitative cross-sectional secondary-data design. It used the Indonesian sample of the PISA 2022 student dataset to examine the association between students' perceived teacher-student relationship and reading performance. The study did not involve primary data collection because all variables were obtained from the publicly available PISA 2022 database.

The design was appropriate because the study aimed to test whether a relational school-context variable was statistically associated with students' reading performance in the Indonesian PISA 2022 context. Reading performance was treated as the dependent variable, while teacher-student relationship was treated as the main

independent variable. Socioeconomic status, gender, and grade level were included as control variables.

Because PISA 2022 data are observational and cross-sectional, the study does not claim that teacher-student relationship causes higher reading performance. Instead, the study examines whether students who report more positive relationships with teachers also tend to show higher reading performance after selected background variables are taken into account.

Data Source and Sample

This study used secondary data from the Programme for International Student Assessment (PISA) 2022. The analysis focused on the Indonesian student sample from the PISA 2022 student questionnaire dataset. PISA assesses 15-year-old students' knowledge and skills across participating education systems, including reading, mathematics, and science. Because the present study examined reading performance and students' perceived teacher-student relationship, the student questionnaire dataset was used as the main data source.

The original Indonesian sample in the PISA 2022 student dataset consisted of 13,439 students. After selecting students with complete data on reading performance, teacher-student relationship, socioeconomic status, gender, and grade level, the final analytic sample consisted of 13,034 students. The sample included 6,656 female students (51.1%) and 6,378 male students (48.9%). Students were distributed across grade levels 7 to 12, with most students enrolled in grades 9 and 10.

This study used a cross-sectional secondary-data design. Therefore, the findings should be interpreted as statistical associations between students' perceived teacher-student relationship and reading performance, rather than as evidence of causal effects.

Measures

Reading performance

Reading performance was used as the dependent variable. It was measured using the ten reading plausible values provided in the PISA 2022 student dataset, namely PV1READ to PV10READ. These plausible values represent students' estimated reading literacy performance in PISA. In the main analysis, all ten plausible values were analysed and combined rather than using a single reading score.

Teacher-student relationship

Teacher-student relationship was the main independent variable. It was constructed from eight PISA 2022 student questionnaire items in ST267. The items

asked students to report their agreement with statements about the relational quality of teachers at their school. The positive items included whether teachers were respectful towards students, concerned when students were upset, excited to see students again, genuinely interested in students' answers, friendly towards students, and interested in students' well-being. Two negatively worded items asked whether students felt intimidated by teachers and whether teachers were mean towards them. These two items were reverse-coded so that higher scores consistently represented more positive teacher-student relationships.

The response scale ranged from 1 to 4, where higher values indicated more positive perceived teacher-student relationships after reverse coding. The teacher-student relationship index was calculated as the mean of available items for students who answered at least four of the eight items. The scale showed acceptable internal consistency, with Cronbach's alpha of .69 and standardized alpha of .71.

Control variables

Three control variables were included in the adjusted model. Socioeconomic status was measured using the PISA index of economic, social, and cultural status (ESCS). Gender was included as a categorical variable, with female students as the reference category and male students represented by a dummy variable. Grade level was included as a numeric variable to account for differences in students' school grade at the time of assessment.

Data Analysis

Data analysis was conducted using RStudio. The analysis focused on the Indonesian student sample from the PISA 2022 student questionnaire dataset. The data were first filtered using the country code for Indonesia. Variables required for the analysis included reading plausible values, teacher-student relationship items, socioeconomic status, gender, grade level, student final weights, and replicate weights.

Reading performance was measured using the ten PISA 2022 reading plausible values. For descriptive and exploratory analysis, an average reading score was computed from the ten plausible values. However, the main regression analysis used all ten plausible values rather than relying on a single score. This approach was used to better account for the measurement structure of PISA achievement data.

Teacher-student relationship was measured using eight student questionnaire items from ST267. Six items represented positive relational perceptions, including teacher respect, concern, friendliness, interest in students' answers, and interest in student well-being. Two negatively worded items, namely feeling intimidated by

teachers and perceiving teachers as mean, were reverse-coded. The teacher-student relationship index was then computed as the mean of available items, provided that students answered at least four items. Higher scores indicated more positive perceived teacher-student relationships. The scale showed acceptable internal consistency, with Cronbach's alpha of .69 and standardized alpha of .71.

The final analytic sample consisted of students with complete data on reading performance, teacher-student relationship, socioeconomic status, gender, and grade level. Descriptive statistics were calculated for reading performance, teacher-student relationship, socioeconomic status, and grade level. Gender distribution was also examined.

The main analysis used survey-weighted linear regression. Two models were estimated. Model 1 examined the bivariate association between teacher-student relationship and reading performance. Model 2 added socioeconomic status, gender, and grade level as control variables. To account for the complex sampling design of PISA, the regression analysis incorporated student final weights and replicate weights. The ten reading plausible values were analysed separately and then combined using multiple-imputation combining rules. Because the study used cross-sectional secondary data, the analysis examined statistical associations and did not make causal claims.

RESULTS AND DISCUSSION

Results

The final analytic sample consisted of 13,034 Indonesian students who had complete data on reading performance, teacher-student relationship, socioeconomic status, gender, and grade level. As shown in Table 1, the mean reading performance score was 374.29 (SD = 72.40). The teacher-student relationship index had a mean of 3.06 (SD = 0.43) on a four-point scale, indicating that students generally reported relatively positive relationships with their teachers. The mean socioeconomic status index was -1.45 (SD = 1.05), while the mean grade level was 9.52 (SD = 0.66). The gender distribution was relatively balanced, with 6,656 female students (51.1%) and 6,378 male students (48.9%).

Table 1. Descriptive characteristics of the analytic sample

| Variable | N / n | Mean / % | SD | Min | Max |
|------------------------------|--------------|-----------------|-----------|------------|------------|
| Reading performance | 13,034 | 374.29 | 72.37 | 50.28 | 650.94 |
| Teacher-student relationship | 13,034 | 3.06 | 0.43 | 1.00 | 4.00 |
| Socioeconomic status | 13,034 | -1.45 | 1.05 | -6.35 | 3.97 |
| Grade | 13,034 | 9.52 | 0.66 | 7.00 | 12.00 |
| Female | 6,656 | 51.1% | - | - | - |
| Male | 6,378 | 48.9% | - | - | - |

Note. N = 13,034. Reading performance was calculated from the average of the ten reading plausible values for descriptive purposes. Teacher-student relationship was measured on a four-point scale, with higher scores indicating more positive perceived teacher-student relationships. Female students served as the reference category in the regression model.

The teacher-student relationship scale showed acceptable internal consistency. The reliability analysis produced a Cronbach's alpha of .69 and a standardized alpha of .71. This suggests that the selected ST267 items provided a moderately reliable measure of students' perceived teacher-student relationship in the Indonesian PISA 2022 sample.

The main regression analysis was conducted using the ten reading plausible values, student final weights, and replicate weights. The results are presented in Table 2. In the bivariate model, teacher-student relationship was positively associated with reading performance ($B = 13.59$, $SE = 3.13$, 95% CI [7.37, 19.80]). This indicates that students reporting more positive relationships with teachers tended to have higher reading performance.

The adjusted model included socioeconomic status, gender, and grade level as control variables. In this model, teacher-student relationship remained positively associated with reading performance ($B = 14.14$, $SE = 2.91$, 95% CI [8.34, 19.94]). Socioeconomic status was also positively associated with reading performance ($B = 17.27$, $SE = 1.63$, 95% CI [14.06, 20.48]). Male students had lower reading performance than female students ($B = -23.46$, $SE = 2.88$, 95% CI [-29.11, -17.80]). Grade level was positively associated with reading performance ($B = 20.88$, $SE = 3.03$, 95% CI [14.93, 26.83]).

Table 2. Survey-weighted regression results for teacher-student relationship and reading performance

| Model | Predictor | B | SE | 95% CI |
|--|------------------------------|--------|------|------------------|
| Model 1: PV survey-weighted bivariate | Teacher-student relationship | 13.59 | 3.13 | [7.37, 19.80] |
| Model 2: PV survey-weighted adjusted | Teacher-student relationship | 14.14 | 2.91 | [8.34, 19.94] |
| Model 2: PV survey-weighted adjusted | Socioeconomic status | 17.27 | 1.63 | [14.06, 20.48] |
| Model 2: PV survey-weighted adjusted | Male | -23.46 | 2.88 | [-29.11, -17.80] |
| Model 2: PV survey-weighted adjusted | Grade | 20.88 | 3.03 | [14.93, 26.83] |

Note. B = unstandardized regression coefficient; SE = standard error; CI = confidence interval. The analysis used ten reading plausible values, student final weights, and replicate weights. Female students served as the reference category for gender. Model 1 presents the bivariate association between teacher-student relationship and reading performance. Model 2 adjusts for socioeconomic status, gender, and grade level.

The findings, overall, show that students' perceived teacher-student relationship was positively associated with reading performance among Indonesian students in PISA 2022. However, the results should be interpreted as evidence of statistical association rather than causal effect because the study used cross-sectional secondary data.

Discussion

Teacher-Student Relationship and Reading Performance

This study found that students' perceived teacher-student relationship was positively associated with reading performance among Indonesian students in PISA 2022. After accounting for socioeconomic status, gender, grade level, sampling weights, replicate weights, and the ten reading plausible values, a one-point increase in the teacher-student relationship index was associated with an approximately 14-point increase in reading performance. This finding suggests that students who perceived their teachers as respectful, concerned, friendly, interested in students' well-being, and less intimidating tended to demonstrate higher reading performance.

This result is theoretically meaningful because reading literacy is not merely a cognitive outcome but also a socially situated learning process. From the perspective of self-determination theory, students' motivation and engagement are supported when their basic psychological needs, including relatedness, are fulfilled (Ryan & Deci, 2020). In classroom contexts, relatedness is shaped partly by whether students feel respected, recognized, and supported by their teachers. Reading comprehension requires sustained

attention, persistence, self-regulation, and willingness to work through complex texts. Therefore, positive teacher-student relationships may help create emotional and motivational conditions that make students more willing to participate in reading activities, respond to feedback, and persist when reading tasks are difficult.

The finding is consistent with previous research showing that teacher-related variables are associated with reading achievement through motivational and engagement-related pathways. Ma et al. (2021) found that perceived teacher support was related to reading achievement through reading self-concept and reading enjoyment. Wang and Hu (2022b) showed that teacher autonomy support was associated with reading achievement through students' appraisals and reading-related emotions. Lyu and Hu (2025) further demonstrated that teacher support was linked to reading performance through emotional and cognitive engagement. These studies suggest that teacher-student relationship may not operate as a direct instructional mechanism, but as a relational condition that supports the motivational and emotional processes underlying reading engagement.

The present finding also corresponds with PISA-based studies emphasizing the role of classroom and instructional conditions in reading outcomes. Ho and Gan (2023) found that instructional practices were related to reading performance across high-performing PISA regions, while Qian and Lau (2022) showed that perceived reading instruction, disciplinary climate, adaptive instruction, and teacher stimulation were associated with reading performance. Qiu and Liu (2024) also found that reading engagement mediated the relationship between instructional quality and reading achievement. In this sense, the present study extends prior reading research by showing that a general relational school-context variable, namely students' perceived teacher-student relationship, is also empirically relevant to reading performance in the Indonesian PISA 2022 sample.

Control Variables and the Broader Ecology of Reading Literacy

Although teacher-student relationship was positively associated with reading performance, the finding should not be overstated. Reading performance is shaped by multiple factors, including socioeconomic background, gender, grade level, home literacy environment, access to reading materials, instructional quality, motivation, and school climate. In the adjusted model, socioeconomic status was positively associated with reading performance, male students showed lower reading performance than female students, and grade level was positively associated with reading performance. These results indicate that teacher-student relationship is one relevant factor within a

broader ecology of literacy development, not a single dominant explanation for reading achievement.

The positive association between socioeconomic status and reading performance confirms the importance of equity in Indonesian reading literacy. Students from more advantaged backgrounds may have greater access to books, digital resources, literacy-rich home environments, and academic support. Indonesian studies have similarly shown that reading literacy is related to socioeconomic background, reading interest, and literacy opportunities (Nurgiyantoro et al., 2020; Sultan et al., 2020). In this context, supportive teacher-student relationships may be particularly important for students whose literacy resources outside school are limited. However, relational support cannot eliminate structural inequality by itself. It should be combined with broader efforts to improve access to reading materials, strengthen literacy instruction, and support students from disadvantaged backgrounds.

The gender finding also deserves attention. Male students had lower reading performance than female students after socioeconomic status, grade level, and teacher-student relationship were controlled. This pattern is consistent with Indonesian and international evidence showing gender differences in reading literacy (Sari & Setiawan, 2023). However, the result should not be interpreted as a fixed deficit among male students. Rather, it suggests that reading instruction and classroom engagement strategies may need to be sensitive to differences in reading habits, motivation, confidence, and students' relationships with literacy practices. Teachers may need to provide varied reading materials, supportive feedback, and classroom activities that encourage both male and female students to engage meaningfully with texts.

Grade level was also positively associated with reading performance. This is expected because students in higher grades may have more schooling experience and greater exposure to academic texts. However, the presence of Indonesian PISA participants across grades 7 to 12 also confirms the importance of controlling grade level in the analysis. Without this control, differences in reading performance might partly reflect differences in schooling exposure rather than the association between teacher-student relationship and reading performance. Therefore, the adjusted model provides a more defensible estimate of the relationship between the main independent variable and reading performance.

Taken together, these findings support a cautious interpretation. Teacher-student relationship matters, but it matters within a complex literacy ecology. It should be understood as a supportive school-context factor that may strengthen students'

willingness to engage with reading tasks, not as a substitute for systematic reading instruction, adequate learning resources, and broader educational equity. This interpretation is aligned with Indonesian literacy studies emphasizing that reading development depends on school literacy practices, literacy culture, and institutional support, not only individual student ability or teacher behaviour (Fauzan et al., 2023; Kartikasari & Nuryasana, 2022; Nurgiyantoro et al., 2020).

Implications, Limitations, and Future Research

The findings have implications for teacher education and professional development in Indonesia. Teacher preparation programs should not treat reading instruction only as a technical matter of curriculum delivery, text selection, comprehension strategies, and assessment. These elements remain essential, but the present findings suggest that teacher education should also develop relational competence. Relational competence includes respectful communication, emotional responsiveness, constructive feedback, sensitivity to students' well-being, and the ability to create psychologically safe classroom environments. Borremans et al. (2024) argued that relationship-building competence should be addressed explicitly in initial teacher education. This argument is relevant to Indonesia because literacy improvement requires not only stronger instructional design but also classroom relationships that support students' engagement and persistence.

For teacher professional development, the findings suggest that relational aspects of teaching should be integrated with evidence-based literacy instruction. Professional development programs may help teachers design reading activities that are cognitively demanding but emotionally supportive. Teachers need strategies to encourage participation, respond constructively to students' difficulties, reduce intimidation, and build a classroom climate where students feel safe to ask questions and take interpretive risks. This implication is consistent with research showing that teacher support is associated with student engagement and academic achievement (Tao et al., 2022; Zhou et al., 2023), as well as reading studies showing that engagement mediates the relationship between teacher-related factors and reading performance (Lyu & Hu, 2025; Qiu & Liu, 2024).

However, relational competence should not be framed as a direct remedy for Indonesia's reading literacy problem. The results do not justify the claim that improving teacher-student relationships alone will substantially raise reading performance. Instead, teacher-student relationship should be positioned as a supportive professional capacity that may strengthen the conditions under which reading instruction becomes

more effective. Reading literacy improvement still requires systematic instruction in comprehension strategies, vocabulary development, text-based discussion, access to appropriate texts, school literacy programs, assessment practices, and support for disadvantaged students.

This study has several limitations. First, it used cross-sectional PISA 2022 data, so the findings cannot establish causality. It is possible that positive teacher-student relationships support reading performance, but it is also possible that higher-performing students perceive their teachers more positively, or that both are shaped by unobserved classroom and school conditions. Second, teacher-student relationship was measured through student self-report items, which may reflect general school experience rather than the specific relationship with reading teachers. Third, although the analysis used plausible values, student final weights, and replicate weights, the model was deliberately parsimonious and did not include possible mediators such as reading enjoyment, reading self-concept, sense of belonging, motivation, or engagement. Fourth, the study used a constructed teacher-student relationship index from available ST267 items because the official RELATST index was not available for the Indonesian sample in the working dataset. Although the constructed scale showed acceptable internal consistency, future studies should further examine the psychometric structure of these items in the Indonesian context.

Future research should examine the mechanisms that may explain the association between teacher-student relationship and reading performance. Mediation models could test whether reading enjoyment, reading self-concept, emotional engagement, cognitive engagement, or sense of belonging explains the relationship. Multilevel models could distinguish student-level and school-level variation, especially because teacher-student relationship may operate both as an individual perception and as part of broader school climate. Comparative studies could also examine whether the association found in Indonesia is similar to or different from other education systems. Finally, mixed-methods research could explore how Indonesian students interpret teacher respect, concern, friendliness, and intimidation in actual classroom reading practices.

Overall, this study shows that students' perceived teacher-student relationship is positively associated with reading performance in the Indonesian PISA 2022 sample. The finding contributes to teacher education and professional development literature by demonstrating that relational aspects of teaching are empirically relevant to reading outcomes. At the same time, the study emphasizes the need for careful interpretation.

Teacher-student relationship should be understood not as a causal determinant or standalone solution, but as a meaningful school-context factor within the broader ecology of literacy development in Indonesia.

CONCLUSION

This study examined the association between students' perceived teacher-student relationship and reading performance among Indonesian students using PISA 2022 data. The findings show that teacher-student relationship was positively associated with reading performance. This association remained evident after controlling for socioeconomic status, gender, and grade level and after accounting for PISA sampling weights, replicate weights, and reading plausible values. Students who reported more positive relationships with teachers tended to show higher reading performance.

The study concludes that teacher-student relationship is a relevant school-context factor in understanding reading performance in Indonesia. However, this finding should not be interpreted as evidence that teacher-student relationship directly causes higher reading performance. Because the study used cross-sectional secondary data, the results indicate statistical association rather than causal effect. Reading performance is shaped by multiple factors, including socioeconomic background, instructional quality, access to reading materials, student motivation, school climate, and broader educational conditions. Therefore, teacher-student relationship should be understood as one part of the wider ecology of literacy development, not as a standalone explanation for Indonesia's reading literacy challenges.

RECOMMENDATION

For teacher education, the findings suggest the importance of preparing prospective teachers not only in subject knowledge and instructional strategies but also in relational competence. Teacher education programs should help prospective teachers develop respectful communication, emotional responsiveness, constructive feedback practices, and awareness of students' well-being. These capacities may support classroom conditions that encourage students to participate, persist, and engage more actively with reading tasks.

For teacher professional development, relational aspects of teaching should be integrated into training related to classroom management, literacy instruction, and student engagement. Professional development programs may include reflective practice, student-centered communication, strategies for building supportive classroom

climates, and approaches to responding to students' academic and emotional needs. However, these efforts should be combined with stronger reading instruction, access to appropriate texts, and evidence-based literacy practices.

For future research, further studies should examine the mechanisms through which teacher-student relationship is associated with reading performance. Possible mediating variables include reading enjoyment, reading self-concept, sense of belonging, motivation, and engagement. Future studies could also use multilevel analysis to examine student-level and school-level variation or compare Indonesia with other education systems. Because the present study used cross-sectional secondary data, longitudinal or mixed-methods research would be useful to better understand how relational experiences in school are connected to students' literacy development over time.

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Author Contributions Statement

| Name of Author | C | M | So | Va | Fo | I | R | D | O | E | Vi | Su | P | Fu |
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Conflict of Interest Statement

The authors declare no conflict of interest.

Informed Consent

Informed consent was not applicable to this study.

Ethical Approval

Not Applicable

Data Availability

Data availability is not applicable to this study as no new data were created or analysed.

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