



Principal Leadership, Teacher Training, and Inclusive Facilities as Predictors of Inclusive Education Quality in Inclusive Senior High Schools in Pekanbaru, Indonesia

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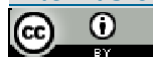
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ABSTRACT

This study analyses the influence of principal leadership, teacher training, and inclusive facilities on the quality of inclusive education in senior high schools implementing inclusive programmes in Pekanbaru, Indonesia. A quantitative approach with a correlational ex post facto design was employed. The sample comprised 105 teachers from two inclusive senior high schools selected through proportional stratified random sampling. The results show that principal leadership, teacher training, and inclusive facilities jointly exert a significant influence on the quality of inclusive education ($R = 0.763$, $R^2 = 0.582$, $F = 46.807$, $p < .001$). Partially, principal leadership ($\beta = 0.771$, $p < .001$) and inclusive facilities ($\beta = 0.218$, $p = .002$) have positive, significant effects, whereas teacher training ($\beta = -0.139$, $p = .248$) does not show a statistically significant effect when entered into the model alongside the other predictors. These findings highlight that strengthening inclusive education quality at senior high school level requires inclusion-oriented principal leadership and adequate inclusive facilities, accompanied by a redesign of teacher training that is more contextual, practice-based, and sustained investment in disability-friendly facilities, and need-based teacher professional development linked directly to supervision, professional learning communities, and ongoing monitoring of inclusive classroom practice.

INTRODUCTION

Inclusive education is widely recognised as a manifestation of children's rights to quality education without discrimination, including for learners with special educational needs in regular schools. Indonesian policy, such as Ministerial Regulation No. 70/2009 on Inclusive Education, mandates schools to open access for diverse learners so that equity and quality become strategic priorities in the national system (Novrizal & Manaf, 2024). Recent policy-oriented studies underline that inclusive education contributes to social justice, community cohesion, and citizenship formation (Somad et al., 2024; Sholihah, 2024). At senior secondary level, demands become more complex because schools must integrate academic curricula, support services, and learning environments that respect diversity. Consequently, strengthening the quality of inclusive education is crucial so that expanded access for all students is matched by robust assurances of learning quality across schools.

Although inclusive education has been widely promoted, evidence from Indonesia indicates that practice remains far from the ideal. Systematic reviews reveal that research has largely concentrated on early childhood and primary education, while studies at upper secondary level remain limited (Rante et al., 2020). Analyses of inclusive education management further highlight gaps between policy, school-level management practices, and learners' actual experiences (Setiawan, 2025). Other work stresses that implementation quality is shaped by the readiness of human resources, school culture, and sustained quality assurance mechanisms (Basit, 2025). In this context, more empirical evidence is needed on the quality of inclusive education in senior high schools designated as inclusive providers, particularly in urban settings such as Pekanbaru.

A consistent theme in the literature is that school leadership is a key determinant of successful inclusive education. Principals are expected to articulate an inclusive vision, nurture a collaborative culture, and ensure that school policies are oriented towards all learners (Tanzi, 2024). Studies evaluating leadership in inclusive schools show that leadership styles that manage diversity, foster effective communication, and promote reflective teaching are associated with more effective learning for students with special educational needs (Damri, 2023). Case studies also demonstrate that principals who proactively build partnerships with parents, communities, and specialist services can strengthen the sustainability of inclusive programmes (Setia, 2021). These insights suggest that inclusion-oriented principal leadership is likely to be strongly related to perceived quality of inclusive education at senior high school level.

Teachers are the main implementers of inclusive practices in classrooms and interact directly with diverse learning needs. Recent work emphasises that teachers require robust pedagogical, social, and personal competences to manage heterogeneous classes and to design differentiated instruction (Nilangsari, 2025). Research on inclusive teacher training shows that structured professional development programmes can improve teachers' knowledge, attitudes, and skills for supporting learners with special educational needs (Rasmitadila et al., 2023). However, training effectiveness is often constrained by limited duration,

weak post-training mentoring, and insufficient alignment between training content and classroom realities (Wibowo & Rahayu, 2020). Thus, the quality and relevance of teacher training programmes remain important dimensions that may explain school-level variation in inclusive education quality.

Strengthening teacher competences for inclusive education cannot rely on one-off training; instead, it requires continuous professional learning. Studies on teacher pedagogical competence in inclusive settings report that teachers continue to face challenges in lesson adaptation, alternative assessment, and individual support, even after training (Mumpuniarti et al., 2020). Other research shows that school-based in-house training and teacher learning communities can enhance teachers' capacity to prepare adaptive teaching materials for students with special educational needs (Siska et al., 2025). A scientometric analysis of teacher competence literature also points to growing attention to inclusive and digital dimensions, signalling the urgency of capability-building in the twenty-first century (Adriana & Sasongko, 2025). Consequently, teacher training should be understood as a systematic and measurable capacity-building process rather than an administrative activity.

The quality of inclusive education is also strongly influenced by the availability and management of inclusive facilities and infrastructure. Studies of facilities in inclusive schools show that many still lack adequate physical accessibility, such as ramps, resource rooms, and assistive learning media (Simorangkir et al., 2021). Research on managing facilities in inclusive schools highlights the importance of planning, monitoring, and continuous evaluation to ensure that resources function effectively for all learners (Santi et al., 2025). Architectural studies indicate that learning spaces and circulation areas designed according to inclusive design principles can enhance comfort and participation for students with disabilities (Bahari et al., 2023). This evidence suggests that sufficient and well-managed inclusive facilities in senior high schools are likely to shape students' learning experiences, sense of safety, and meaningful participation.

Several studies underline that facilities, teaching processes, and learning outcomes in inclusive education are mutually reinforcing. In inclusive early childhood settings, the availability of appropriate facilities has been linked to teachers' successful implementation of adaptive teaching strategies (Azzahra et al., 2022). An integrative model for improving inclusive education quality based on digital literacy, achievement culture, and teacher motivation shows that structural and cultural factors must be combined to produce high-quality inclusive services (Listyowati et al., 2025). A systematic review of students' perspectives on inclusive education further reveals that learners judge inclusion quality from a combination of teacher support, classroom climate, and access to supporting facilities (Rini & Azizah, 2024). Against this backdrop, the present study simultaneously examines principal leadership, teacher training, and inclusive facilities as predictors of inclusive education quality in inclusive senior high schools in Pekanbaru.

METHOD

Research Design

This study employed a quantitative approach with a survey method and correlational ex post facto design. The design was selected to examine the influence of three independent variables – principal leadership (X_1), teacher training (X_2), and inclusive facilities (X_3) – on the dependent variable, namely the quality of inclusive education (Y) at senior high school level. No experimental manipulation was conducted; all variables were measured as they naturally occurred in the school context. Causal relationships were analysed using multiple linear regression in order to determine the relative contribution of each predictor to inclusive education quality, both simultaneously and partially.

Research Setting and Time

The research was conducted in two inclusive senior high schools in Pekanbaru City, namely SMA Negeri 4 Pekanbaru and SMA Swasta Cendana Pekanbaru. These schools were purposively selected because they have been officially designated as inclusive providers and represent variation between public and private institutions in an urban area. Data collection took place in the first semester of the 2025/2026 academic year (September–November 2025), when teaching and learning activities were running in a relatively stable manner, allowing effective coordination with school management and teachers.

Population and Sample

The population comprised all teachers at SMA Negeri 4 and SMA Swasta Cendana Pekanbaru who were involved in delivering instruction to both regular students and students with special educational needs. The sample consisted of 105 teachers: 70 from SMA Negeri 4 and 35 from SMA Swasta Cendana. A proportional stratified random sampling technique was applied, whereby teachers were randomly selected within each school according to its share of the total population. This approach was intended to ensure that the sample reflected the distribution of teachers across schools so that findings could be generalised more credibly to inclusive senior high schools in Pekanbaru.

Variables and Operational Definitions

Four measured variables were included. The first independent variable, principal leadership (X_1), is defined as the principal's capacity to formulate an inclusive vision and policies, conduct differentiated instructional supervision, facilitate collaboration among inclusion teams, parents and partners, manage resources, and provide ongoing monitoring and feedback. The second independent variable, teacher training (X_2), refers to the quality of professional development received by teachers, including the relevance of content to their needs, the intensity of sessions, the diversity of methods (workshops, coaching, lesson study), post-training support, and evidence of changes in teaching practice. The third independent variable, inclusive facilities (X_3), captures the extent to which the school's physical environment adopts principles of equal access, perceptible information, low physical effort, and sufficient space for approach and use for all students. The dependent variable, inclusive education quality (Y), reflects the degree to which standards of inclusive practice are

realised in school policies, culture, teaching and learning processes, and student outcomes at both school and classroom levels.

Instruments and Data Collection Procedures

Data were collected using a structured, closed-ended questionnaire with a five-point Likert scale: Strongly Agree (5), Agree (4), Uncertain (3), Disagree (2), and Strongly Disagree (1). In total, 64 items were developed and distributed equally across the four variables (16 items per variable). The principal leadership instrument was developed with reference to the Full Range Leadership model (Bass & Avolio, 1994), covering ethical role-modelling, inspirational motivation, intellectual stimulation, and individual consideration. The teacher training instrument was based on Kolb's (1984) experiential learning cycle, with indicators of concrete experience, structured reflection, abstract conceptualisation, and active experimentation. The inclusive facilities instrument drew on Universal Design principles (Connell et al., 1997), such as equitable use, perceptible information, low physical effort, and adequate space. The inclusive education quality instrument was adapted from the Index for Inclusion (Booth & Ainscow, 2011), focusing on welcoming school cultures, accommodating policies, differentiated classroom practices, and collaboration with families and external services.

Questionnaires were distributed to teachers through coordination with school management. Teachers completed the instrument individually outside core teaching hours to minimise disruption to lessons and to allow thoughtful responses.

A summary of variables and instrument structure is presented in Table 1.

Table 1. Summary of research variables and instrument structure

Variable	Code	Main dimensions (indicators)	Number of items	Scale
Principal leadership	X ₁	Ethical role-modelling; inspirational motivation; intellectual stimulation; individual consideration	16	5-point Likert
Teacher training	X ₂	Concrete experience; structured reflection; abstract conceptualisation; active experimentation	16	5-point Likert
Inclusive facilities	X ₃	Equitable access; perceptible information; low physical effort; adequate space	16	5-point Likert
Inclusive education quality	Y	Welcoming culture; accommodating policies; differentiated teaching; collaborative support	16	5-point Likert

Validity and Reliability

Prior to main data collection, the instrument was piloted with 30 senior high school teachers outside the two study schools to assess linguistic clarity and item feasibility. Construct validity was then tested using Pearson Product-Moment correlations between each item and its respective total scale score (total score minus the item) based on the full sample of 105 respondents. With $N = 105$ and $df = 103$, the critical r -value at the 5% significance level (two-tailed) is

approximately 0.192. Items with item–total correlations ≥ 0.192 were retained. All items on X_1 , X_2 , X_3 , and Y met this criterion and were therefore retained for further analysis.

Internal consistency reliability was estimated using Cronbach’s alpha, with $\alpha \geq 0.70$ considered acceptable. All four scales produced alpha coefficients above 0.90, indicating very high reliability and satisfactory internal consistency for use in multiple regression analysis.

Data Analysis

Data analysis was conducted in several stages using the Statistical Package for the Social Sciences (SPSS) version 25.0. Initial steps included data cleaning, coding, and database construction. Descriptive statistics were then generated to summarise central tendency (mean, median, mode), dispersion (standard deviation, variance, range), and frequency distributions for each variable.

Prior to hypothesis testing, assumptions of multiple linear regression were examined, including normality of residuals (Kolmogorov–Smirnov test), multicollinearity (tolerance values and variance inflation factor, VIF), and heteroscedasticity (Breusch–Pagan test of residuals).

Subsequently, multiple linear regression was performed with inclusive education quality (Y) regressed on principal leadership (X_1), teacher training (X_2), and inclusive facilities (X_3). The analysis produced unstandardised and standardised regression coefficients, an F-test to evaluate the joint influence of the predictors, t-tests to assess their partial effects, and the coefficient of determination (R^2) to indicate the proportion of variance in Y explained by the model. Statistical significance was evaluated at $\alpha = .05$.

RESULTS

Descriptive Statistics

All 105 teachers completed the questionnaire in full. Scores for each variable were computed as total scale scores. Table 2 summarises the descriptive statistics.

Table 2. Descriptive statistics of research variables

Variable	N	Min	Max	Sum	Mean	Std. dev.
Principal leadership (X_1)	105	24.00	80.00	7,064.00	67.28	10.63
Teacher training (X_2)	105	26.00	80.00	6,589.00	62.75	13.01
Inclusive facilities (X_3)	105	22.00	80.00	6,067.00	57.78	18.59
Inclusive education quality (Y)	105	25.00	80.00	7,113.00	67.74	11.71

Levels of the Variables

To interpret the achievement level of each variable, total scores were compared with the criterium score (number of items \times number of respondents \times maximum score). With 16 items per scale, 105 respondents, and a maximum score

of 5, the criterium score for each variable is 8,400. Percentage scores were calculated as:

$$\text{Percentage} = \frac{\text{Total score}}{8,400} \times 100\%$$

The percentages are: principal leadership (X_1) 84.10% (7,064/8,400), teacher training (X_2) 78.44% (6,589/8,400), inclusive facilities (X_3) 72.23% (6,067/8,400), and inclusive education quality (Y) 84.68% (7,113/8,400). Using the criteria applied in the thesis, values above 84% are classified as “very high”, while 70–79% are “high”. Table 3 summarises these results.

Table 3. Percentage scores and categories

Variable	Total score	Criterium	Percentage (%)	Category
Principal leadership (X_1)	7,064	8,400	84.10	Very high
Teacher training (X_2)	6,589	8,400	78.44	High
Inclusive facilities (X_3)	6,067	8,400	72.23	High
Inclusive education quality (Y)	7,113	8,400	84.68	Very high

Overall, principal leadership and inclusive education quality are rated very high, while teacher training and inclusive facilities are rated high. This suggests that the foundations for inclusive implementation are strong but further strengthening is needed, particularly in training and facilities.

Assumption Testing

Normality

Normality of regression residuals was examined using the Kolmogorov–Smirnov test.

Table 4. Kolmogorov–Smirnov test for residual normality

Variable	K–S statistic	Sig.
Unstandardised residual	0.117	0.104

The significance value (.104) exceeds .05, indicating that the residuals are normally distributed and the normality assumption is satisfied.

Multicollinearity

Multicollinearity among the independent variables was assessed using tolerance and VIF values.

Table 5. Multicollinearity diagnostics

Predictor	Tolerance	VIF
Principal leadership (X_1)	0.564	1.773
Teacher training (X_2)	0.235	4.247
Inclusive facilities (X_3)	0.334	2.993

All tolerance values are greater than 0.10 and all VIF values are below 10, indicating no serious multicollinearity among the predictors.

Heteroscedasticity

Heteroscedasticity was tested using the Breusch–Pagan test.

Table 6. Breusch-Pagan test of heteroscedasticity

Statistic	Value	df	Sig.
LM	25.961	3	0.000010
F	11.058	3	0.000002

The significance values are far below .05, indicating evidence of heteroscedasticity. As in the thesis, this is acknowledged as a limitation and suggests that future work could apply robust standard errors; the substantive interpretation of regression coefficients is nonetheless presented with caution.

Multiple Regression Model

Model Fit

The overall fit of the multiple regression model is shown in Table 7.

Table 7. Model summary

Model	R	R Square	Adjusted R Square	Std. error of the estimate
1	0.763	0.582	0.569	7.68875

The multiple correlation coefficient (R = 0.763) indicates a strong relationship between the set of predictors and inclusive education quality. The coefficient of determination (R² = 0.582) shows that 58.2% of the variance in inclusive education quality is explained jointly by principal leadership, teacher training, and inclusive facilities, while 41.8% is accounted for by other factors outside the model.

Simultaneous Effect (F-test)

The significance of the combined effect of the three predictors was tested using the F-test.

Table 8. ANOVA for multiple regression

Source	Sum of squares	df	Mean square	F	Sig.
Regression	8,301.259	3	2,767.086	46.807	0.000
Residual	5,970.798	101	59.117		
Total	14,272.057	104			

The F-statistic of 46.807 with p < .001 indicates that principal leadership, teacher training, and inclusive facilities together have a statistically significant effect on inclusive education quality.

Partial Effects (t-tests)

The partial effects of each independent variable are presented in Table 9.

Table 9. Regression coefficients and t-tests

Predictor	B	Std. error	Beta	t	Sig.
Constant	11.985	4.912	-	2.440	0.016
Principal leadership (X ₁)	0.771	0.094	0.700	8.166	0.000
Teacher training (X ₂)	-0.139	0.119	-0.154	-1.163	0.248
Inclusive facilities (X ₃)	0.218	0.070	0.346	3.104	0.002

The regression equation can be written as:

$$\hat{Y} = 11.985 + 0.771X_1 - 0.139X_2 + 0.218X_3.$$

Principal leadership (X₁) has a positive, significant effect on inclusive education quality (t = 8.166, p < .001). Inclusive facilities (X₃) also exert a positive, significant effect (t = 3.104, p = .002). By contrast, teacher training (X₂) shows a

negative, non-significant coefficient ($t = -1.163$, $p = .248$), indicating that, in the presence of the other predictors, teacher training does not contribute significantly to explaining variation in inclusive education quality.

DISCUSSION

The findings show that the quality of inclusive education in inclusive senior high schools in Pekanbaru is rated high to very high, aligning with studies reporting generally positive outcomes of inclusive policy implementation at the secondary level (Nowak, 2024). Within the Indonesian context, the Merdeka Belajar reform similarly stresses equitable access and flexible curricula for learners with special educational needs, providing a structural impetus for schools to strengthen inclusive provision (Nasir, 2025). Earlier work on inclusive education in Indonesia indicates that service quality is strongly influenced by school-level management and resource support (Yusuf & Yeager, 2011). Taken together, the significant F-value and R^2 of 0.582 in this study reinforce the argument that school-based factors are strategic levers for improving inclusive education quality at senior high school level.

The most prominent result is the influence of principal leadership. The standardised coefficient ($\beta = 0.700$) shows that principal leadership is the strongest predictor of inclusive education quality compared with teacher training and inclusive facilities. This pattern is consistent with evidence that instructional and collaborative leadership contributes significantly to inclusive literacy and school readiness for diversity (Feng, 2025). Other studies confirm that effective principals facilitate inclusive policy implementation by organising resources and professional support for teachers (Lambrecht, 2022). In Indonesia, principals' roles in initiating inclusive programmes, building networks, and sustaining inclusive school cultures have been shown to be decisive for programme success (Setia, 2021). The present findings therefore strengthen the view that principal leadership is a primary leverage point for enhancing inclusive education quality at the level of individual schools.

Substantively, the leadership dimensions emerging in this study align with characteristics of inclusive leadership: a justice-oriented vision, willingness to take decisions on curriculum adjustments, and a strong commitment to organising support for teachers and students. Qualitative work has shown that principals who act as instructional leaders and advocates for students with special educational needs can reduce resistance to inclusive practice in schools (Tanzi, 2024). International frameworks such as the School for All - Inclusive School Leadership model call for school leaders to develop mutually reinforcing cultures, policies, and practices (European Agency for Special Needs and Inclusive Education, 2020). Research in Indonesian schools also indicates that transforming leadership towards more participatory, inclusive models can improve teacher performance and services for students with special educational needs (Zawawi, 2024). The present study confirms that inclusion-oriented leadership quality forms a critical foundation for sustaining inclusive programmes in senior high schools.

The relationship between principal leadership and teacher capacity deserves particular attention. With 105 teachers in the sample, the results show that inclusive education quality improves when leadership creates space for pedagogical dialogue, constructive supervision, and support for instructional adaptation. This echoes findings that teachers' self-efficacy in working with students with special educational needs increases when they perceive clear and consistent leadership support (Junaidi, 2023). Work on measuring teachers' attitudes towards inclusive education in Indonesia also shows that school climate plays a major role in transforming attitudes into actual classroom practice (Ediyanto et al., 2023). More recent quantitative research reports that a combination of positive teacher attitudes and structural support is associated with more differentiated teaching practices for learners with special needs (Soeharto et al., 2024). These patterns suggest that leadership which systematically develops teacher capacity may act as a crucial bridge between inclusive policy commitments and classroom practice.

Inclusive facilities also emerge as a significant predictor of inclusive education quality, with a regression coefficient of 0.218 and $t = 3.104$ ($p = .002$). This implies that improvements in physical facilities, adaptive learning media, and assistive devices are associated with higher perceived quality of services for students with special educational needs. The result is in line with management studies emphasising that systematic planning, procurement, and maintenance of inclusive facilities contribute to smooth delivery of learning support (Santi, 2025). Studies of inclusive schools in Indonesia likewise find that adequate infrastructure—from accessible buildings to dedicated support rooms—correlates positively with student comfort and the performance of support teachers (Simorangkir et al., 2021). Work on location suitability for inclusive senior high schools further identifies facilities as a key criterion in judging whether a school is fit to enrol students with disabilities (Hasanah et al., 2021). The present regression results thus reinforce the status of inclusive facilities as a structural precondition for translating inclusive policy into meaningful practice.

Accessibility and rights-based perspectives help to deepen the interpretation of this facilities effect. Research on infrastructure for students with disabilities highlights the importance of ramps, circulation routes, and visual markers in enhancing mobility and independence (Sina et al., 2025). From a legal standpoint, consumer protection studies argue that schools are obliged to provide safe, reasonable, and non-discriminatory facilities as part of the right to education for students with disabilities (Anggraini & Huda, 2025). Architectural work on inclusive school design also shows that accessible spatial layouts can enhance students' sense of belonging and reduce barriers to participation in academic and co-curricular activities (Bahari & Indriani, 2023). Within this framework, strengthening inclusive facilities is not merely a technical matter but a question of fulfilling the rights and dignity of students with special educational needs.

A relatively unexpected result is the non-significant effect of teacher training once principal leadership and facilities are controlled. Teacher training displays a negative, non-significant coefficient ($B = -0.139$; $p = .248$).

Theoretically, training programmes should enhance pedagogical competence, differentiated instruction, and assessment strategies for learners with special educational needs (Jannah, 2022). Yet evaluation studies often show that training effects are short-lived if not followed by supervision, mentoring, and school-based support (Wibowo & Rahayu, 2020). Policy analyses further stress that training misaligned with teachers' real needs tends to generate administrative compliance rather than genuine changes in practice (SH & Supriyono, 2024). In the present study, the non-significant effect suggests that the training experienced by respondents may still be episodic, overly generic, or weakly integrated with leadership and the facility support available in schools.

The limited influence of training may also be explained by how programmes are designed, facilitated, and internalised by participants. Intervention studies have found that practice-oriented training, classroom-based coaching, and sustained mentoring are more effective in shaping inclusive teaching behaviour than one-way lecture-style sessions (Novembli, 2024). Research on the roles and challenges of educators in inclusive settings indicates that teachers require opportunities for reflection, emotional support, and structured collaboration if new knowledge is to be converted into practice (Nilangsari, 2025). A systematic review of teaching efficacy in inclusive education likewise shows that efficacy beliefs are shaped by a combination of mastery experiences, social support, and supportive work environments, not just the number of training events attended (Kristiana & Fransiska, 2018). The present findings therefore point to the need to redesign teacher training in inclusive senior high schools from a focus on quantity to one emphasising depth of practice and long-term accompaniment.

Although training does not emerge as a statistically significant predictor, the study suggests that many teachers are still capable of developing inclusive practices through classroom experience, peer learning, and adaptive experimentation. Survey research in various Indonesian regions reports generally positive teacher perceptions of inclusive education, even as they acknowledge gaps in technical knowledge and resources (Padmadewi et al., 2024). Studies of enabling factors in inclusive primary schools identify internal teacher motivation, principal support, and parental involvement as key to sustaining inclusive services despite uneven access to formal training (Ummah, 2024). In early childhood education, teachers report substantial challenges in managing heterogeneous classes but often adapt through trial-and-error and collaboration with families (Ernawati & Haryono, 2025). In this light, the non-significant training effect in the regression model does not negate its importance; rather, it signals that impact is highly contingent on design quality, follow-up mechanisms, and integration within the broader school ecosystem.

From a policy and governance perspective, the finding that 58.2% of the variance in inclusive education quality is explained by principal leadership, teacher training, and inclusive facilities underscores the importance of focusing interventions at the school level. Policy analysis of inclusive education in Indonesia emphasises that success depends on alignment between national regulations and school management capacity (Siminto, 2023). Bibliometric work

on inclusive education research trends notes a persistent gap between normative commitments to inclusion and the realities of limited human and material resources in schools (Irawan, 2024). Studies on disparities and sustainability of inclusive schools further highlight the need for clustering strategies and the strengthening of resource centres to support other schools (Syarifudin, 2025). The present quantitative evidence supports calls for inclusive education policies that explicitly prioritise leadership development and facility management in school-level implementation plans.

The discussion of quality should also be situated within broader concepts of child-friendly schools and humanistic learning ecosystems. Literature on child-friendly school policy in inclusive settings argues that physical, psychological, and social protection must be integrated with curriculum and assessment adjustments (Saidi et al., 2024). Research on inclusive teaching strategies indicates that the combination of differentiated instruction, visual media, and team teaching can enhance perceived instructional effectiveness in diverse classrooms (Rahmadani, 2025). Qualitative studies of inclusive education implementation in public schools describe the importance of layered coordination among principals, class teachers, support teachers, and parents (Sutrisno & Briganti, 2025). Overall, the present findings are consistent with research that positions leadership and supportive learning environments as central pillars in inclusive schools that genuinely safeguard the well-being and development of all students.

Finally, interpretation of the results should acknowledge the limitations of design and context. Previous work shows that inclusive education in Indonesia continues to face challenges such as limited conceptual understanding, shortages of support teachers, and infrastructural constraints (Yusuf & Yeager, 2011). Research on inclusive implementation in Surakarta finds that policy support has not always translated into consistent practice, particularly at primary level (Yudhani & Kaltsum, 2023). Recent studies also identify typical challenges in suburban state schools, including teacher workload, insufficient high-quality training, and misalignment between curriculum demands and classroom realities (Sunardi et al., 2024). In this context, the cross-sectional design, self-report data, and focus on Pekanbaru in the present study constitute important limitations. Future research employing longitudinal and mixed-methods designs, and incorporating student and parent perspectives, would enrich understanding of the dynamics of inclusive education quality.

CONCLUSION

This study concludes that the quality of inclusive education in inclusive senior high schools in Pekanbaru is high, with most indicators of access, participation, and learning outcomes showing encouraging levels. The multiple regression model indicates that 58.2% of the variance in inclusive education quality is jointly explained by principal leadership, teacher training, and inclusive facilities.

Principal leadership emerges as the strongest predictor, with a standardised coefficient of $\beta = 0.700$ and a positive, significant effect on inclusive education

quality. This confirms the central role of principals as key agents in translating inclusive policy into school culture, operational policies, and classroom practice. Inclusive facilities also exert a positive, significant influence ($B = 0.218$), underscoring the importance of accessible physical environments and adaptive learning resources as structural foundations for effective inclusive service delivery.

By contrast, teacher training shows a negative, non-significant coefficient ($B = -0.139$, $p = .248$) in the presence of the other predictors. This does not imply that training is unimportant, but suggests that existing programmes may be insufficiently intensive, sustained, or aligned with teachers' needs and the structural support available in schools.

Practically, the findings recommend strengthening inclusion-oriented principal leadership, enhancing and maintaining disability-friendly facilities, and redesigning teacher training to be more contextual, practice-oriented, and continuous. At the policy level, regulatory and funding frameworks should prioritise school capacity-building for inclusive education implementation. Future studies are encouraged to broaden geographic coverage, adopt longitudinal and mixed-methods approaches, and integrate learner and family voices to generate a more comprehensive picture of inclusive education quality in Indonesia.

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